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These dragons are not all the same! A break up of the Australian agamid species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851) into three subspecies.

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ABSTRACT

Fieldwork in wetter forests in hillier parts of coastal New South Wales and Queensland (Australia) spanning some two decades yielded morphologically distinct variants of the putative species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851).

Museum records from the Australian Museum in Sydney and the Queensland Museum in Brisbane show these populations to be allopatric and separated by significant dry zone gaps, which these lizards would have extreme difficulty in bridging.

As each population are clearly evolving independently, they are herein formally named as subspecies according to the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Only the nominate form has an available name.

The three new subspecies being named herein are *Adelynhosersaur spinipes adelynae subsp. nov.*, *A. spinipes jackyae subsp. nov.* and *A. spinipes wilkiei subsp. nov.* respectively.

Keywords: Taxonomy; Nomenclature; Lizards; Dragon; Queensland; New South Wales; Australia; rainforest; *Adelynhosersaur*; *Hypsilurus*; genus; species; *spinipes*; new subpecies; *adelynae*; *jackyae*; *wilkiei.*

INTRODUCTION

The putative Australian agamid species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851), was formerly known as *Hypsilurus spinipes* (Duméril and Bibron, 1851), before being transferred to the newly named genus *Adelynhosersaur* by Hoser (2013), for reasons given in that paper.

The putative species is a rainforest obligate, confined to patches of wet forests in a zone from about Gosford on the New South Wales central coast to the ranges north-west of the Sunshine Coast, south-east Queensland.

Within this range, there are significant breaks in known populations. Notwithstanding the potential for specimens to be found in these areas, this is thought unlikely on the basis that the areas have already been heavily collected by herpetologists and museums in Australia and none have been found.

Furthermore these zones where the putative species are not known from are of generally unsuitable habitat for these lizards, being either flat, dry (as in dry forests, rather than rainforests), both, or otherwise unsuitable for these lizards.

This unsuitable habitat is also defined on the thermal properties within, as the putative species *A. spinipes* appears to prefer thermally inert rainforest habitats and its lifestyle does not include a significant amount of thermoregulation by shuttling as shown by Rummery *et al.* (1995).

Hence it appears that the extant populations are in fact well isolated from one another.

Based on the assumption that rainforests, being suiable areas of potential habitat have expanded in the post ice-age period of the last 12,000 years, it is reasonable to assume that these breaks in populations have been long standing.

Fieldwork by myself and co-workers in wetter forests in hillier parts of coastal New South Wales and Queensland (Australia) spanning some two decades yielded morphologically distinct variants of the putative species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851), which automatically led me to believe that more than one taxon was being labelled as "*Hypsilurus spinipes*".

Considerable data was obtained and compiled, but was unfortunately stolen in an illegal armed raid on our facility on 17 August 2011. However I have been able to access significant numbers of specimens, images and the like since that date, to enable this paper to be published, albeit without the bulk of the data I would like to have presented.

Museum records from the Australian Museum in Sydney and the Queensland Museum in Brisbane, Australia show the relevant populations to be allopatric and separated by significant dry zone gaps.

There are five main population centres, these being essentially as follows:

1/ The Central Coast of New South Wales, north of the Hawkesbury basin, that is sited north of Sydney and extending to the wetter hills in the region south of the Hunter Valley dry zone, south-west of Newcastle.

2/ The lower north coast of New South Wales, north and west of Myall Lakes, extending north to the hills inland and between Port Macquarie and Kempsey.

3/ The region around and inland from Nambucca Heads and Coffs Harbour on the mid north coast of New South Wales.

4/ The Border Ranges region of New South Wales and far southern Queensland, including wetter ranges immediately south of there, inland from Ballina and bounded by the Brisbane River Valley dry zone in the north.

5/ An area north and north-west of the Brisbane River, primarily including the wetter parts of the Sunshine Coast hinterland in south-east Queensland, north of the main part of the capital city of Brisbane.

As stated already, Rummery *et al.* (1995) noted an unusual inability of this putative species to be able to disperse outside of their preferred thermally inert habitat. This is further evidence in support of the long term isolation of each population.

As each population are clearly evolving independently, they are herein formally treated as subspecies according to the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

This is the most conservative level of taxonomic recognition allowed by the *International Code of Zoological Nomenclature.*

Two of these populations are noteworthy for the following reasons.
That from the lower north coast of New South Wales, north and west of Myall Lakes, extending north to the hills inland and between Port Macquarie and Kempsey and that from the region around and inland from Nambucca Heads and Coffs Harbour on the mid north coast of New South Wales, appear morphologically similar and so are believed to have been separated very recently. I treat them as being of the same subspecies herein. They also are most typical of the holotype specimen MNHN Paris (= MNHP) 2560 as described by Duméril and Bibron (1851).

This is noted as the original description provided a type locality of “Australia” but without exact location data.

Only this nominate form has an available name.

The three new subspecies being named herein, as in the other unnamed forms, are *Adelynhosersaur spinipes adelynae subsp. nov.* from the central coast of New South Wales, *A. spinipes jackyae subsp. nov.* from the Border Ranges region of NSW and Queensland and *A. spinipes wilkiei* from the Sunshine Coast hinterland, Queensland, respectively.

These and the nominate form are all readily separated from one another on the basis of adult colouration in both sexes as defined in the descriptions below.

I also note that it is likely that further study may result in these named subspecies being elevated to full species.

While the taxonomic judgements made herein are based on a direct inspection of specimens from each of the relevant populations, it is prudent for me to refer to some of the literature relevant to the species complex herein.

Key references include Boulenger (1885), Cogger (2014), Cogger *et al.* (1983), Denzer and Manthey (2016), Duméril and Bibron (1851), Fry (1915), Hoser (1989, 2013, 2014), Longley (1943), Manthey and Denzer (2006), Pianka and Vitt (2003), Rummery *et al.* (1995), Wells and Wellington (1983, 1985), Wilson (2015), Wilson and Swan (2003) and sources cited therein.

In terms of the theft of relevant materials from this author in an illegal armed raid on 17 August 2011 as already mentioned, I note that these were not returned (Court of Appeal Victoria 2014 and VCAT 2015) and this non-return of materials was in breach of various earlier court orders.

I have however made a decision to publish this paper.

This is in view of the conservation significance attached to the formal recognition of unnamed species or subspecies, being taxonomic units worthy of conservation and management by relevant authorities, be they government or non-government (NGO).

I note also that further delays may in fact put these otherwise unnamed taxa at greater risk of extinction should their status in the wild unexpectedly change, which is entirely possible in the face of the exponential human population growth in the relevant regions.

The situation is being exacerbated by the Australian government’s “Big Australia” population policy (Hoser 1991) which at the present time in 2016, leads to the realistic expectation of a ten-fold increase in number of humans in Australia (or more) in the period 2016 to 2216.

While it could be argued that the differences between specimens in the isolated populations are not worthy of taxonomic recognition, this view is contradicted by those expressed and actioned by Harvey *et al.* (2000). Also see the relevant paper of Moritz *et al.* (1993) in terms the issues of cryptic diversity of putative rainforest species in Australia, based on the home range fidelity of specimens.

***ADELYNHOSERSAUR SPINIPES* (DUMÉRIL AND BIBRON, 1851)**

Holotype: Specimen MNHN Paris (= MNHP) 2560, type locality, “Australia”.

Diagnosis: *Adelynhosersaur gen. nov.* is monotypic for the type species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851) and so the diagnosis below is for both. The species (and genus) is readily separated from other Australian *Tiaris* Duméril and Bibron, 1837 (the only genus it is likely to be confused with) and *Hypsilurus* from regions north of Australia, by the absence of a longitudinal row of grossly

enlarged scales on the throat. In the other two genera, such scales are similar to those of the nuchal crest. The genus *Adelynhosersaur gen. nov.* is also separated from all other Amphibolurinae by the following suite of characters: grey, grey-brown or chocolate brown above, often suffused with green.

Immaculate or with dark brown flecks, spots of variegations and occasionally with obscure dark transverse bands across the top of the back and tail. Whitish or dirty brown below. Usually a

broad, dark brown bar from the eye to the ear and some darker bars on the jaws. The body scales are heterogeneous, the scales on the dorsum and flanks are small and keeled and with scattered, enlarged, strongly keeled or spinose scales, often aligned to form irregular transverse rows. A series of enlarged

spinose scales on the upper surfaces of the limbs. There is a fairly strong nuchal crest continuous with a low but conspicuous dorsal crest. Gulars are keeled with a few scattered, larger, keeled scales, especially on the midline. Remaining ventral and caudal scales are strongly keeled. The head is large and wedgeshaped, with a thick, angular canthus rostralis which continues as an acute supraocular ridge. The tympanum is large and superficial. The nostril is subcircular, facing outwards and slightly backwards and downwards in an enlarged and somewhat swollen nasal scale lying below the canthal ridge. The

adpressed hindlimb reaches to between the eye and the tip of the snout, the hindlimb being about 90 per cent of the snout-vent length and the tail being about 200 per cent of the snout-vent length, (adapted from Cogger, 2000).

The separation of each of the relevant subspecies is as follows:

The nominate form of *A. spinipes spinipes* (Duméril and Bibron, 1851) herein confined to the mid north coast of New South

Wales is readily separated from the other species by the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, whereupon the colours abruptly merge to form a mottled but one colour appearance on the gular scales. There is also a well-defined, but slightly irregular dark temporal streak running from the back of the eye towards the ear, where it breaks up.

There are dark patches of scales, bounded by whitish scales, radiating from the upper eye.

Both fore and hind limbs have indistinct white crossbands.

The upper body surface has an obvious pattern.

The subspecies *A. spinipes adelynae subsp. nov.* from the New South Wales region bounded by the Hawkesbury River in the South and the Hunter Valley in the north, is readily separated from the other species by the absence of a well defined body pattern, instead being a reddish-brown all over with numerous irregular yellow spots. There are no white crossbands of any form on the limbs and there is no dark temporal streak running from the back of the eye towards the ear. Instead there is a narrow reddish flush at the same place. There is also a complete absence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down. Instead the upper and lower labials are a near immaculate yellowish brown or grey colour. The limbs lack any form of lightish crossbands, instead having irregular yellow or red spots on them, these sometimes being vaguely arranged in a very broken and irregular cross-limb configuration.

The upper body surface lacks an obvious pattern.

There are no dark patches of scales, bounded by whitish scales, radiating from the upper eye.

The subspecies *A. spinipes jackyae subsp. nov.* from the border ranges region of New South Wales and Queensland is like nominate *A. spinipes spinipes* in most respects, but can be readily separated from that subspecies by the following differences to that taxon, the dark patches of scales radiating from above the eye are either absent or indistinct and are not obviously bounded by whitish scales or not at all.

Furthermore the slightly irregular dark temporal streak running from the back of the eye towards the ear is small and broken, or alternatively small and narrow if unbroken, versus larger and unbroken in *A. spinipes spinipes.*

In terms of the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, the last of these extends across the equivalent upper labial to form an obvious stripe running into the eye. Where a similar configuration is rarely seen in some *A. spinipes spinipes*, the whitish marking on the upper labials is in the form of a faded spot, smudge or flush, rather than as a distinct line.

In *A. spinipes jackyae subsp. nov.* the ligher markings on the forelimbs form a pattern of irregular spotting as opposed to obvious crossbands.

The subspecies *A. spinipes wikiei subsp. nov.* from the general region encompassing the Sunshine Coast hinterland in south-east Queensland is superficially intermediate in form and appearance to the other species. However it can be readily separated from them all by the following suite of characters. Dark patches radiating from the upper eye are either absent, or if present, not bounded by white. The presence of five (or rarely four) distinct whitish bars on the lower labials is only in the form of a very faded pattern, versus distinct in each of *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov..*
The dorsal pattern of *A. spinipes wikiei subsp. nov.* is either faded or indistinct, versus distinct in both *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov..*

A. spinipes wikiei subsp. nov. lack any obvious white, whitish, yellow or red markings, spotting or crossbands on the forelimbs.

The body may have white or greyish-white flecks or irregular crossbands, but not the obvious red or yellow spots as seen in *A. spinipes adelynae subsp. nov..*

There are numerous quality photos of all four subspecies in numerous texts and also online, clearly showing the diagnostic features identified above.

A photograph of typical specimens of this taxon *A. spinipes spinipes* are depicted on page 743 of Cogger (2014), showing the well-defined white bars on the lower labials, a well-defined dorsal colour pattern and whitish flush or blob on the rear upper labials (photo of adult).

Distribution: *A. spinipes spinipes* is found in a region generally north of the Hunter Valley in New South Wales stretching north along the coast and immediately adjacent ranges to about Coffs Harbour on the mid north coast of New South Wales.

A. spinipes adelynae subsp. nov. is found in the New South Wales region generally bounded by the Hawkesbury River to the south and the lower Hunter Valley in the north.

A. spinipes jackyae subsp. nov. is generally found in the border ranges region of New South Wales and Queensland and immediately adjacent ranges, bound by the Brisbane River in the North.

A. spinipes wikiei subsp. nov. occurs in the general region encompassing the Sunshine Coast hinterland in south-east Queensland, bounded by the dry zone to to the north of the Conondale Range and the Brisbane River in the South.

ADELYNHOSERSAUR SPINIPES ADELYNAE SUBSP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, NSW, Australia, specimen number R.106775 collected at Ourimbah in New South Wales, with quoted Latitude 33.33, Longitude 151.35.

The Australian Museum in Sydney, NSW, Australia is a goverment owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Australian Museum in Sydney, NSW, Australia, specimen number R.5644 collected at Ourimbah in New South Wales, with quoted Latitude 33.37, Longitude 151.37.

Diagnosis: The separation of *A. spinipes adelynae* and the other relevant subspecies is as follows:

The nominate form of *A. spinipes spinipes* (Duméril and Bibron, 1851) herein confined to the mid north coast of New South Wales is readily separated from the other species by the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, whereupon the colours abruptly merge to form a mottled appearance on the gular scales. There is also a well-defined, but slightly irregular dark temporal streak running from the back of the eye towards the ear, where it breaks up.

There are dark patches of scales, bounded by whitish scales, radiating from the upper eye.

Both fore and hind limbs have indistinct white crossbands.

The upper body surface has an obvious pattern.

The subspecies *A. spinipes adelynae subsp. nov.* from the New South Wales region bounded by the Hawkesbury River in the South and the Hunter Valley in the north, is readily separated from the other species by the absence of a well defined body pattern, instead being a reddish-brown all over with numerous irregular yellow spots. There are no white crossbands of any form on the limbs and there is no dark temporal streak running from the back of the eye towards the ear. Instead there is a narrow reddish flush at the same place. There is also a complete absence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down. Instead the upper and lower labials are a near immaculate yellowish brown or grey colour. The limbs lack any form of lightish crossbands, instead having irregular yellow or red spots on them, these sometimes being vaguely arranged in a very broken and irregular cross-limb configuration.

The upper body surface lacks an obvious pattern.

There are no dark patches of scales, bounded by whitish scales, radiating from the upper eye.

The subspecies *A. spinipes jackyae subsp. nov.* from the border ranges region of New South Wales and Queensland is like nominate *A. spinipes spinipes* in most respects, but can be readily separated from that subspecies by the following differences to that taxon, the dark patches of scales radiating from above the eye are either absent or indistinct and are not obviously bounded by whitish scales or not at all.

Furthermore the slightly irregular dark temporal streak running from the back of the eye towards the ear is small and broken, or alternatively small and narrow if unbroken, versus larger and unbroken in *A. spinipes spinipes.*

In terms of the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, the last of these extends across the equivalent upper labial to form an obvious stripe running into the eye. Where a similar configuration is rarely seen in some *A. spinipes spinipes*, the whitish marking on the upper labials is in the form of a faded spot, blob or flush rather than as a distinct line.

In *A. spinipes jackyae subsp. nov.* the ligher markings on the forelimbs form a pattern of irregular spotting as opposed to obvious crossbands as seen in *A. spinipes spinipes*.

The subspecies *A. spinipes wikiei subsp. nov.* from the general region encompassing the Sunshine Coast hinterland in south-east Queensland is superficially intermediate in form and appearance to the other species. However it can be readily separated from them all by the following suite of characters. Dark patches radiating from the upper eye are either absent, or if present, not bounded by white. The presence of five (or rarely four) distinct whitish bars on the lower labials is only in the form of a very faded pattern, versus distinct in each of *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov.*.
The dorsal pattern of *A. spinipes wikiei subsp. nov.* is either faded or indistinct, versus distinct in both *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov.*.

A. spinipes wikiei subsp. nov. lack any obvious white, whitish, yellow or red markings or crossbands on the forelimbs. The body may have white or greyish-white flecks or irregular crossbands, but not the obvious red or yellow spots as seen in *A. spinipes adelynae subsp. nov.*.

There are numerous quality photos of all four subspecies in numerous texts and also online, clearly showing the diagnostic features identified above.

Adelynhosersaur gen. nov. is monotypic for the type species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851) and so the diagnosis below is for both. The species (and genus) is readily separated from other Australian *Tiaris* Duméril and Bibron, 1837 (the only genus it is likely to be confused with) and *Hypsilurus* from regions north of Australia, by the absence of a longitudinal row of grossly

enlarged scales on the throat. In the other two genera, such scales are similar to those of the nuchal crest. The genus *Adelynhosersaur gen. nov.* is also separated from all other Amphibolurinae by the following suite of characters: grey, grey-brown or chocolate brown above, often suffused with green.

Immaculate or with dark brown flecks, spots of variegations and occasionally with obscure dark transverse bands across the top of the back and tail. Whitish or dirty brown below. Usually a

broad, dark brown bar from the eye to the ear, and some darker bars on the jaws. The body scales are heterogeneous, the scales on the dorsum and flanks are small and keeled and with scattered, enlarged, strongly keeled or spinose scales, often aligned to form irregular transverse rows. A series of enlarged

spinose scales on the upper surfaces of the limbs. There is a fairly strong nuchal crest continuous with a low but conspicuous dorsal crest. Gulars are keeled with a few scattered, larger, keeled scales, especially on the midline. Remaining ventral and caudal scales are strongly keeled. The head is large and wedgeshaped, with a thick, angular canthus rostralis which continues as an acute supraocular ridge. The tympanum is large and superficial. The nostril is subcircular, facing outwards and slightly backwards and downwards in an enlarged and somewhat swollen nasal scale lying below the canthal ridge. The

adpressed hindlimb reaches to between the eye and the tip of the snout, the hindlimb being about 90 per cent of the snout-vent length and the tail being about 200 per cent of the snout-vent length, (adapted from Cogger, 2000).

A photograph of a typical specimen of this taxon is depicted in Swan (2008) (complete with a grossly erroneous distribution map on page 445), see specimen depicted at the bottom of page 447.

Distribution: Restricted to the coastal and near coastal parts of the northern central coast of New South Wales, Australia, in a region generally bounded by the Hawkesbury River to the south and the lower Hunter Valley in the north.

Etymology: Named in honour of my daughter, Adelyn Hoser, aged 17 as of 2016, from Park Orchards, Victoria, Australia in recognition of her significant contributions to herpetology and wildlife conservation in Australia. The generic name *Adelynhosersaur* Hoser, 2013 is also in her honour.

ADELYNHOSERSAUR SPINIPES JACKYAE SUBSP. NOV.

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J58004 collected at Levers Plateau, New South Wales, Australia, with a quoted Latitude -28.32, Longitude 152.85.

The Queensland Museum, Brisbane, Queensland, Australia is a goverment owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.141081 collected at Yabbra State Forest, New South Wales, Latitude -28.46, Longitude 152.67.

Diagnosis: The separation of *A. spinipes jackyae subsp. nov.* and the other relevant subspecies is as follows: The nominate form of *A. spinipes spinipes* (Duméril and Bibron, 1851) herein confined to the mid north coast of New South Wales is readily separated from the other species by the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, whereupon the colours abruptly merge to form a mottled appearance on the gular scales. There is also a well-defined, but slightly irregular dark temporal streak running from the back of the eye towards the ear, where it breaks up.

There are dark patches of scales, bounded by whitish scales, radiating from the upper eye.

Both fore and hind limbs have indistinct white crossbands.

The upper body surface has an obvious pattern.

The subspecies *A. spinipes adelynae subsp. nov.* from the New South Wales region bounded by the Hawkesbury River in the South and the Hunter Valley in the north, is readily separated from the other species by the absence of a well defined body pattern, instead being a reddish-brown all over with numerous irregular yellow spots. There are no white crossbands of any form on the limbs and there is no dark temporal streak running from the back of the eye towards the ear. Instead there is a narrow reddish flush at the same place. There is also a complete absence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down. Instead the upper and lower labials are a near immaculate yellowish brown or grey colour. The limbs lack any form of lightish crossbands, instead having irregular yellow or red spots on them, these sometimes being vaguely arranged in a very broken and irregular cross-limb configuration.

The upper body surface lacks an obvious pattern.

There are no dark patches of scales, bounded by whitish scales, radiating from the upper eye.

The subspecies *A. spinipes jackyae subsp. nov.* from the border ranges region of New South Wales and Queensland is like nominate *A. spinipes spinipes* in most respects, but can be readily separated from that subspecies by the following differences to that taxon, the dark patches of scales radiating from above the eye are either absent or indistinct and are not obviously bounded by whitish scales or not at all.

Furthermore the slightly irregular dark temporal streak running from the back of the eye towards the ear is small and broken, or alternatively small and narrow if unbroken, versus larger and unbroken in *A. spinipes spinipes.*

In terms of the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, the last of these extends across the equivalent upper labial to form an obvious stripe running into the eye. Where a similar configuration is rarely seen in some *A. spinipes spinipes*, the whitish marking on the upper labials is in the form of a faded spot, rather than as a distinct line.

In *A. spinipes jackyae subsp. nov.* the ligher markings on the forelimbs form a pattern of irregular spotting as opposed to obvious crossbands.

The subspecies *A. spinipes wikiei subsp. nov.* from the general region encompassing the Sunshine Coast hinterland in south-east Queensland is superficially intermediate in form and appearance to the other species. However it can be readily separated from them all by the following suite of characters. Dark patches radiating from the upper eye are either absent, or if present, not bounded by white. The presence of five (or rarely four) distinct whitish bars on the lower labials is only in the form of a very faded pattern, versus distinct in each of *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov.*.
The dorsal pattern of *A. spinipes wikiei subsp. nov.* is either faded or indistinct, versus distinct in both *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov.*.

A. spinipes wikiei subsp. nov. lack any obvious white, whitish, yellow or red markings or crossbands on the forelimbs. The body may have white or greyish-white flecks or irregular crossbands.

There are numerous quality photos of all four subspecies in numerous texts and also online, clearly showing the diagnostic features identified above.

Adelynhosersaur gen. nov. is monotypic for the type species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851) and so the diagnosis below is for both. The species (and genus) is readily separated from other Australian *Tiaris* Duméril and Bibron, 1837 (the only genus it is likely to be confused with) and *Hypsilurus* from regions north of Australia, by the absence of a longitudinal row of grossly

enlarged scales on the throat. In the other two genera, such scales are similar to those of the nuchal crest. The genus *Adelynhosersaur gen. nov.* is also separated from all other Amphibolurinae by the following suite of characters: grey, grey-brown or chocolate brown above, often suffused with green.

Immaculate or with dark brown flecks, spots of variegations and occasionally with obscure dark transverse bands across the top of the back and tail. Whitish or dirty brown below. Usually a

broad, dark brown bar from the eye to the ear, and some darker bars on the jaws. The body scales are heterogeneous, the scales on the dorsum and flanks are small and keeled and with scattered, enlarged, strongly keeled or spinose scales, often aligned to form irregular transverse rows. A series of enlarged

spinose scales on the upper surfaces of the limbs. There is a fairly strong nuchal crest continuous with a low but conspicuous dorsal crest. Gulars are keeled with a few scattered, larger, keeled scales, especially on the midline. Remaining ventral and caudal scales are strongly keeled. The head is large and wedgeshaped, with a thick, angular canthus rostralis which continues as an acute supraocular ridge. The tympanum is large and superficial. The nostril is subcircular, facing outwards and slightly backwards and downwards in an enlarged and somewhat swollen nasal scale lying below the canthal ridge. The

adpressed hindlimb reaches to between the eye and the tip of the snout, the hindlimb being about 90 per cent of the snout-vent length and the tail being about 200 per cent of the snout-vent length, (adapted from Cogger, 2000).

A photograph of a typical specimen of this taxon *A. spinipes jackyae subsp. nov.* is depicted on page 325 of Wilson and Swan (2003), showing a well-defined dorsal colour pattern, the dark patches of scales radiating from above the eye are not obviously bounded by whitish scales and that the dark temporal streak running from the back of the eye towards the ear is small.

Distribution: Restricted to the coastal and near coastal parts of the Border Ranges area of south-east Queensland and North-east New South Wales, Australia, including ranges immediately south of here, in a region generally bounded by the Brisbane River in the north.

Etymology: Named in honour of my daughter, Jacky Hoser aged 15 as of 2016, from Park Orchards, Victoria, Australia in recognition of her significant contributions to herpetology and wildlife conservation in Australia.

ADELYNHOSERSAUR SPINIPES WILKIEI SUBSP. NOV.

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J27724 collected at Little Yabba Creek, via Kenilworth, Sunshine Coast, Queensland with a quoted Latitude -26.60, Longitude 152.58.

The Queensland Museum, Brisbane, Queensland, Australia is a goverment owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J27748, collected at Gallangowan, via Kandanga, Queensland Australia, with a quoted Latitude -26.43, Longitude 152.28.

Diagnosis: The separation of *A. spinipes wilkiei subsp. nov.* and the other relevant subspecies is as follows: The nominate form of *A. spinipes spinipes* (Duméril and Bibron, 1851) herein confined to the mid north coast of New South Wales is readily separated from the other species by the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, whereupon the colours abruptly merge to form a mottled appearance on the gular scales. There is also a well-defined, but slightly irregular dark temporal streak running from the back of the eye towards the ear, where it breaks up.

There are dark patches of scales, bounded by whitish scales, radiating from the upper eye.

Both fore and hind limbs have indistinct white crossbands.

The upper body surface has an obvious pattern.

The subspecies *A. spinipes adelynae subsp. nov.* from the New South Wales region bounded by the Hawkesbury River in the South and the Hunter Valley in the north, is readily separated from the other species by the absence of a well defined body pattern, instead being a reddish-brown all over with numerous irregular yellow spots. There are no white crossbands of any form on the limbs and there is no dark temporal streak running from the back of the eye towards the ear. Instead there is a narrow reddish flush at the same place. There is also a complete absence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down. Instead the upper and lower labials are a near immaculate yellowish brown or grey colour. The limbs lack any form of lightish crossbands, instead having irregular yellow or red spots on them, these sometimes being vaguely arranged in a very broken and irregular cross-limb configuration.

The upper body surface lacks an obvious pattern.

There are no dark patches of scales, bounded by whitish scales, radiating from the upper eye.

The subspecies *A. spinipes jackyae subsp. nov.* from the border ranges region of New South Wales and Queensland is like nominate *A. spinipes spinipes* in most respects, but can be readily separated from that subspecies by the following differences to that taxon, the dark patches of scales radiating from above the eye are either absent or indistinct and are not obviously bounded by whitish scales or not at all.

Furthermore the slightly irregular dark temporal streak running from the back of the eye towards the ear is small and broken, or alternatively small and narrow if unbroken, versus larger and unbroken in *A. spinipes spinipes.*

In terms of the presence of five (or rarely four) distinct whitish bars on the lower labials, separated by darker brownish-black bars both extending 3-5 scales down, the last of these extends across the equivalent upper labial to form an obvious stripe running into the eye. Where a similar configuration is rarely seen in some *A. spinipes spinipes*, the whitish marking on the upper labials is in the form of a faded spot, rather than as a distinct line.

In *A. spinipes jackyae subsp. nov.* the ligher markings on the forelimbs form a pattern of irregular spotting as opposed to obvious crossbands.

The subspecies *A. spinipes wikiei subsp. nov.* from the general region encompassing the Sunshine Coast hinterland in south-east Queensland is superficially intermediate in form and appearance to the other species. However it can be readily separated from them all by the following suite of characters. Dark patches radiating from the upper eye are either absent, or if present, not bounded by white. The presence of five (or rarely four) distinct whitish bars on the lower labials is only in the form of a very faded pattern, versus distinct in each of *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov..*
The dorsal pattern of *A. spinipes wikiei subsp. nov.* is either faded or indistinct, versus distinct in both *A. spinipes spinipes* and *A. spinipes jackyae subsp. nov..*

A. spinipes wikiei subsp. nov. lack any obvious white, whitish, yellow or red markings or crossbands on the forelimbs. The body may have white or greyish-white flecks or irregular crossbands.

There are numerous quality photos of all four subspecies in numerous texts and also online, clearly showing the diagnostic features identified above.

Adelynhosersaur gen. nov. is monotypic for the type species *Adelynhosersaur spinipes* (Duméril and Bibron, 1851) and so the diagnosis below is for both. The species (and genus) is readily separated from other Australian *Tiaris* Duméril and Bibron, 1837 (the only genus it is likely to be confused with) and *Hypsilurus* from regions north of Australia, by the absence of a longitudinal row of grossly

enlarged scales on the throat. In the other two genera, such scales are similar to those of the nuchal crest. The genus *Adelynhosersaur gen. nov.* is also separated from all other Amphibolurinae by the following suite of characters: grey, grey-brown or chocolate brown above, often suffused with green.

Immaculate or with dark brown flecks, spots of variegations and occasionally with obscure dark transverse bands across the top of the back and tail. Whitish or dirty brown below. Usually a

broad, dark brown bar from the eye to the ear, and some darker bars on the jaws. The body scales are heterogeneous, the scales on the dorsum and flanks are small and keeled and with scattered, enlarged, strongly keeled or spinose scales, often aligned to form irregular transverse rows. A series of enlarged

spinose scales on the upper surfaces of the limbs. There is a fairly strong nuchal crest continuous with a low but conspicuous dorsal crest. Gulars are keeled with a few scattered, larger, keeled scales, especially on the midline. Remaining ventral and caudal scales are strongly keeled. The head is large and wedgeshaped, with a thick, angular canthus rostralis which continues as an acute supraocular ridge. The tympanum is large and superficial. The nostril is subcircular, facing outwards and slightly backwards and downwards in an enlarged and somewhat swollen nasal scale lying below the canthal ridge. The

adpressed hindlimb reaches to between the eye and the tip of the snout, the hindlimb being about 90 per cent of the snout-vent length and the tail being about 200 per cent of the snout-vent length, (adapted from Cogger, 2000).

A photograph of a typical specimen of this taxon is depicted on page 201 of Wilson (2015), showing the relatively indistinct white bars on the lower labials (or them being absent) and a general lack of an obvious dorsal colour pattern, this being a specimen from the southernmost extremity of the range of this subspecies.

Distribution: Restricted to the coastal and near coastal parts of wetter south-east Queensland in an area generally north of the Brisbane River and south of the Conondale Range (including them) in suitable hilly rainforest remnants.

Etymology: Named in honour of Andrew Damien Wilkie born 8 November 1961 at Tamworth, New South Wales, Australia. He is as of 2016 an Australian politician and independent Federal member for Denison. He has been an army officer and an intelligence analyst.

In 2003 Wilkie resigned from his position in the Office of National Assessments, an Australian intelligence agency, over concerns that intelligence was being exaggerated for political purposes in making the case for Australia's contribution to the 2003 invasion of Iraq under the Howard Liberal government.

Since then he has been active in Australian politics. He was a Greens candidate for the federal Division of Bennelong in the 2004 federal election and for the Senate in Tasmania at the 2007 federal election. In 2010 he stood as an independent candidate for the state seat of Denison at the Tasmanian state election, narrowly missing out on the final vacancy. Later in the year, again as an independent candidate, he ran for the federal seat of Denison at the 2010 federal election and won, finishing third on the primary vote but winning the seat after the distribution of preferences. Wilkie finished first on the primary vote at the 2013 federal election and increased his margin.

He has been an outspoken critic of Australian and other western governments sending troops to third-world countries such as Iraq to kill innocent men, women and children on the basis of lies such as US President George Bush's alleged "weapons of mass destruction" in 2003.

In July 2016, following the issue of the UK Chilcot Report, criticizing former UK PM Tony Blair for lying to the public about his excuse to declare war against Iraq, Wilkie told the Australian media that former Liberal Prime Minister, John Howard and other political leaders of the time, had "blood on their hands" as a result of their illegal and improper sending Australian military forces to the second Iraq Gulf war, causing Australia to become a so-called terrorist target (Baxendale 2016, Hinman 2016, Osborne 2016, Tillett 2016).

NOTES ON THE DESCRIPTIONS FOR ANY POTENTIAL REVISERS

Unless mandated by the rules of the *International Code of Zoological Nomenclature*, none of the spellings of the newly proposed names should be altered in any way. Should one or more newly named taxa be merged by later authors to be treated as a single subspecies, the order of prority of retention of names should be the order (page priority) of the descriptions within this text, that is *adelynae*, *jackyae*, *wilkiei.*

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CONFLICT OF INTEREST

The author has no known conflicts of interest in terms of this paper and conclusions within.

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