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Dealing with a taxonomic disaster zone … 39 new species and 11 new subspecies within *Ctenotus* Storr, 1964 *sensu lato*.

... CONTINUED FROM *AUSTRALASIAN JOURNAL OF HERPETOLOGY*, ISSUE 68, PUBLISHED AT THE SAME TIME AS ISSUE 69.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming black specking towards the distal end.
K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. labillardieri is depicted in life in Wilson and Swan (2021) on page 279 at top left and online at:
https://www.inaturalist.org/observations/189541229

K. pailsei sp. nov. (of the nominate subspecies) is depicted in life online at:
https://www.inaturalist.org/observations/64036697

and

https://www.inaturalist.org/observations/189650296

and

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and

https://www.inaturalist.org/observations/170819053

K. pailsei menang subsp. nov. is depicted in life in Wilson and Swan (2021) on page 279 top right, Cogger (2014) on page 504 top left and online at:

https://www.inaturalist.org/observations/156506659

and

https://www.inaturalist.org/observations/903209

and

https://www.inaturalist.org/observations/169932677

and

https://www.inaturalist.org/observations/185723885

K. pailsei whadjuk subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/188369673

and

https://www.inaturalist.org/observations/195882908

K. grantturneri sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/51903990

and

https://www.inaturalist.org/observations/139432357

and

https://www.inaturalist.org/observations/179390

and

https://www.inaturalist.org/observations/47082653

K. alexanderdudleyi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/145471553

and

https://www.inaturalist.org/observations/48740005

K. graysonoconnori sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/176228

and

https://www.inaturalist.org/observations/46121694

and

https://www.inaturalist.org/observations/104340376

Distribution: *K. pailsei sp. nov*. is the relevant taxon for the populations previously known as the southwestern Australian species *K. labillardieri* that occurs in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the

Fitzgerald National Park in the east.

In turn that population is divided into 3 subspecies;

The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast.

As a result, *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north.

Etymology: The taxon *K. pailsei sp. nov*. is named in honour of Roy Pails of Delacombe, (Ballarat), Victoria, Australia, who has dedicated his lifetime to the research and conservation of snakes, reptiles and other wildlife. In most recent years (2010-2024) has worked extensively as "Pails for scales conservation" creating a network of important wildlife sanctuaries across southern and eastern Australia.

He has also organised teams of zoologists to conduct field surveys in remote parts of Australia to assist in the scientific research on and conservation of Australia's wildlife.

Roy is known to friends as "Pailse" or "Pailsey" and so the spelling of the species name "*pailsei*" is intentional and should not be changed.

KOMMOSAGOGUS PAILSEI MENANG SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:63CC8F64-6713-492B-A49A-151566B58EFA

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R140763 collected about 15 km west of Walpole, Western Australia, Australia, Latitude -34.963611 S., Longitude 116.602778 E.

This government owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R165587 and R165587 both collected from the Walpole area, Western Australia, Australia, Latitude -34.99 S., Longitude E.

Diagnosis: Notwithstanding the formal recognition of several divergent species within the so-called "*Ctenotus labillardieri* (Duméril and Bibron, 1839) complex", including the relatively recent paper of Kay and Keogh (2012), it has been clear for some time that the putative species within the south-west Australian genus *Kommosagogus* Wells and Wellington, 1984 as recognised herein still contain a number of taxonomically significant and unnamed forms.

This paper has formally named the obvious ones by:

1/ Dividing *K. labillardieri* five ways and with two additional subspecies, all beyond *K. labillardieri* being named for the first time;

2/ *K. catenifer* (Storr, 1974) is split three ways with *K. hickmani* Wells and Wellington, 1985 resurrected from synonymy and a new species, *K. rosswellingtoni sp. nov.* formally named;

3/ *K. gemmula* (Storr, 1974) is also split three ways, with the southern population formally named *K. wellsei sp. nov*..and the westernmost population from Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) on the eastern south coast of Western Australia formally named as *K. trevorhawkeswoodi sp. nov*..

Within putative *K. labillardieri* the following taxonomic actions are made.

1/ *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north;
2/ *K. pailsei sp. nov*. is the relevant taxon for the populations in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park.

In turn that population is divided into 3 subspecies;

3/ The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

4/ The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast;

5/ *K. grantturneri sp. nov*. is a taxon restricted to the Stirling Ranges in south-west Western Australia;

6/ *K. alexanderdudleyi sp. nov*. is the taxon found from about Hopetoun in the west and near Dalyup in the east along the coastal strip in southern Western Australia;

7/ *K. graysonoconnori sp. nov*. is the relevant taxon found in southern Western Australia from Cape Le Grand in the west along the coast to Cape Aird in the east in the near coastal area.

The five species and additional two subspecies, defined herein as "the complex", are separated from one another with the following unique characters or combinations of them:

Nominate *C. labillardieri* was well-defined by Ford (1969) in what he defined as the population in the "northern Part of the Darling Range" and is in effect adopted herein as diagnostic for the taxon in terms of colouration with a few minor modifications in light of newly described taxa since his paper was published in 1969.

C. labillardieri has sharply defined markings on back and sides. Dorsum is a light bronze-brown colour. A narrow white sharp-edged line starts on the supraoculars (which themselves are whitish and with narrow dark bars) and runs dorsolaterally down to the tail where it becomes less distinct. Bordering on the dorsal side of this is a fine black line of similar sharpness and below, starting at the eye, is a broad jet-black band that is finely spotted with white and pale brown flecks at the anterior end of the body (only). This band is bounded below by a thin white mid-lateral line which commences below the eye, passes through the ear and over the limbs to the tail. It is ragged edged compared to the dorsolateral white line which is not. Below this is a jagged and sometimes broken blackish line (thicker anteriorly on the body, thinner and likely to have breaks posteriorly on the body), which in turn is followed below by the ragged white edge of the ventrolateral border. Venter is white, except for the chin and throat which are white with small brown flecks on the scales.
There is no distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

The closely related species *Ctenotus ora* Kay and Keogh, 2012 from the south-west corner of Western Australia, is morphologically similar to the above species complex in particular *C. labillardieri*, but it is readily separated from that taxon and all others in the species complex by the fact that the back is silvery grey with minute black flecking, no white speckling on the flanks or on the dorsal black line and that the upper surface of the limbs are orange with small irregularly shaped markings that are not interconnected, (for further separation of this taxon from other similar species not in this species complex, see Kay and Keogh, 2012).

K. pailsei sp. nov. (of the nominate subspecies) is readily separated from the other subspecies and species in the complex by the unique combination of: A wide black stripe on the dorsum before the yellow-white dorsolateral line, in effect reducing the size of the brownish mid-dorsal zone. Both these black lines on the dorsum and the wide black upper band on the upper flanks have numerous scattered large well-defined and distinct yellow-white spots. There is a distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

K. pailsei menang subsp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: It is essentially similar to the nominate form of *K. pailsei sp. nov*., but separated from that taxon by having a generally more chocolate brown colouration on the dorsum; the large well-defined and distinct yellow-white spots on the black of the lateral parts of the dorsum form a well-defined single line and in some specimens are semi-distinct only; the white line of the mid-lower flank is well defined and raged edged top and bottom, versus not well defined on the lower edge in the nominate form of *K. pailsei sp. nov*..

Orange flecks or markings behind the eye, if present in *K. pailsei menang subsp. nov*., are not in the form of a distinct row of 7 orange spots.

K. pailsei whadjuk subsp. nov. is similar in most respects to *K. pailsei menang subsp. nov*., but separated from that taxon by the fact that the spotting on the black on the lateral edges of the dorsum and upper flanks is reduced in number, intensity and size of spots, with a lot of the tiny spots being dark yellowish and brown, rather than a bright white or light yellow as seen in *K. pailsei menang subsp. nov*..

In *K. pailsei whadjuk subsp. nov*. has the unique combination of the white line of the lower flank and black below more-or-less merge to become a matrix of mottling that is both barker and lighter, generally appearing a mottled or marbled colour, gradually fading as one moves towards the belly proper. In other words, there is no obvious jagged edged white line on the lower flank. There is a medium to large patch immediately behind the eye, but in no way does this form part of a row of spots running posteriorly along the side of the head.

K. grantturneri sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A distinctively ragged edged yellow-white dorsolateral line, made more so by breaks or near breaks and extensions consisting of dots joined to the main line on both the upper and lower edges. Tiny scattered white spots on the black of the upper flanks are reduced in size and number. The black lines at the lateral edge of the dorsum are reduced in size and almost wholly obscured by intrusions of brown on the vertebral side and white scale intrusions from the lateral edge side. Behind the eye, the colour is either dark and with at most one or two scattered tiny yellow spots, or alternatively dark and brown marbled, but again without any obvious row of spots.

K. alexanderdudleyi sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A thick, well-defined, and slightly jagged edged bold yellow dorsolateral line. The black on the dorsal side is expanded to form a well-defined black line. On the vertebral side edge there are light brown, yellow and white scales abutting the black, making the black lines even better defined.

On the black band of the upper flank, there are small and large yellow-white spots that are reasonably well spaced and more-or-less aligned along the middle of the band, rather than the edges. The 10-12 large

spots are on centre and the smaller ones are off centre, usually lower only anteriorly and as upper and lower pairs at the posterior end of the flank. Below this black section there is a series of broken short lines or dashes (sometimes touching and at other times not), the anterior edge lower than the upper beneath which is black. The white lower boundary of the black is similar to and in parallel to the upper and this is the zone just where the belly meets. Within each wider part of the black, is a tiny white dot, giving this section of the flank the appearance of having a series of black with white centred ocelli. Behind the eye is jet black with a series of 6-7 moderately large orange dots running to the ear in a single midline.

K. graysonoconnori sp. nov. is separated from the other species in the complex by the unique combination of the following: There is a very bold and distinctive dorsal and lateral pattern. The brown of the dorsum, running along the mid-section down the body is reduced in size, making the black of the sides of the dorsum wider. On some specimens at the vertebral line, the brown of the dorsum may tend to fragment leading the partial formation of a black mid-dorsal line. On the inner edge of the black dorsal lines there are no scales of lighter or different colour to the brown on top. While the white dorsolateral lines are complete and even edged, on each scale there is a white protrusion giving a slightly ragged appearance on close inspection.

The black line along the upper flank is reduced in thickness as compared to the other species in the complex, generally going only about halfway down the flank, rather than obviously more than half in all other species in the complex. Running along the middle of this black line is a series of 16-18 mainly medium yellow-white spots, evenly spaced and running along the midline only. A very small number of tiny yellow-white spots are on the black area as well, usually between some of the larger spots and occasionally randomly placed elsewhere.

Below the black of the upper flank, the white is in the form of a jagged edged, but boldly defined white line, similar in form at the lower edge, giving it the form of a tight zig-zag line. Below this is a similar white upper edge that forms the boundary to the white belly.

Behind the eye and between the ear may be none, or one to four small yellow dots in a line.

The preceding species are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Obviously reddish legs that are heavily marked with black and further distinguishable from most morphologically similar taxa in south-west Australia by the white dorsolateral line that is effectively continuous (not a series of spots or dashes) and not any obvious speckled type of pattern.

In passing, I note that specimens of the species *K. hickmani* Wells and Wellington, 1985 have been since treated as being of either putative *K. labillardieri* or *K. catenifer* Storr, 1974.

K. hickmani is recognised herein as a separate species to both and is also allopatric to both.

K. hickmani is readily separated from *K. labillardieri* by the unique presence of a distinctively speckled appearance.

The dorsolateral white stripes may or may not be discontinuous. If discontinuous, it may be reduced to a series of white dashes.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming black specking towards the distal end.
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Distribution: *K. pailsei sp. nov*. is the relevant taxon for the populations previously known as the southwestern Australian species *K. labillardieri* that occurs in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park in the east.

In turn that population is divided into 3 subspecies;

The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

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This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast.

As a result *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north.

Etymology: The taxon *K. pailsei menang subsp. nov*. is named in honour of the Menang people, the original Aboriginal inhabitants of the region this taxon occurs. Most were exterminated by the British at the time they invaded, either directly or via introduced diseases such as smallpox.

The spelling and formation of the subspecies name is intentional and should be amended to add “orum” or similar.

KOMMOSAGOGUS PAILSEI WHADJUK SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:167726DB-066D-46C4-9C2D-A454B3F899B7

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R113336 collected from 5 km east south-east of Margaret River, Western Australia, Australia, Latitude -33.983333 S., Longitude 115.116667 E.

This government owned facility allows access to its holdings.

Paratypes: Six preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, being 1/ Specimen number R113337 collected from 5 km east south-east of Margaret River, Western Australia, Australia, Latitude -33.983333 S., Longitude 115.116667 E., 2/ Specimen numbers R142382 and R142327 both collected 8.5 km east of Dwellingup, Western Australia, Australia, Latitude -32.746389 S., Longitude 116.151944 E., 3/ Specimen numbers R132092, R132093 and R135756 all collected from Cape Leeuwin, Western Australia, Australia, Latitude -34.366667 S., Longitude 115.133333 E.

Diagnosis: Notwithstanding the formal recognition of several divergent species within the so-called “*Ctenotus labillardieri* (Duméril and Bibron, 1839) complex”, including the relatively recent paper of Kay and Keogh (2012), it has been clear for some time that the putative species within the south-west Australian genus *Kommosagogus* Wells and Wellington, 1984 as recognised herein still contain a number of taxonomically significant and unnamed forms.

This paper has formally named the obvious ones by:

1/ Dividing *K. labillardieri* five ways and with two additional subspecies, all beyond *K. labillardieri* being

named for the first time;

2/ *K. catenifer* (Storr, 1974) is split three ways with *K. hickmani* Wells and Wellington, 1985 resurrected from synonymy and a new species, *K. rosswellingtoni sp. nov.* formally named;

3/ *K. gemmula* (Storr, 1974) is also split three ways, with the southern population formally named *K. wellsei sp. nov*..and the westernmost population from Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) on the eastern south coast of Western Australia formally named as *K. trevorhawkeswoodi sp. nov*..

Within putative *K. labillardieri* the following taxonomic actions are made.

1/ *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north;
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7/ *K. graysonoconnori sp. nov*. is the relevant taxon found in southern Western Australia from Cape Le Grand in the west along the coast to Cape Aird in the east in the near coastal area.

The five species and additional two subspecies, defined herein as “the complex”, are separated from one another with the following unique characters or combinations of them:
Nominate *C. labillardieri* was well-defined by Ford (1969) in what he defined as the population in the “northern Part of the Darling Range” and is in effect adopted herein as diagnostic for the taxon in terms of colouration with a few minor modifications in light of newly described taxa since his paper was published in 1969.

C. labillardieri has sharply defined markings on back and sides. Dorsum is a light bronze-brown colour. A narrow white sharp-edged line starts on the supraoculars (which themselves are whitish and with narrow dark bars) and runs dorsolaterally down to the tail where it becomes less distinct. Bordering on the dorsal side of this is a fine black line of similar sharpness and below, starting at the eye, is a broad jet-black band that is finely spotted with white and pale brown flecks at the anterior end of the body (only). This band is bounded below by a thin white mid-lateral line which commences below the eye, passes through the ear and over the limbs to the tail. It is ragged edged compared to the dorsolateral white line which is not. Below this is a jagged and sometimes broken blackish line (thicker anteriorly on the body, thinner and likely to have breaks posteriorly on the body), which in turn is followed below by the ragged white edge of the ventrolateral border. Venter is white, except for the chin and throat which are white with small brown flecks on the scales.
There is no distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

The closely related species *Ctenotus ora* Kay and Keogh, 2012 from the south-west corner of Western Australia, is morphologically similar to the above species complex in particular *C. labillardieri*, but it is readily separated from that taxon and all others in the species complex by the fact that the back is silvery grey with minute black flecking, no white speckling on the flanks or on the dorsal black line and that the upper surface of the limbs are orange with small irregularly shaped markings that are not interconnected, (for further separation of this taxon from other similar species not in this species complex, see Kay and Keogh, 2012).

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K. pailsei menang subsp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: It is essentially similar to the nominate form of *K. pailsei sp. nov*., but separated from that taxon by having a generally more chocolate brown colouration on the dorsum; the large well-defined and distinct yellow-white spots on the black

of the lateral parts of the dorsum form a well-defined single line and in some specimens are semi-distinct only; the white line of the mid-lower flank is well defined and raged edged top and bottom, versus not well defined on the lower edge in the nominate form of *K. pailsei sp. nov*..

Orange flecks or markings behind the eye, if present in *K. pailsei menang subsp. nov*., are not in the form of a distinct row of 7 orange spots.

K. pailsei whadjuk subsp. nov. is similar in most respects to *K. pailsei menang subsp. nov*., but separated from that taxon by the fact that the spotting on the black on the lateral edges of the dorsum and upper flanks is reduced in number, intensity and size of spots, with a lot of the tiny spots being dark yellowish and brown, rather than a bright white or light yellow as seen in *K. pailsei menang subsp. nov*..

In *K. pailsei whadjuk subsp. nov*. has the unique combination of the white line of the lower flank and black below more-or-less merge to become a matrix of mottling that is both barker and lighter, generally appearing a mottled or marbled colour, gradually fading as one moves towards the belly proper. In other words, there is no obvious jagged edged white line on the lower flank. There is a medium to large patch immediately behind the eye, but in no way does this form part of a row of spots running posteriorly along the side of the head.

K. grantturneri sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A distinctively ragged edged yellow-white dorsolateral line, made more so by breaks or near breaks and extensions consisting of dots joined to the main line on both the upper and lower edges. Tiny scattered white spots on the black of the upper flanks are reduced in size and number. The black lines at the lateral edge of the dorsum are reduced in size and almost wholly obscured by intrusions of brown on the vertebral side and white scale intrusions from the lateral edge side. Behind the eye, the colour is either dark and with at most one or two scattered tiny yellow spots, or alternatively dark and brown marbled, but again without any obvious row of spots.

K. alexanderdudleyi sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A thick, well-defined, and slightly jagged edged bold yellow dorsolateral line. The black on the dorsal side is expanded to form a well-defined black line. On the vertebral side edge there are light brown, yellow and white scales abutting the black, making the black lines even better defined.

On the black band of the upper flank, there are small and large yellow-white spots that are reasonably well spaced and more-or-less aligned along the middle of the band, rather than the edges. The 10-12 large spots are on centre and the smaller ones are off centre, usually lower only anteriorly and as upper and lower pairs at the posterior end of the flank. Below this black section there is a series of broken short lines or dashes (sometimes touching and at other times not), the anterior edge lower than the upper beneath which is black. The white lower boundary of the black is similar to and in parallel to the upper and this is the zone just where the belly meets. Within each wider part of the black, is a tiny white dot, giving this section of the flank the appearance of having a series of black with white centred ocelli. Behind the eye is jet black with a series of 6-7 moderately large orange dots running to the ear in a single midline.

K. graysonoconnori sp. nov. is separated from the other species in the complex by the unique combination of the following: There is a very bold and distinctive dorsal and lateral pattern. The brown of the dorsum, running along the mid-section down the body is reduced in size, making the black of the sides of the dorsum wider. On some specimens at the vertebral line, the brown of the dorsum may tend to fragment leading the partial formation of a black mid-dorsal line. On the inner edge of the black dorsal lines there are no scales of lighter or different colour to the brown on top. While the white dorsolateral lines are complete and even edged, on each scale there is a white protrusion giving a slightly ragged appearance on close inspection.

The black line along the upper flank is reduced in thickness as compared to the other species in the complex, generally going only about halfway down the flank, rather than obviously more than half in all other species in the complex. Running along the middle of this black line is a series of 16-18 mainly medium yellow-white spots, evenly spaced and running along the midline only. A very small number of tiny yellow-white spots are on the black area as well, usually between some of the larger spots and occasionally randomly placed elsewhere.

Below the black of the upper flank, the white is in the form of a jagged edged, but boldly defined white line, similar in form at the lower edge, giving it the form of a tight zig-zag line. Below this is a similar white upper edge that forms the boundary to the white belly.

Behind the eye and between the ear may be none, or one to four small yellow dots in a line.

The preceding species are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. by the following unique combination of characters:

Obviously reddish legs that are heavily marked with black and further distinguishable from most morphologically similar taxa in south-west Australia by

the white dorsolateral line that is effectively continuous (not a series of spots or dashes) and not any obvious speckled type of pattern.

In passing, I note that specimens of the species *K. hickmani* Wells and Wellington, 1985 have been since treated as being of either putative *K. labillardieri* or *K. catenifer* Storr, 1974.

K. hickmani is recognised herein as a separate species to both and is also allopatric to both.

K. hickmani is readily separated from *K. labillardieri* by the unique presence of a distinctively speckled appearance.

The dorsolateral white stripes may or may not be discontinuous. If discontinuous, it may be reduced to a series of white dashes.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming black specking towards the distal end.
K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. labillardieri is depicted in life in Wilson and Swan (2021) on page 279 at top left and online at:
https://www.inaturalist.org/observations/189541229

K. pailsei sp. nov. (of the nominate subspecies) is depicted in life online at:
https://www.inaturalist.org/observations/64036697

and

https://www.inaturalist.org/observations/189650296

and

https://www.inaturalist.org/observations/64036691

and

https://www.inaturalist.org/observations/170819053

K. pailsei menang subsp. nov. is depicted in life in Wilson and Swan (2021) on page 279 top right, Cogger (2014) on page 504 top left and online at:

https://www.inaturalist.org/observations/156506659

and
https://www.inaturalist.org/observations/903209

and

https://www.inaturalist.org/observations/169932677

and

https://www.inaturalist.org/observations/185723885

K. pailsei whadjuk subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/188369673

and
https://www.inaturalist.org/observations/195882908
K. grantturneri sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/51903990

and

https://www.inaturalist.org/observations/139432357

and

https://www.inaturalist.org/observations/179390

and

https://www.inaturalist.org/observations/47082653

K. alexanderdudleyi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/145471553

and

https://www.inaturalist.org/observations/48740005

K. graysonoconnori sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/176228

and

https://www.inaturalist.org/observations/46121694

and

https://www.inaturalist.org/observations/104340376

Distribution: *K. pailsei sp. nov*. is the relevant taxon for the populations previously known as the southwestern Australian species *K. labillardieri* that occurs in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park in the east.

In turn that population is divided into 3 subspecies;

The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast.

As a result, *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north.

Etymology: The taxon *K. pailsei whadjuk subsp. nov*. is named in honour of the Whadjuk people, the original Aboriginal inhabitants of the region this taxon occurs. Most were exterminated by the British at the time they invaded, either directly or via introduced diseases such as smallpox.

The spelling and formation of the subspecies name is intentional and should be amended to add “orum” or similar.

KOMMOSAGOGUS GRANTTURNERI SP. NOV.

LSIDurn:lsid:zoobank.org:act:FCEB97F5-04EB-42E0-8928-49A24FCBFEE3

Holotype: A preserved juvenile specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R142949 collected from Bluff Knoll in the Stirling Ranges, Western Australia, Australia, Latitude -34.369722 S., Longitude 118.249722 E.

This government owned facility allows access to its holdings.

Paratypes: Ten preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R129043, R129048, R129049, R129050, R129051, R129052, R129053, R129054, R129055 and R129059 all collected from Bluff Knoll in the Stirling Ranges, Western Australia, Australia, Latitude -34.369722 S., Longitude 118.249722 E.

Diagnosis: Notwithstanding the formal recognition of several divergent species within the so-called “*Ctenotus labillardieri* (Duméril and Bibron, 1839) complex”, including the relatively recent paper of Kay and Keogh (2012), it has been clear for some time that the putative species within the south-west Australian genus *Kommosagogus* Wells and Wellington, 1984 as recognised herein still contain a number of taxonomically significant and unnamed forms.

This paper has formally named the obvious ones by:

1/ Dividing *K. labillardieri* five ways and with two additional subspecies, all beyond *K. labillardieri* being named for the first time;

2/ *K. catenifer* (Storr, 1974) is split three ways with *K. hickmani* Wells and Wellington, 1985 resurrected from synonymy and a new species, *K. rosswellingtoni sp. nov.* formally named;

3/ *K. gemmula* (Storr, 1974) is also split three ways, with the southern population formally named *K. wellsei sp. nov*..and the westernmost population from Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) on the eastern south coast of Western Australia formally named as *K. trevorhawkeswoodi sp. nov*..

Within putative *K. labillardieri* the following taxonomic actions are made.

1/ *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north;
2/ *K. pailsei sp. nov*. is the relevant taxon for the populations in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park.

In turn that population is divided into 3 subspecies;

3/ The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

4/ The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast;

5/ *K. grantturneri sp. nov*. is a taxon restricted to the Stirling Ranges in south-west Western Australia;

6/ *K. alexanderdudleyi sp. nov*. is the taxon found from about Hopetoun in the west and near Dalyup in the east along the coastal strip in southern Western Australia;

7/ *K. graysonoconnori sp. nov*. is the relevant taxon found in southern Western Australia from Cape Le Grand in the west along the coast to Cape Aird in the east in the near coastal area.

The five species and additional two subspecies, defined herein as “the complex”, are separated from one another with the following unique characters or combinations of them:
Nominate *C. labillardieri* was well-defined by Ford (1969) in what he defined as the population in the “northern Part of the Darling Range” and is in effect adopted herein as diagnostic for the taxon in terms of colouration with a few minor modifications in light of newly described taxa since his paper was published in 1969.

C. labillardieri has sharply defined markings on back and sides. Dorsum is a light bronze-brown colour. A narrow white sharp-edged line starts on the supraoculars (which themselves are whitish and with narrow dark bars) and runs dorsolaterally down to the tail where it becomes less distinct. Bordering on the dorsal side of this is a fine black line of similar sharpness and below, starting at the eye, is a broad jet-black band that is finely spotted with white and pale brown flecks at the anterior end of the body (only). This band is bounded below by a thin white mid-lateral line which commences below the eye, passes

through the ear and over the limbs to the tail. It is ragged edged compared to the dorsolateral white line which is not. Below this is a jagged and sometimes broken blackish line (thicker anteriorly on the body, thinner and likely to have breaks posteriorly on the body), which in turn is followed below by the ragged white edge of the ventrolateral border. Venter is white, except for the chin and throat which are white with small brown flecks on the scales.
There is no distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

The closely related species *Ctenotus ora* Kay and Keogh, 2012 from the south-west corner of Western Australia, is morphologically similar to the above species complex in particular *C. labillardieri*, but it is readily separated from that taxon and all others in the species complex by the fact that the back is silvery grey with minute black flecking, no white speckling on the flanks or on the dorsal black line and that the upper surface of the limbs are orange with small irregularly shaped markings that are not interconnected, (for further separation of this taxon from other similar species not in this species complex, see Kay and Keogh, 2012).

K. pailsei sp. nov. (of the nominate subspecies) is readily separated from the other subspecies and species in the complex by the unique combination of: A wide black stripe on the dorsum before the yellow-white dorsolateral line, in effect reducing the size of the brownish mid-dorsal zone. Both these black lines on the dorsum and the wide black upper band on the upper flanks have numerous scattered large well-defined and distinct yellow-white spots. There is a distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

K. pailsei menang subsp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: It is essentially similar to the nominate form of *K. pailsei sp. nov*., but separated from that taxon by having a generally more chocolate brown colouration on the dorsum; the large well-defined and distinct yellow-white spots on the black of the lateral parts of the dorsum form a well-defined single line and in some specimens are semi-distinct only; the white line of the mid-lower flank is well defined and raged edged top and bottom, versus not well defined on the lower edge in the nominate form of *K. pailsei sp. nov*..

Orange flecks or markings behind the eye, if present in *K. pailsei menang subsp. nov*., are not in the form of a distinct row of 7 orange spots.

K. pailsei whadjuk subsp. nov. is similar in most respects to *K. pailsei menang subsp. nov*., but separated from that taxon by the fact that the spotting on the black on the lateral edges of the dorsum and upper flanks is reduced in number, intensity and size of spots, with a lot of the tiny spots being dark yellowish and brown, rather than a bright white or light yellow as seen in *K. pailsei menang subsp. nov*..

In *K. pailsei whadjuk subsp. nov*. has the unique combination of the white line of the lower flank and black below more-or-less merge to become a matrix of mottling that is both barker and lighter, generally appearing a mottled or marbled colour, gradually fading as one moves towards the belly proper. In other words, there is no obvious jagged edged white line on the lower flank. There is a medium to large patch immediately behind the eye, but in no way does this form part of a row of spots running posteriorly along the side of the head.

K. grantturneri sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A distinctively ragged edged yellow-white dorsolateral line, made more so by breaks or near breaks and extensions consisting of dots joined to the main line on both the upper and lower edges. Tiny scattered white spots on the black of the upper flanks are reduced in size and number. The black lines at the lateral edge of the dorsum are reduced in size and almost wholly obscured by intrusions of brown on the vertebral side and white scale intrusions from the lateral edge side. Behind the eye, the colour is either dark and with at most one or two scattered tiny yellow spots, or alternatively dark and brown marbled, but again without any obvious row of spots.

K. alexanderdudleyi sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A thick, well-defined, and slightly jagged edged bold yellow dorsolateral line. The black on the dorsal side is expanded to form a well-defined black line. On the vertebral side edge there are light brown, yellow and white scales abutting the black, making the black lines even better defined.

On the black band of the upper flank, there are small and large yellow-white spots that are reasonably well spaced and more-or-less aligned along the middle of the band, rather than the edges. The 10-12 large spots are on centre and the smaller ones are off centre, usually lower only anteriorly and as upper and lower pairs at the posterior end of the flank. Below this black section there is a series of broken short lines or dashes (sometimes touching and at other times not), the anterior edge lower than the upper beneath which is black. The white lower boundary of the black is similar to and in parallel to the upper and this is the zone just where the belly meets. Within each wider part of the black, is a tiny white dot, giving this section of the flank the appearance of having a series of black with white centred ocelli. Behind the eye is jet black

with a series of 6-7 moderately large orange dots running to the ear in a single midline.

K. graysonoconnori sp. nov. is separated from the other species in the complex by the unique combination of the following: There is a very bold and distinctive dorsal and lateral pattern. The brown of the dorsum, running along the mid-section down the body is reduced in size, making the black of the sides of the dorsum wider. On some specimens at the vertebral line, the brown of the dorsum may tend to fragment leading the partial formation of a black mid-dorsal line. On the inner edge of the black dorsal lines there are no scales of lighter or different colour to the brown on top. While the white dorsolateral lines are complete and even edged, on each scale there is a white protrusion giving a slightly ragged appearance on close inspection.

The black line along the upper flank is reduced in thickness as compared to the other species in the complex, generally going only about halfway down the flank, rather than obviously more than half in all other species in the complex. Running along the middle of this black line is a series of 16-18 mainly medium yellow-white spots, evenly spaced and running along the midline only. A very small number of tiny yellow-white spots are on the black area as well, usually between some of the larger spots and occasionally randomly placed elsewhere.

Below the black of the upper flank, the white is in the form of a jagged edged, but boldly defined white line, similar in form at the lower edge, giving it the form of a tight zig-zag line. Below this is a similar white upper edge that forms the boundary to the white belly.

Behind the eye and between the ear may be none, or one to four small yellow dots in a line.

The preceding species are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov.* by the following unique combination of characters:

Obviously reddish legs that are heavily marked with black and further distinguishable from most morphologically similar taxa in south-west Australia by the white dorsolateral line that is effectively continuous (not a series of spots or dashes) and not any obvious speckled type of pattern.

In passing, I note that specimens of the species *K. hickmani* Wells and Wellington, 1985 have been since treated as being of either putative *K. labillardieri* or *K. catenifer* Storr, 1974.

K. hickmani is recognised herein as a separate species to both and is also allopatric to both.

K. hickmani is readily separated from *K. labillardieri* by the unique presence of a distinctively speckled appearance.

The dorsolateral white stripes may or may not be discontinuous. If discontinuous, it may be reduced to a series of white dashes.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming black specking towards the distal end.
K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. labillardieri is depicted in life in Wilson and Swan (2021) on page 279 at top left and online at:
https://www.inaturalist.org/observations/189541229

K. pailsei sp. nov. (of the nominate subspecies) is depicted in life online at:
https://www.inaturalist.org/observations/64036697

and

https://www.inaturalist.org/observations/189650296

and

https://www.inaturalist.org/observations/64036691

and

https://www.inaturalist.org/observations/170819053

K. pailsei menang subsp. nov. is depicted in life in Wilson and Swan (2021) on page 279 top right, Cogger (2014) on page 504 top left and online at:

https://www.inaturalist.org/observations/156506659

and

https://www.inaturalist.org/observations/903209

and

https://www.inaturalist.org/observations/169932677

and

https://www.inaturalist.org/observations/185723885

K. pailsei whadjuk subsp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/188369673

and

https://www.inaturalist.org/observations/195882908

K. grantturneri sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/51903990

and

https://www.inaturalist.org/observations/139432357

and

https://www.inaturalist.org/observations/179390

and

https://www.inaturalist.org/observations/47082653

K. alexanderdudleyi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/145471553

and

https://www.inaturalist.org/observations/48740005

K. graysonoconnori sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/176228

and

https://www.inaturalist.org/observations/46121694

and

https://www.inaturalist.org/observations/104340376

Distribution: *K. grantturneri sp. nov*. is a taxon restricted to the Stirling Ranges in south-west Western Australia, Australia.

Fortunately, the area is a national park, so the species, while range-restricted, is probably secure.

Etymology: The taxon *K. grantturneri sp. nov*. is named in honour of the Grant Turner, a herpetologist originally from Bundoora, (Melbourne), Victoria, Australia, but more recently of Innisfail, Queensland, Australia for significant contributions to herpetology in Australia, especially with respect of smaller and often overlooked species.

KOMMOSAGOGUS ALEXANDERDUDLEYI SP. NOV.

LSIDurn:lsid:zoobank.org:act:8E048AF1-664A-4E6F-ADA7-BC2F476634DD

Holotype: A preserved adult male specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R134073 collected at East Mount Barren, Western Australia, Australia, Latitude -33.923056 S., Longitude 120.030278 E.

This government owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R129661 and R129662 both collected from Quagi Beach, Western Australia, Australia, Latitude -33.833333 S., Longitude 121.283333 E.

Diagnosis: Notwithstanding the formal recognition of several divergent species within the so-called "*Ctenotus labillardieri* (Duméril and Bibron, 1839) complex", including the relatively recent paper of Kay and Keogh (2012), it has been clear for some time that the putative species within the south-west Australian genus *Kommosagogus* Wells and Wellington, 1984 as recognised herein still contain a number of taxonomically significant and unnamed forms.

This paper has formally named the obvious ones by:

1/ Dividing *K. labillardieri* five ways and with two additional subspecies, all beyond *K. labillardieri* being named for the first time;

2/ *K. catenifer* (Storr, 1974) is split three ways with *K. hickmani* Wells and Wellington, 1985 resurrected from synonymy and a new species, *K. rosswellingtoni sp. nov.* formally named;

3/ *K. gemmula* (Storr, 1974) is also split three ways, with the southern population formally named *K. wellsei sp. nov*..and the westernmost population from Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) on the eastern south coast of Western Australia formally named as *K. trevorhawkeswoodi sp. nov*..

Within putative *K. labillardieri* the following taxonomic actions are made.

1/ *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north;
2/ *K. pailsei sp. nov*. is the relevant taxon for the populations in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park.

In turn that population is divided into 3 subspecies;

3/ The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

4/ The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast;

5/ *K. grantturneri sp. nov*. is a taxon restricted to the Stirling Ranges in south-west Western Australia;

6/ *K. alexanderdudleyi sp. nov*. is the taxon found from about Hopetoun in the west and near Dalyup in the east along the coastal strip in southern Western Australia;

7/ *K. graysonoconnori sp. nov*. is the relevant taxon found in southern Western Australia from Cape Le

Grand in the west along the coast to Cape Aird in the east in the near coastal area.

The five species and additional two subspecies, defined herein as "the complex", are separated from one another with the following unique characters or combinations of them:
Nominate *C. labillardieri* was well-defined by Ford (1969) in what he defined as the population in the "northern Part of the Darling Range" and is in effect adopted herein as diagnostic for the taxon in terms of colouration with a few minor modifications in light of newly described taxa since his paper was published in 1969.

C. labillardieri has sharply defined markings on back and sides. Dorsum is a light bronze-brown colour. A narrow white sharp-edged line starts on the supraoculars (which themselves are whitish and with narrow dark bars) and runs dorsolaterally down to the tail where it becomes less distinct. Bordering on the dorsal side of this is a fine black line of similar sharpness and below, starting at the eye, is a broad jet-black band that is finely spotted with white and pale brown flecks at the anterior end of the body (only). This band is bounded below by a thin white mid-lateral line which commences below the eye, passes through the ear and over the limbs to the tail. It is ragged edged compared to the dorsolateral white line which is not. Below this is a jagged and sometimes broken blackish line (thicker anteriorly on the body, thinner and likely to have breaks posteriorly on the body), which in turn is followed below by the ragged white edge of the ventrolateral border. Venter is white, except for the chin and throat which are white with small brown flecks on the scales.
There is no distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

The closely related species *Ctenotus ora* Kay and Keogh, 2012 from the south-west corner of Western Australia, is morphologically similar to the above species complex in particular *C. labillardieri*, but it is readily separated from that taxon and all others in the species complex by the fact that the back is silvery grey with minute black flecking, no white speckling on the flanks or on the dorsal black line and that the upper surface of the limbs are orange with small irregularly shaped markings that are not interconnected, (for further separation of this taxon from other similar species not in this species complex, see Kay and Keogh, 2012).

K. pailsei sp. nov. (of the nominate subspecies) is readily separated from the other subspecies and species in the complex by the unique combination of: A wide black stripe on the dorsum before the yellow-white dorsolateral line, in effect reducing the size of the brownish mid-dorsal zone. Both these black lines on the dorsum and the wide black upper band on the upper flanks have numerous scattered large well-defined and distinct yellow-white spots. There is a distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

K. pailsei menang subsp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: It is essentially similar to the nominate form of *K. pailsei sp. nov*., but separated from that taxon by having a generally more chocolate brown colouration on the dorsum; the large well-defined and distinct yellow-white spots on the black of the lateral parts of the dorsum form a well-defined single line and in some specimens are semi-distinct only; the white line of the mid-lower flank is well defined and raged edged top and bottom, versus not well defined on the lower edge in the nominate form of *K. pailsei sp. nov*..

Orange flecks or markings behind the eye, if present in *K. pailsei menang subsp. nov*., are not in the form of a distinct row of 7 orange spots.

K. pailsei whadjuk subsp. nov. is similar in most respects to *K. pailsei menang subsp. nov*., but separated from that taxon by the fact that the spotting on the black on the lateral edges of the dorsum and upper flanks is reduced in number, intensity and size of spots, with a lot of the tiny spots being dark yellowish and brown, rather than a bright white or light yellow as seen in *K. pailsei menang subsp. nov*..

In *K. pailsei whadjuk subsp. nov*. has the unique combination of the white line of the lower flank and black below more-or-less merge to become a matrix of mottling that is both barker and lighter, generally appearing a mottled or marbled colour, gradually fading as one moves towards the belly proper. In other words, there is no obvious jagged edged white line on the lower flank. There is a medium to large patch immediately behind the eye, but in no way does this form part of a row of spots running posteriorly along the side of the head.

K. grantturneri sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A distinctively ragged edged yellow-white dorsolateral line, made more so by breaks or near breaks and extensions consisting of dots joined to the main line on both the upper and lower edges. Tiny scattered white spots on the black of the upper flanks are reduced in size and number. The black lines at the lateral edge of the dorsum are reduced in size and almost wholly obscured by intrusions of brown on the vertebral side and white scale intrusions from the lateral edge side. Behind the eye, the colour is either dark and with at most one or two scattered tiny yellow spots, or alternatively dark and brown marbled, but again without any obvious row

of spots.

K. alexanderdudleyi sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A thick, well-defined, and slightly jagged edged bold yellow dorsolateral line. The black on the dorsal side is expanded to form a well-defined black line. On the vertebral side edge there are light brown, yellow and white scales abutting the black, making the black lines even better defined.

On the black band of the upper flank, there are small and large yellow-white spots that are reasonably well spaced and more-or-less aligned along the middle of the band, rather than the edges. The 10-12 large spots are on centre and the smaller ones are off centre, usually lower only anteriorly and as upper and lower pairs at the posterior end of the flank. Below this black section there is a series of broken short lines or dashes (sometimes touching and at other times not), the anterior edge lower than the upper beneath which is black. The white lower boundary of the black is similar to and in parallel to the upper and this is the zone just where the belly meets. Within each wider part of the black, is a tiny white dot, giving this section of the flank the appearance of having a series of black with white centred ocelli. Behind the eye is jet black with a series of 6-7 moderately large orange dots running to the ear in a single midline.

K. graysonoconnori sp. nov. is separated from the other species in the complex by the unique combination of the following: There is a very bold and distinctive dorsal and lateral pattern. The brown of the dorsum, running along the mid-section down the body is reduced in size, making the black of the sides of the dorsum wider. On some specimens at the vertebral line, the brown of the dorsum may tend to fragment leading the partial formation of a black mid-dorsal line. On the inner edge of the black dorsal lines there are no scales of lighter or different colour to the brown on top. While the white dorsolateral lines are complete and even edged, on each scale there is a white protrusion giving a slightly ragged appearance on close inspection.

The black line along the upper flank is reduced in thickness as compared to the other species in the complex, generally going only about halfway down the flank, rather than obviously more than half in all other species in the complex. Running along the middle of this black line is a series of 16-18 mainly medium yellow-white spots, evenly spaced and running along the midline only. A very small number of tiny yellow-white spots are on the black area as well, usually between some of the larger spots and occasionally randomly placed elsewhere.

Below the black of the upper flank, the white is in the form of a jagged edged, but boldly defined white line, similar in form at the lower edge, giving it the form of a tight zig-zag line. Below this is a similar white upper edge that forms the boundary to the white belly.

Behind the eye and between the ear may be none, or one to four small yellow dots in a line.

The preceding species are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov.* by the following unique combination of characters:

Obviously reddish legs that are heavily marked with black and further distinguishable from most morphologically similar taxa in south-west Australia by the white dorsolateral line that is effectively continuous (not a series of spots or dashes) and not any obvious speckled type of pattern.

In passing, I note that specimens of the species *K. hickmani* Wells and Wellington, 1985 have been since treated as being of either putative *K. labillardieri* or *K. catenifer* Storr, 1974.

K. hickmani is recognised herein as a separate species to both and is also allopatric to both.

K. hickmani is readily separated from *K. labillardieri* by the unique presence of a distinctively speckled appearance.

The dorsolateral white stripes may or may not be discontinuous. If discontinuous, it may be reduced to a series of white dashes.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming

black specking towards the distal end.
K. hickmani is depicted in life online at:
https://www.flickr.com/photos/brian_busho/14505416091/
K. labillardieri is depicted in life in Wilson and Swan (2021) on page 279 at top left and online at:
https://www.inaturalist.org/observations/189541229
K. pailsei sp. nov. (of the nominate subspecies) is depicted in life online at:
https://www.inaturalist.org/observations/64036697
and
https://www.inaturalist.org/observations/189650296
and
https://www.inaturalist.org/observations/64036691
and
https://www.inaturalist.org/observations/170819053
K. pailsei menang subsp. nov. is depicted in life in Wilson and Swan (2021) on page 279 top right, Cogger (2014) on page 504 top left and online at:
https://www.inaturalist.org/observations/156506659
and
https://www.inaturalist.org/observations/903209
and
https://www.inaturalist.org/observations/169932677
and
https://www.inaturalist.org/observations/185723885
K. pailsei whadjuk subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/188369673
and
https://www.inaturalist.org/observations/195882908
K. grantturneri sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/51903990
and
https://www.inaturalist.org/observations/139432357
and
https://www.inaturalist.org/observations/179390
and
https://www.inaturalist.org/observations/47082653
K. alexanderdudleyi sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/145471553
and
https://www.inaturalist.org/observations/48740005
K. graysonoconnori sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/176228
and
https://www.inaturalist.org/observations/46121694
and
https://www.inaturalist.org/observations/104340376

Distribution: *K. alexanderdudleyi sp. nov*. is a taxon restricted to the area between about Hopetoun in the west and near Dalyup in the east along the coastal strip in southern Western Australia, Australia.

It is range-restricted and may be potentially vulnerable if remaining areas of natural habitat in the area are not actively conserved.

Etymology: The taxon *K. alexanderdudleyi sp. nov*. is named in honour of the Alexander (Alex) Dudley, originally of Kenthurst, New South Wales, Australia, but having spent considerable time at various locations across mainland Australia and Tasmania over some decades, in recognition of a lifetime's valuable contributions to herpetology in Australia.

KOMMOSAGOGUS GRAYSONOCONNORI SP. NOV.

LSIDurn:lsid:zoobank.org:act:509F15EC-6093-4011-863C-1560659EE01B

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R131926 collected from 2.2 km north of Mount LeGrand, Western Australia, Australia, Latitude -33.972222 S., Longitude 122.129167 E.

This government owned facility allows access to its holdings.

Paratypes: Six preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, being 1/ Specimen numbers R131903 and R131905 both collected from 2 km north west of Mount LeGrand, Western Australia, Australia, Latitude -33.972222 S., Longitude 122.119444 E., 2/ Specimen numbers R131924 and R131925 both collected from 10.5 km east of Merivale, Western Australia, Australia, Latitude -33.816667 S., Longitude 122.213889 E., 3/ Specimen numbers R131916 and R131919 both collected from Mount Belches, Western Australia, Australia, Latitude -33.947222 S., Longitude 122.566667 E.

Diagnosis: Notwithstanding the formal recognition of several divergent species within the so-called "*Ctenotus labillardieri* (Duméril and Bibron, 1839) complex", including the relatively recent paper of Kay and Keogh (2012), it has been clear for some time that the putative species within the south-west Australian genus *Kommosagogus* Wells and Wellington, 1984 as recognised herein still contain a number of taxonomically significant and unnamed forms.

This paper has formally named the obvious ones by:

1/ Dividing *K. labillardieri* five ways and with two additional subspecies, all beyond *K. labillardieri* being named for the first time;

2/ *K. catenifer* (Storr, 1974) is split three ways with *K. hickmani* Wells and Wellington, 1985 resurrected from synonymy and a new species, *K. rosswellingtoni sp. nov.* formally named;

3/ *K. gemmula* (Storr, 1974) is also split three ways, with the southern population formally named *K. wellsei*

sp. nov..and the westernmost population from Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) on the eastern south coast of Western Australia formally named as *K. trevorhawkeswoodi sp. nov*..

Within putative *K. labillardieri* the following taxonomic actions are made.

1/ *K. labillardieri* is herein restricted the Darling Range east of Perth and including the area slightly north;
2/ *K. pailsei sp. nov*. is the relevant taxon for the populations in the southern Darling Range area, extending generally near the coast through the far south-west, through Denmark, Albany, Bremer Bay and to the Fitzgerald National Park.

In turn that population is divided into 3 subspecies;

3/ The second of these subspecies is *K. pailsei menang subsp. nov*. from Cheynes in the east to about Windy Harbour and hinterland in the west;

4/ The third of these subspecies is *K. pailsei whadjuk subsp. nov.* for the population found from the lower Darling Ranges to the far south-west corner of Western Australia, including the nearby hinterland.

This means that the first and nominate subspecies of *K. pailsei pailsei subsp. nov*. is restricted to the general region bound by the line of West Mount Barren in the south and Fitzgerald in the north (both in Western Australia) near the mid-south coast;

5/ *K. grantturneri sp. nov*. is a taxon restricted to the Stirling Ranges in south-west Western Australia;

6/ *K. alexanderdudleyi sp. nov*. is the taxon found from about Hopetoun in the west and near Dalyup in the east along the coastal strip in southern Western Australia;

7/ *K. graysonoconnori sp. nov*. is the relevant taxon found in southern Western Australia from Cape Le Grand in the west along the coast to Cape Aird in the east in the near coastal area.

The five species and additional two subspecies, defined herein as “the complex”, are separated from one another with the following unique characters or combinations of them:
Nominate *C. labillardieri* was well-defined by Ford (1969) in what he defined as the population in the “northern Part of the Darling Range” and is in effect adopted herein as diagnostic for the taxon in terms of colouration with a few minor modifications in light of newly described taxa since his paper was published in 1969.

C. labillardieri has sharply defined markings on back and sides. Dorsum is a light bronze-brown colour. A narrow white sharp-edged line starts on the supraoculars (which themselves are whitish and with narrow dark bars) and runs dorsolaterally down to the tail where it becomes less distinct. Bordering on the dorsal side of this is a fine black line of similar sharpness and below, starting at the eye, is a broad jet-black band that is finely spotted with white and pale brown flecks at the anterior end of the body (only). This band is bounded below by a thin white mid-lateral line which commences below the eye, passes through the ear and over the limbs to the tail. It is ragged edged compared to the dorsolateral white line which is not. Below this is a jagged and sometimes broken blackish line (thicker anteriorly on the body, thinner and likely to have breaks posteriorly on the body), which in turn is followed below by the ragged white edge of the ventrolateral border. Venter is white, except for the chin and throat which are white with small brown flecks on the scales.
There is no distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

The closely related species *Ctenotus ora* Kay and Keogh, 2012 from the south-west corner of Western Australia, is morphologically similar to the above species complex in particular *C. labillardieri*, but it is readily separated from that taxon and all others in the species complex by the fact that the back is silvery grey with minute black flecking, no white speckling on the flanks or on the dorsal black line and that the upper surface of the limbs are orange with small irregularly shaped markings that are not interconnected, (for further separation of this taxon from other similar species not in this species complex, see Kay and Keogh, 2012).

K. pailsei sp. nov. (of the nominate subspecies) is readily separated from the other subspecies and species in the complex by the unique combination of: A wide black stripe on the dorsum before the yellow-white dorsolateral line, in effect reducing the size of the brownish mid-dorsal zone. Both these black lines on the dorsum and the wide black upper band on the upper flanks have numerous scattered large well-defined and distinct yellow-white spots. There is a distinct row of about 7 yellow-orange spots running from the middle of the eye across the rear side of the head (directly backwards from the eye), this being between the white lines emanating from the upper and lower eye that form the dorsolateral and lower lateral white lines.

K. pailsei menang subsp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: It is essentially similar to the nominate form of *K. pailsei sp. nov*., but separated from that taxon by having a generally more chocolate brown colouration on the dorsum; the large well-defined and distinct yellow-white spots on the black of the lateral parts of the dorsum form a well-defined single line and in some specimens are semi-distinct only; the white line of the mid-lower flank is well defined and raged edged top and bottom, versus not well defined on the lower edge in the nominate form of *K. pailsei sp. nov*..

Orange flecks or markings behind the eye, if present in

K. pailsei menang subsp. nov., are not in the form of a distinct row of 7 orange spots.

K. pailsei whadjuk subsp. nov. is similar in most respects to *K. pailsei menang subsp. nov*., but separated from that taxon by the fact that the spotting on the black on the lateral edges of the dorsum and upper flanks is reduced in number, intensity and size of spots, with a lot of the tiny spots being dark yellowish and brown, rather than a bright white or light yellow as seen in *K. pailsei menang subsp. nov*..

In *K. pailsei whadjuk subsp. nov*. has the unique combination of the white line of the lower flank and black below more-or-less merge to become a matrix of mottling that is both barker and lighter, generally appearing a mottled or marbled colour, gradually fading as one moves towards the belly proper. In other words, there is no obvious jagged edged white line on the lower flank. There is a medium to large patch immediately behind the eye, but in no way does this form part of a row of spots running posteriorly along the side of the head.

K. grantturneri sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A distinctively ragged edged yellow-white dorsolateral line, made more so by breaks or near breaks and extensions consisting of dots joined to the main line on both the upper and lower edges. Tiny scattered white spots on the black of the upper flanks are reduced in size and number. The black lines at the lateral edge of the dorsum are reduced in size and almost wholly obscured by intrusions of brown on the vertebral side and white scale intrusions from the lateral edge side. Behind the eye, the colour is either dark and with at most one or two scattered tiny yellow spots, or alternatively dark and brown marbled, but again without any obvious row of spots.

K. alexanderdudleyi sp. nov. is readily separated from the other subspecies and species in the complex by the unique combination of: A thick, well-defined, and slightly jagged edged bold yellow dorsolateral line. The black on the dorsal side is expanded to form a well-defined black line. On the vertebral side edge there are light brown, yellow and white scales abutting the black, making the black lines even better defined.

On the black band of the upper flank, there are small and large yellow-white spots that are reasonably well spaced and more-or-less aligned along the middle of the band, rather than the edges. The 10-12 large spots are on centre, and the smaller ones are off centre, usually lower only anteriorly and as upper and lower pairs at the posterior end of the flank. Below this black section there is a series of broken short lines or dashes (sometimes touching and at other times not), the anterior edge lower than the upper beneath which is black. The white lower boundary of the black is similar to and in parallel to the upper and this is the zone just where the belly meets. Within each wider part of the black, is a tiny white dot, giving this section of the flank the appearance of having a series of black with white centred ocelli. Behind the eye is jet black with a series of 6-7 moderately large orange dots running to the ear in a single midline.

K. graysonoconnori sp. nov. is separated from the other species in the complex by the unique combination of the following: There is a very bold and distinctive dorsal and lateral pattern. The brown of the dorsum, running along the mid-section down the body is reduced in size, making the black of the sides of the dorsum wider. On some specimens at the vertebral line, the brown of the dorsum may tend to fragment leading the partial formation of a black mid-dorsal line. On the inner edge of the black dorsal lines there are no scales of lighter or different colour to the brown on top. While the white dorsolateral lines are complete and even edged, on each scale there is a white protrusion giving a slightly ragged appearance on close inspection.

The black line along the upper flank is reduced in thickness as compared to the other species in the complex, generally going only about halfway down the flank, rather than obviously more than half in all other species in the complex. Running along the middle of this black line is a series of 16-18 mainly medium yellow-white spots, evenly spaced and running along the midline only. A very small number of tiny yellow-white spots are on the black area as well, usually between some of the larger spots and occasionally randomly placed elsewhere.

Below the black of the upper flank, the white is in the form of a jagged edged, but boldly defined white line, similar in form at the lower edge, giving it the form of a tight zig-zag line. Below this is a similar white upper edge that forms the boundary to the white belly.

Behind the eye and between the ear may be none, or one to four small yellow dots in a line.

The preceding species are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Obviously reddish legs that are heavily marked with black and further distinguishable from most morphologically similar taxa in south-west Australia by the white dorsolateral line that is effectively continuous (not a series of spots or dashes) and not any obvious speckled type of pattern.

In passing, I note that specimens of the species *K. hickmani* Wells and Wellington, 1985 have been since

treated as being of either putative *K. labillardieri* or *K. catenifer* Storr, 1974.

K. hickmani is recognised herein as a separate species to both and is also allopatric to both.

K. hickmani is readily separated from *K. labillardieri* by the unique presence of a distinctively speckled appearance.

The dorsolateral white stripes may or may not be discontinuous. If discontinuous, it may be reduced to a series of white dashes.

K. hickmani is readily separated from both *K. labillardieri* or *K. catenifer* by the following combination of characteristics:

The black on the lateral edge of the dorsum and that of the flank is expanded in area. Both are heavily speckled with dull semi-defined whitish, yellowish, or brownish spots that are small to tiny in size. These are usually brown on the dorsum and yellowish white on the flank, the colour difference between the colour of these spots being obvious when compared. The white line on the lower flank is relatively straight edged but not wholly so, but usually is unbroken, thin and well-defined, although in some other specimens it is poorly defined with respect of the area of the lower flank. Below this line, or where it would otherwise be, one finds on the lower flank that the pattern is a patchwork of black and white, with white specks or tiny white spots inside black areas large enough to fit them and remain obviously black on all sides. The back of the head behind the eyes, invariably has grey specks or grey marks on the otherwise brown surface (versus blackish brown with white or yellow spots in *C. catenifer*).

The upper surface of the (original) tail is in overall appearance a light greyish brown with a speckled appearance. This is created by black intrusions from a black midline on the anterior part of the tail, becoming black specking towards the distal end.

K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. labillardieri is depicted in life in Wilson and Swan (2021) on page 279 at top left and online at:
https://www.inaturalist.org/observations/189541229

K. pailsei sp. nov. (of the nominate subspecies) is depicted in life online at:
https://www.inaturalist.org/observations/64036697
and
https://www.inaturalist.org/observations/189650296
and
https://www.inaturalist.org/observations/64036691
and
https://www.inaturalist.org/observations/170819053

K. pailsei menang subsp. nov. is depicted in life in Wilson and Swan (2021) on page 279 top right, Cogger (2014) on page 504 top left and online at:
https://www.inaturalist.org/observations/156506659
and
https://www.inaturalist.org/observations/903209
and
https://www.inaturalist.org/observations/169932677
and
https://www.inaturalist.org/observations/185723885

K. pailsei whadjuk subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/188369673
and
https://www.inaturalist.org/observations/195882908

K. grantturneri sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/51903990
and
https://www.inaturalist.org/observations/139432357
and
https://www.inaturalist.org/observations/179390
and
https://www.inaturalist.org/observations/47082653

K. alexanderdudleyi sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/145471553
and
https://www.inaturalist.org/observations/48740005

K. graysonoconnori sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/176228
and
https://www.inaturalist.org/observations/46121694
and
https://www.inaturalist.org/observations/104340376

Distribution: *K. graysonoconnori sp. nov*. is a taxon restricted to the coastal strip area between from Cape Le Grand in the west along the coast to Cape Aird in the east in the near coastal area of southern Western Australia, including nearby offshore islands.

It is relatively range-restricted and may be potentially vulnerable if remaining areas of natural habitat in the area are not actively conserved.

Etymology: The taxon *K. graysonoconnori sp. nov*. is named in honour of Grayson O'Connor of Box Hill North, Victoria, Australia in recognition of logistical services aiding the wildlife conservation work of Snakebusters: Australia's best reptiles with various research and conservation collaborators.

KOMMOSAGOGUS ROSSWELLINGTONI SP. NOV.

LSIDurn:lsid:zoobank.org:act:BE2CC4E6-6712-41C1-AE4F-20E553F452F0

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R121359 collected from 6 km north-west of Dunsborough, Western Australia,

Australia, Latitude -33.55 S., Longitude 115.05 E.

This government owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R129077 and R129085 both collected from Lake Jasper, Western Australia, Australia, Latitude -34.416667 S., Longitude 115.683333 E., and 2/ Three preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R103262, R103263 and R115261 all collected from the Scott River National Park, Western Australia, Australia, Latitude -34.266667 S., Longitude 115.216667 E.

Diagnosis: The putative south-west Australian species "*Ctenotus catenifer* Storr (1974)", herein placed in the genus *Kommosagogus* Wells and Wellington, 1984, occurs in four geographically disjunct populations.

Based on molecular and morphological evidence each population is herein formally recognized as a separate species.

The nominate form of *K. catenifer* with a type locality of Cheyne Beach, Western Australia (Latitude 34.52 S., Longitude 118.34 E.) occurs on and near to the far south-west Australian coast between Mount Chudalup (Latitude -34.766667 S., Longitude 116.083333 E.) in the west and Cheyne Beach, Western Australia (Latitude 34.52 S., Longitude 118.34 E.) in the east.

K. hickmani Wells and Wellington is found west of this area in an area on and near the coast bounded by Ravensthorpe (Latitude 33.5817 S., Longitude 120.0471 E.) in the west and Cape Arid National Park (Latitude -33.825833 S., Longitude 122.973611 E.) in the east.

K. rosswellingtoni sp. nov. is confined to a region in the far south-west of Western Australia also on or near the coast between Scott River National Park, (Latitude -34.266667 S., Longitude 115.216667 E) in the south and 6 km north-west of Dunsborough (Latitude -33.55 S., Longitude 115.05 E) in the northwest and Brusselton (Latitude -33.716667 S., Longitude 115.333333 E.) in the northeast.

K. goreng sp. nov., is the geographically isolated Stirling Range population, distributionally proximal to

K. catenifer found at its closest about 50 km south or south-east in a straight line (between populations).

The four species are separated from one another by the following unique characters or character suites:

K. catenifer has a broken white line or no obvious white line (being an alternation of black and white patches) on the lower flank.

K. hickmani has an even white upper edge of white on the lower flank, but not a white line as such (as it is not bordered black or any other colour below), the only point of note is that white spots on the black above do also intrude the white line from above, but these are also thinly bordered with black between where they contact the lower white barrier.

Relatively indistinct greyish black markings on the lower flanks continue onto the venter.

K. rosswellingtoni sp. nov. is very different in colouration to the two preceding taxa in that the dorsolateral line has no large or medium white spots. It merely has a poorly defined row of spots (alternating in series as one larger, two smaller, one larger, two smaller and so on along either side) that are much the same size as those on the flanks proper, which also only has small spots (being of two size classes again). There are no large or medium spots. The mid dorsum is without an obvious vertebral line colour of orange brown, but rather the dorsum as a whole appears brownish in colour, being formed by brown scales combined with alternating scales that are largely black in their centres. In common with *K. goreng sp. nov*. and in contrast to *K. catenifer* and *K. hickmani*, the upper surfaces of the limbs in *K. rosswellingtoni sp. nov.* are dark brown with scattered tiny white spots or tiny grey spots, versus not so in the other two species where the surfaces are a combination of darker and lighter, but not darker with spots.

The lower flanks are more heavily light spotted than the upper parts, but there is no obvious white line, dashed white line or similar separating the upper from lower flank.

K. goreng sp. nov. is mainly brownish on the dorsum, but with more thin black etching of dorsal scales rather than black patches on the scales, although small black patches are present on some dorsal scales.

The yellowish dorsolateral line is broken and the lighter parts of the edge is more brownish than yellow or white, making it relatively indistinct, although towards the rear of the body it does become lighter and more well-defined. The black band of the upper flank is not well defined because of the badly defined upper edge, in that the black is also between the lighter parts of the dashed dorsolateral line and the scales immediately proximal on the dorsum are also black or black becoming brown.

The lower edge of the black of the flank is similarly ill-defined, in this case being a series of triangular intrusions into the white scales below. Those scales are heavily peppered black and so appear greyish as well.

The black of the upper flank is spotted and speckled further obscuring its prominence, these being mainly small to medium sized spots in a single line anterior to the front leg and including also the first half of the body. On the posterior half of the body, the yellow spots are only tiny and form in two longitudinal rows.

Unlike the other three species (*K. catenifer*, *K. hickmani* and *K. rosswellingtoni sp. nov.*), the sides of the head behind the eye in *K. goreng sp. nov*. has a unique combination of the scales being black but with bright and well defined yellow white medium sized spots in the centre of each scale. These scales being

the larger ones behind the eye and anterior to the ear. The original tail is beige with dense black specks generally along each lateral line (this trait being shared with *K. hickmani* and not the other two species).

K. catenifer has a brown tail and yellow with bold black markings, while *K. rosswellingtoni sp. nov.* has a dull brown tail with usually indistinct darker markings on both dorsal and lateral lines.

The four preceding species, being *K. catenifer*, *K. hickmani*, *K. rosswellingtoni sp. nov.* and *K. goreng sp. nov*. are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov.* by the following unique combination of characters:

Legs olive brown (not red) and with either a combination of dark and light markings or bars, or alternatively unicolour with tiny flecks, a broken dorsolateral line, which may be reduced to rows of white scales where some but not all are joined together, creating a broken line. There is no obvious white midlateral stripe that is bordered dark below.

Nasals separated. Prefrontals separated, usually widely. 4 supraoculars, first 2 in contact with the frontal. 6-8 supraciliaries; 8-10 palpebrals; a second loreal being 1 to 1.4 times as wide as high. 7, rarely 8 upper labials; 3-6, usually four ear lobules which are acute or subacute in adults and obtuse in juveniles, with the first or second usually largest; 3 or 4 nuchals; 24-30 midbody rows; 21-25 lamellae under the fourth toes and each with a dark obtuse keel or narrow callus (modified from Storr, 1973).

K. catenifer is depicted in life in Wilson and Swan (2021) on page 263 bottom and online at:

https://www.flickr.com/photos/mattsummerville/46141383841/

and

https://www.flickr.com/photos/133082406@N06/19978980688/

K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. rosswellingtoni sp. nov. is depicted in life online at:

https://www.flickr.com/photos/crafers/2904663428/

K. goreng sp. nov. is depicted in life in Cogger (2014) on page 490 at bottom left.

Distribution: *K. rosswellingtoni sp. nov.* is confined to a region in the far south-west of Western Australia also on or near the coast between Scott River National Park, (Latitude -34.266667 S., Longitude 115.216667 E) in the south and 6 km north-west of Dunsborough (Latitude -33.55 S., Longitude 115.05 E) in the northwest and Brusselton (Latitude -33.716667 S., Longitude 115.333333 E.) in the northeast.

Etymology: *K. rosswellingtoni sp. nov.* is named in honour of Cliff Ross Wellington currently of Ramornie in New South Wales, Australia in recognition of his many critically important contributions to herpetology in Australia and internationally spanning some decades.

KOMMOSAGOGUS GORENG SP. NOV.

LSIDurn:lsid:zoobank.org:act:E8CC8FEC-2B2B-4B71-8228-E2A348999AE9

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R91083 collected from 2.5 km south of Toll Peak, Stirling Ranges, Western Australia, Australia, Latitude -34.383333 S., Longitude 118.116667 E.

This government owned facility allows access to its holdings.

Paratypes: Four preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R91055, R91082, R91084 and R91085 collected 4 km east southeast of Toolbrunup Peak, Western Australia, Australia, Latitude -34.416667 S., Longitude 118.016667 E.

Diagnosis: The putative south-west Australian species "*Ctenotus catenifer* Storr (1974)", herein placed in the genus *Kommosagogus* Wells and Wellington, 1984, occurs in four geographically disjunct populations.

Based on molecular and morphological evidence each population is herein formally recognized as a separate species.

The nominate form of *K. catenifer* with a type locality of Cheyne Beach, Western Australia (Latitude 34.52 S., Longitude 118.34 E.) occurs on and near to the far south-west Australian coast between Mount Chudalup (Latitude -34.766667 S., Longitude 116.083333 E.) in the west and Cheyne Beach, Western Australia (Latitude 34.52 S., Longitude 118.34 E.) in the east.

K. hickmani Wells and Wellington is found west of this area in an area on and near the coast bounded by Ravensthorpe (Latitude 33.5817 S., Longitude 120.0471 E.) in the west and Cape Arid National Park (Latitude -33.825833 S., Longitude 122.973611 E.) in the east.

K. rosswellingtoni sp. nov. is confined to a region in the far south-west of Western Australia also on or near the coast between Scott River National Park, (Latitude -34.266667 S., Longitude 115.216667 E) in the south and 6 km north-west of Dunsborough (Latitude -33.55 S., Longitude 115.05 E) in the northwest and Brusselton (Latitude -33.716667 S., Longitude 115.333333 E.) in the northeast.

K. goreng sp. nov., is the geographically isolated Stirling Range population, distributionally proximal to *K. catenifer* found at its closest about 50 km south or

south-east in a straight line (between populations).

The four species are separated from one another by the following unique characters or character suites:

K. catenifer has a broken white line or no obvious white line (being an alternation of black and white patches) on the lower flank.

K. hickmani has an even white upper edge of white on the lower flank, but not a white line as such (as it is not bordered black or any other colour below), the only point of note is that white spots on the black above do also intrude the white line from above, but these are also thinly bordered with black between where they contact the lower white barrier.

Relatively indistinct greyish black markings on the lower flanks continue onto the venter.

K. rosswellingtoni sp. nov. is very different in colouration to the two preceding taxa in that the dorsolateral line has no large or medium white spots. It merely has a poorly defined row of spots (alternating in series as one larger, two smaller, one larger, two smaller and so on along either side) that are much the same size as those on the flanks proper, which also only has small spots (being of two size classes again). There are no large or medium spots. The mid dorsum is without an obvious vertebral line colour of orange brown, but rather the dorsum as a whole appears brownish in colour, being formed by brown scales combined with alternating scales that are largely black in their centres. In common with *K. goreng sp. nov*. and in contrast to *K. catenifer* and *K. hickmani*, the upper surfaces of the limbs in *K. rosswellingtoni sp. nov.* are dark brown with scattered tiny white spots or tiny grey spots, versus not so in the other two species where the surfaces are a combination of darker and lighter, but not darker with spots.

The lower flanks are more heavily light spotted than the upper parts, but there is no obvious white line, dashed white line or similar separating the upper from lower flank.

K. goreng sp. nov. is mainly brownish on the dorsum, but with more thin black etching of dorsal scales rather than black patches on the scales, although small black patches are present on some dorsal scales.

The yellowish dorsolateral line is broken and the lighter parts of the edge is more brownish than yellow or white, making it relatively indistinct, although towards the rear of the body it does become lighter and more well-defined. The black band of the upper flank is not well defined because of the badly defined upper edge, in that the black is also between the lighter parts of the dashed dorsolateral line and the scales immediately proximal on the dorsum are also black or black becoming brown.

The lower edge of the black of the flank is similarly ill-defined, in this case being a series of triangular intrusions into the white scales below. Those scales are heavily peppered black and so appear greyish as well.

The black of the upper flank is spotted and speckled further obscuring its prominence, these being mainly small to medium sized spots in a single line anterior to the front leg and including also the first half of the body. On the posterior half of the body, the yellow spots are only tiny and form in two longitudinal rows.

Unlike the other three species (*K. catenifer*, *K. hickmani* and *K. rosswellingtoni sp. nov.*), the sides of the head behind the eye in *K. goreng sp. nov*. has a unique combination of the scales being black but with bright and well defined yellow white medium sized spots in the centre of each scale. These scales being the larger ones behind the eye and anterior to the ear. The original tail is beige with dense black specks generally along each lateral line (this trait being shared with *K. hickmani* and not the other two species).

K. catenifer has a brown tail and yellow with bold black markings, while *K. rosswellingtoni sp. nov.* has a dull brown tail with usually indistinct darker markings on both dorsal and lateral lines.

The four preceding species, being *K. catenifer*, *K. hickmani*, *K. rosswellingtoni sp. nov.* and *K. goreng sp. nov*. are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Legs olive brown (not red) and with either a combination of dark and light markings or bars, or alternatively unicolour with tiny flecks, a broken dorsolateral line, which may be reduced to rows of white scales where some but not all are joined together, creating a broken line. There is no obvious white midlateral stripe that is bordered dark below.

Nasals separated. Prefrontals separated, usually widely. 4 supraoculars, first 2 in contact with the frontal. 6-8 supraciliaries; 8-10 palpebrals; a second loreal being 1 to 1.4 times as wide as high. 7, rarely 8 upper labials; 3-6, usually four ear lobules which are acute or subacute in adults and obtuse in juveniles, with the first or second usually largest; 3 or 4 nuchals; 24-30 midbody rows; 21-25 lamellae under the fourth toes and each with a dark obtuse keel or narrow callus (modified from Storr, 1973).

K. catenifer is depicted in life in Wilson and Swan (2021) on page 263 bottom and online at:

https://www.flickr.com/photos/mattsummerville/46141383841/

and

https://www.flickr.com/photos/133082406@N06/19978980688/

K. hickmani is depicted in life online at:

https://www.flickr.com/photos/brian_busho/14505416091/

K. rosswellingtoni sp. nov. is depicted in life online at:

https://www.flickr.com/photos/crafers/2904663428/

K. goreng sp. nov. is depicted in life in Cogger (2014) on page 490 at bottom left.

Distribution: *K. goreng sp. nov*., is a geographically isolated taxon that is confined to the Stirling Ranges, Western Australia. It is distributionally proximal to *K. catenifer* a closely related species from the adjacent south coast of Western Australia being at its closest about 50 km south or south-east in a straight line (between populations).

Etymology: *K. goreng sp. nov*. is named in recognition of the Goreng people, the original native Australian Aboriginal natives of the Stirling Ranges of Western Australia, Australia. Most were killed off by the British invaders in the early 1800's either directly or through introduced diseases like smallpox. They are now forbidden from living anywhere in the Stirling Ranges after having all their land and property rights taken from them. This is because it is now "Crown Land" formally owned by the British Royal Family.

KOMMOSAGOGUS WELLSEI SP. NOV.

LSIDurn:lsid:zoobank.org:act:D46F6057-AE7F-4502-85F4-EF66B6A4E253

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R103320 collected from Two-Mile Lake, 12 km south of Bluff Knoll, Stirling Ranges National Park, Western Australia, Australia, Latitude -34.483333 S., Longitude 118.25 E.

This government owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R103322 collected from Two-Mile Lake, 12 km south of Bluff Knoll, Stirling Ranges National Park, Western Australia, Australia, Latitude -34.483333 S., Longitude 118.25 E., and 2/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R59714 and R86938 both collected from the South Stirling Nature Reserve, Western Australia, Australia, Latitude -34.583333 S., Longitude 118.216667 E.

Diagnosis: Specimens attributed to the putative south-west Australian species, "*Ctenotus gemmula* Storr, 1974", herein placed in the genus *Kommosagogus* Wells and Wellington, 1984, have long been known to be distributionally disjunct and morphologically divergent.

In line with the molecular results of Kay and Keogh (2012) implying three species involved, the three closely related but divergent species are herein recognized.

K. gemmula is herein confined to the environs of Perth (the type locality for the taxon) and the coastal and near coastal region between 25 km east of Ravensthorpe and Esperance on the south coast, being two separate populations of the same species.

Both populations are also morphologically alike and diagnosable as the same taxonomic entity.

In the cooler near coastal south of the State of Western Australia generally, in the region west of Ravensthorpe extending to the Stirling Ranges is the newly named taxon, *K. wellsei sp. nov*..

In the vicinity of Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) in the east and 5 km west of Israelite Bay (Latitude -33.6166667 S., Longitude 123.8 E.) on the eastern south coast of Western Australia in the west (a closed by site) is a range-restricted population herein formally named as *K. trevorhawkeswoodi sp. nov*..

The three species are easily separated from one another as follows:

All three species have a relatively distinct black band running along the side of the upper flank below the dorsolateral edge. Below this, the lizard's flank is mainly whitish, with an alternation of white and blackish on the scales, with the blackish patches sometimes arranged in a linear manner, but because of the irregular shapes of the darker patches and the white interspaces, no obvious lateral line is formed.

K. gemmula is separated from the species *K. wellsei sp. nov*.. and *K. trevorhawkeswoodi sp. nov*. by having the dark zone of the upper flank heavily overlain with two rows of large elongate, somewhat irregularly shaped yellow spots. Each row of spots is on or near the upper and lower edge of the black band, but because of the size of the spots, there is little black space between them.

K. wellsei sp. nov. essentially lacks these. Instead, the same spots are reduced in size and intensity and also moved up or down to effectively become a part of the upper and lower boundary of the black band, rather than as spots within it.

This means that there is a wide uninterrupted wide black band on the upper flank, with jagged upper and lower edged. There are sometimes up to 7 tiny white specks, scattered irregularly along the midline of the black upper lateral band, but these are nothing like the spots seen on this band in *K. gemmula* or *K. trevorhawkeswoodi sp. nov*. (see below).

In some specimens of *K. wellsei sp. nov*. there are numerous tiny specks on the black upper lateral band, but again these are tiny, very indistinct and nothing like the obvious much larger spots seen in *K. gemmula* or *K. trevorhawkeswoodi sp. nov*. (see below).

K. trevorhawkeswoodi sp. nov. has a single row of medium sized spots running midway along the length of the dark upper flank band.

On the upper edge of this band at the dorsolateral

edge is a thin line consisting of alternating cream or yellow dashes (one to three scales in length), with similar sized interspaces, these being formed by the edge of the brown of the dorsum.

The lower edge of the black upper dorsolateral band is white and relatively jagged, similar in colour to the lower flank and venter and there is no obvious line at the interface of the black upper dorsolateral band and below.

K. trevorhawkeswoodi sp. nov. is also separated from *K. gemmula* and *K. wellsei sp. nov*. by the fact that on the dorsum, the brown colour goes as far as the dorsolateral edge, with its edge in effect forming part of the edge of the line, as in where the yellow dashes are not. By contrast in the other two species, the brown of the dorsum gives way to black just before the dorsolateral edge, meaning that there is a thin zone of black between the dorsolateral line and edge and the brown dorsum in those species.

This means that the interspaces of the broken dorsolateral line are black in *K. gemmula* and *K. wellsei sp. nov*. versus brown in *K. trevorhawkeswoodi sp. nov*..

The three preceding species, being *K. gemmula*, *K. wellsei sp. nov*. and *K. trevorhawkeswoodi sp. nov*. are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

A broken white, cream or yellowish dorsolateral stripe, formed by a series of dashes, usually one scale wide; narrow subdigital calli; consistently having 8 supralabials and the upper surfaces of the legs are light in background colour but overlain with bold blotching or similar markings as in they are not unicolour or unicolour with specks or obscurely dotted with black or grey.

They are further separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following additional unique combination of characters:

Nasals separated (rarely touching); prefrontals usually narrowly separated, occasionally in

short contact; 4 supraoculars, the first two in contact with the frontal; 6-8 supraciliaries 6-8, usually 7; 8-12 palpebrals; second loreal is 1.1 to 1.7 times as high as wide; 8 supralabials; 2-5 (usually 3-4) ear lobules being acute or subacute in adults and second is usually largest; 2-4 (usually 3) nuchals; 24-28 (usually 24-26) midbody rows; 23-27 lamellae under the fourth toe, each with a dark obtuse keel.

Colour dorsally is usually light to dark brown to olive or yellowish grey, unmarked except for a narrow black laterodorsal line (above the dorsolateral edge) from brow to base of the tail in two of the three species (not in *K. trevorhawkeswoodi sp. nov*.). A dorsolateral series of short white dashes run from brow to base of tail. The black upper lateral zone is with or without a series of white spots, extending forward as a broken stripe through the orbit nearly to the tip of the snout and backward on to the proximal quarter of tail. The white midlateral stripe being in the form of a stripe or border is either wavy, jagged edged or sometimes broken into series of short dashes.

The narrow dark grey lower lateral zone is variably marked with white and blackish with there being more light than dark, making it greyish in overall appearance. The legs are light to medium yellowish brown and boldly marked with blackish blotches or similar (the preceding was mainly modified from Storr 1974).

K. gemmula is depicted in life in Wilson and Swan (2021) on page 271 at top right, Storr *et al.* (1981) in plate 3 top right.

K. wellsei sp. nov. is depicted in life online at:

https://www.flickr.com/photos/euprepiosaur/52921847018/

and

https://www.flickr.com/photos/171250498@N08/52911877829/

Distribution: *K. wellsei sp. nov*. occurs in the cooler near coastal south of the State of Western Australia generally, in the region west of Ravensthorpe extending to the Stirling Ranges.

Etymology: *K. wellsei sp. nov.* is named in honour of Richard W. Wells currently of Drake, in northern New South Wales, Australia in recognition of his many critically important contributions to herpetology in Australia and internationally spanning some decades.

Known to his friends as “Wellsey” or “Wellsei” the spelling of the species name “*wellsei*” is deliberate and should not be changed/

KOMMOSAGOGUS TREVORHAWKESWOODI SP. NOV.

LSIDurn:lsid:zoobank.org:act:9F8CA5E4-F7CC-4008-A132-2D894B807D05

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R77749 collected 6

km east north-east of Toolinna Rock Hole, Western Australia, Australia, Latitude -32.725 S., Longitude 25.033333 E.
This government owned facility allows access to its holdings.
Paratypes: 1/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R66751 collected 7 km east north-east of Toolinna Rock Hole, Western Australia, Australia, Latitude -32.7 S., Longitude 125.033333 E., 2/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R94097 and R94104 collected 6 km east north-east of Toolinna Rock Hole, Western Australia, Australia, Latitude -32.725 S., Longitude 25.033333 E., 3/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R31102 collected 5 km west of Israelite Bay, Western Australia, Australia, Latitude -33.616667 S., Longitude 33.616667 E..

Diagnosis: Specimens attributed to the putative south-west Australian species, "*Ctenotus gemmula* Storr, 1974", herein placed in the genus *Kommosagogus* Wells and Wellington, 1984, have long been known to be distributionally disjunct and morphologically divergent.

In line with the molecular results of Kay and Keogh (2012) implying three species involved, the three closely related but divergent species are herein recognized.

K. gemmula is herein confined to the environs of Perth (the type locality for the taxon) and the coastal and near coastal region between 25 km east of Ravensthorpe and Esperance on the south coast, being two separate populations of the same species.

Both populations are also morphologically alike and diagnosable as the same taxonomic entity.

In the cooler near coastal south of the State of Western Australia generally, in the region west of Ravensthorpe extending to the Stirling Ranges is the newly named taxon, *K. wellsei sp. nov*..

In the vicinity of Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) in the east and 5 km west of Israelite Bay (Latitude -33.6166667 S., Longitude 123.8 E.) on the eastern south coast of Western Australia in the west is a range-restricted population herein formally named as *K. trevorhawkeswoodi sp. nov*..

The three species are easily separated from one another as follows:

All three species have a relatively distinct black band running along the side of the upper flank below the dorsolateral edge. Below this, the lizard's flank is mainly whitish, with an alternation of white and blackish on the scales, with the blackish patches sometimes arranged in a linear manner, but because of the irregular shapes of the darker patches and the white interspaces, no obvious lateral line is formed.

K. gemmula is separated from the species *K. wellsei sp. nov*.. and *K. trevorhawkeswoodi sp. nov*. by having the dark zone of the upper flank heavily overlain with two rows of large elongate, somewhat irregularly shaped yellow spots. Each row of spots is on or near the upper and lower edge of the black band, but because of the size of the spots, there is little black space between them.

K. wellsei sp. nov. essentially lacks these. Instead, the same spots are reduced in size and intensity and also moved up or down to effectively become a part of the upper and lower boundary of the black band, rather than as spots within it.

This means that there is a wide uninterrupted wide black band on the upper flank, with jagged upper and lower edged. There are sometimes up to 7 tiny white specks, scattered irregularly along the midline of the black upper lateral band, but these are nothing like the spots seen on this band in *K. gemmula* or *K. trevorhawkeswoodi sp. nov*. (see below).

In some specimens of *K. wellsei sp. nov*. there are numerous tiny specks on the black upper lateral band, but again these are tiny, very indistinct and nothing like the obvious much larger spots seen in *K. gemmula* or *K. trevorhawkeswoodi sp. nov*. (see below).

K. trevorhawkeswoodi sp. nov. has a single row of medium sized spots running midway along the length of the dark upper flank band.

On the upper edge of this band at the dorsolateral edge is a thin line consisting of alternating cream or yellow dashes (one to three scales in length), with similar sized interspaces, these being formed by the edge of the brown of the dorsum.

The lower edge of the black upper dorsolateral band is white and relatively jagged, similar in colour to the lower flank and venter and there is no obvious line at the interface of the black upper dorsolateral band and below.

K. trevorhawkeswoodi sp. nov. is also separated from *K. gemmula* and *K. wellsei sp. nov*. by the fact that on the dorsum, the brown colour goes as far as the dorsolateral edge, with its edge in effect forming part of the edge of the line, as in where the yellow dashes are not. By contrast in the other two species, the brown of the dorsum gives way to black just before the dorsolateral edge, meaning that there is a thin zone of black between the dorsolateral line and edge and the brown dorsum in those species.

This means that the interspaces of the broken dorsolateral line are black in *K. gemmula* and *K. wellsei sp. nov*. versus brown in *K. trevorhawkeswoodi sp. nov*..

The three preceding species, being *K. gemmula*, *K. wellsei sp. nov*. and *K. trevorhawkeswoodi sp. nov*. are separated from all other similar and closely related species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper,

being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

A broken white, cream or yellowish dorsolateral stripe, formed by a series of dashes, usually one scale wide; narrow subdigital calli; consistently having 8 supralabials and the upper surfaces of the legs are light in background colour but overlain with bold blotching or similar markings as in they are not unicolour or unicolour with specks or obscurely dotted with black or grey.

They are further separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov.* by the following additional unique combination of characters:

Nasals separated (rarely touching); prefrontals usually narrowly separated, occasionally in

short contact; 4supraoculars 4, the first two in contact with the frontal; 6-8 supraciliaries 6-8, usually 7; 8-12 palpebrals; second loreal is 1.1 to 1.7 times as high as wide; 8 supralabials; 2-5 (usually 3-4) ear lobules being acute or subacute in adults and second is usually largest; 2-4 (usually 3) nuchals; 24-28 (usually 24-26) midbody rows; 23-27 lamellae under the fourth toe, each with a dark obtuse keel.

Colour dorsally is usually light to dark brown to olive or yellowish grey, unmarked except for a narrow black laterodorsal line (above the dorsolateral edge) from brow to base of the tail in two of the three species (not in *K. trevorhawkeswoodi sp. nov*.). A dorsolateral series of short white dashes run from brow to base of tail. The black upper lateral zone is with or without a series of white spots, extending forward as a broken stripe through the orbit nearly to the tip of the snout and backward on to the proximal quarter of tail. The white midlateral stripe being in the form of a stripe or border is either wavy, jagged edged or sometimes broken into series of short dashes.

The narrow dark grey lower lateral zone is variably marked with white and blackish with there being more light than dark, making it greyish in overall appearance. The legs are light to medium yellowish brown and boldly marked with blackish blotches or similar (the preceding was mainly modified from Storr 1974).

K. gemmula is depicted in life in Wilson and Swan (2021) on page 271 at top right, Storr *et al.* (1981) in plate 3 top right.

K. wellsei sp. nov. is depicted in life online at:

https://www.flickr.com/photos/euprepiosaur/52921847018/

and

https://www.flickr.com/photos/171250498@N08/52911877829/

Distribution: *K. trevorhawkeswoodi sp. nov*. is a taxon restricted to the vicinity of Toolinna Rockhole (Latitude -32.7 S., Longitude 125.033333 E.) in the east and 5 km west of Israelite Bay (Latitude -33.6166667 S., Longitude 123.8 E.) on the eastern south coast of Western Australia in the west (a short distance away) and is very range-restricted taxon, that should be regarded as vulnerable to extinction.

Etymology: *K. trevorhawkeswoodi sp. nov*. is named in honour of Dr. Trevor J. Hawkeswood of Northmead, New South Wales, Australia in recognition of his many critically important contributions to entomology, herpetology, taxonomy and zoology in general spanning some decades.

TANTALOSCINCUS JULIANASSANGEI SP. NOV.

LSIDurn:lsid:zoobank.org:act:EB8D1EED-7687-46A2-8D24-E3294F44DD51

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R46072 collected at 13.8 km west south-west of the Lonesome Pine Dam, Lake Gilles Conservation Park, South Australia, Australia, Latitude -33.0933 S., Longitude 136.6939 E.

This government owned facility allows access to its holdings.

Paratypes: Three preserved specimens at the South Australian Museum, Adelaide, South Australia, Australia, 1/ Specimen number R56624 collected 4.5 km east north-east of Corrobinnie Hill, South Australia, Australia, Latitude -32.9669 S., Longitude 135.7819 E., 2/ Specimen number R56672 collected from 5.1 km east northeast of Corrobinnie Homestead, South Australia, Australia, Latitude -32.9642 S., Longitude 135.7872 E., 3/ Specimen number R57629 collected from 18.7 km west northwest of Iron Duchess, South Australia, Australia, Latitude -33.2231 S., Longitude 136.9308 E.

Diagnosis: "*Ctenotus brooksi euclae*" (Storr, 1971), with a type locality of Eucla, Western Australia, (Latitude -31.43 S., Longitude 128.53 E.) is now recognised by most herpetologists as being a valid species separate from "*Ctenotus brooksi* (Loveridge, 1933)", type locality allegedly of "Perth", Western Australia, Australia.

This separation of the two species was confirmed by the phylogeny published by Singhal *et al*. (2017).

Both putative species are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

Analysis of sequences of putative *T. euclae* from eastern and western parts of their range showed an estimated divergence of 2 MYA between the two main clades, which in short means there are two species involved.

Interestingly sequences of *T. brooksi* from a far wider area showed no such deep divergence.

As the two relevant populations of *T. euclae* are readily separable by morphology, the eastern form of putative *T. euclae* from the Eyre Peninsula of South Australia, Australia and nearby parts of that state to the immediate west along the Great Australian Bight is herein formally named as a new species *T. julianassangei sp. nov*..

T. julianassangei sp. nov. is readily separated from *T. euclae* by colouration.

T. euclae is a light sandy coloured lizard on top, rarely with a slight pinkish tinge. *T. julianassangei sp. nov*. is obviously pink on top.

The black band on the upper lateral surface of the flank in *T. euclae* is about half the width of the flank and densely covered with white spots or blotches all over.

By contrast in *T. julianassangei sp. nov*. the black band on the upper lateral surface of the flank is narrow and lacks any dense cover of white spots or blotches all over. Rarely there may be a small number of scattered tiny indistinct light flecks, or occasionally yellow intrusions from the yellow boundary of the dorsolateral edge line.

In *T. julianassangei sp. nov*. the three mid vertebral rows of dots tend to be joined to form longitudinal lines running down the back of the lizard, versus only the middle row in *T. euclae.*

Both *T. julianassangei sp. nov*. and *T. euclae* are separated from the morphologically similar species, *T. brooksi* (Loveridge, 1933) and *T. taeniatus* (Mitchell, 1949) (of all subspecies), by the light-coloured dorsum and the presence of a single presubocular.

The four species are separated from all other similar species within the genus *Tantaloscincus* Wells and Wellington, 1984 by the presence of enlarged, keeled plantars opposite the fourth toe.

T. julianassangei sp. nov., *T. euclae* and *T. brooksi* are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

A dorsal pattern consisting of stripes, spots, blotches and variegations, or a combination of these, but not with obvious ocelli; nasal is either weakly or not grooved; 24-30 midbody scale rows; adults small (snout-vent length up to 52 mm only); toes moderately or strongly compressed; subdigital lamellae sharply keeled dark brown, which may end in a tiny spine; tail less than twice as long as the snout-vent length; nasals usually separated (occasionally in short contact); prefrontals in contact or narrowly separated; four or rarely five supraoculars; 7 or 8 supralabials; the 2-5 ear lobules are short to moderately long; 18-28 lamellae under fourth toe; hindleg is 41-56 percent of snout-vent length; usually only one presubocular; plantar scales opposite the fourth toe are enlarged and keeled.

T. euclae is depicted in life in Wilson and Swan (2021) on page 269 at top, Cogger (2014) on page 494 bottom left and Storr *et al*. (1981) on plate 9, image 2 (top right) and online at:

https://www.flickr.com/photos/reptileshots/48158148962/

T. julianassangei sp. nov. is depicted in life online at:

https://www.flickr.com/photos/moloch05/39807657473/

and

https://www.inaturalist.org/observations/161922133

and

https://www.inaturalist.org/observations/54978083

and

https://www.inaturalist.org/observations/151373361

Distribution: *T. julianassangei sp. nov*. occurs from the upper Eyre Peninsula of South Australia, Australia and nearby parts of that state to the immediate west along the near parts of the Great Australian Bight. *T. euclae* is the taxon from the coast south of the Nullarbor and west into southern Western Australia.

The distribution of both taxa tends to hug the coastline except for the Eyre Peninsula region, where *T. julianassangei sp. nov*. extends inland.

Etymology: *T. julianassangei sp. nov*. is named in honour of Australian Julian Paul Assange born 3 July 1971. He was an Australian editor, publisher and activist who founded WikiLeaks in 2006. He came to wide international attention in 2010 when WikiLeaks published a series of leaks from US Army intelligence analyst Chelsea Manning including footage of a US airstrike in Baghdad, US military logs from the Afghanistan and Iraq wars as well as US diplomatic cables. Assange has won multiple awards for publishing and journalism. He has since been arrested, faced numerous contrived and concocted criminal charges and as of 2024 is languishing in a squalid UK prison, where he has been for some years and with no plans of release.

The etymology does not so much recognize the achievements of Julian Assange but should rather be reflected upon to show the endemic corruption of the legal systems within the UK, Australia and the USA

in which people who are disliked by those in power can be and are locked up for fabricated offences and charges. Julian Assange is merely one of the better-known victims of this system which claims tens of thousands of other innocent victims annually.

TANTALOSCINCUS XORUM SP. NOV.

LSIDurn:lsid:zoobank.org:act:634A9C50-C82E-42F7-9154-46E662EC5FBA

Holotype: A preserved specimen at the Northern Territory Museum, Darwin, Northern Territory, Australia, Australia, specimen number R14947 collected from 12 km south-west of Sangster's Bore, Tanami Desert, Northern Territory, Australia, Latitude -20.867 S., Longitude 130.267 E.

This government owned facility allows access to its holdings.

Paratypes: Nine preserved specimens at the Northern Territory Museum, Darwin, Northern Territory, Australia, Australia, 1/ Specimen numbers R14931, R14940, R15148, R14969 and R14953 all collected from 12 km south-west of Sangster's Bore, Tanami Desert, Northern Territory, Australia, Latitude -20.867 S., Longitude 130.267 E., 2/ Specimen number R14511 collected from 15 km north-west of Sangster's Bore, Tanami Desert, Northern Territory, Australia, Latitude -20.75 S., Longitude 130.283 E., 3/ Specimen number R31888 collected from 10 km south-west of Sangster's Bore, Tanami Desert, Northern Territory, Australia, Latitude -20.817 S., Longitude 130.267 E., 4/ Specimen number R15053 collected from Sangster's Bore, Tanami Desert, Northern Territory, Australia, Latitude -20.95 S., Longitude 130.417 E., 5/ Specimen number R31884 collected from the Tanami Desert, Northern Territory, Australia, Latitude -20.8 S., Longitude 130.233 E,

Diagnosis: Until now, putative "*Ctenotus calurus* Storr, 1969" type locality of 24 miles east northeast of Laverton, Western Australia, (Latitude -28.31 S., Longitude 122.45 E), now placed in the genus *Tantaloscincus* Wells and Wellington, 1985 has been treated as a wide-ranging taxon from Centralian sand dune habitats in West Australia, the Northern Territory and South Australia, with a distribution extending to the west coast of Australia on the southern edge of the Pilbara region, south-west of the Cape Range and extending to western Queensland on the eastern edge of the Simpson Desert.

However, the sequence data available yielded a divergence between two main population groups of about 3 MYA. Because they are morphologically divergent, the unnamed Centralian form is herein formally named as a new species, *Tantaloscincus xorum sp. nov.*.

That taxon occurs generally east of the low-lying flood prone flats that generally run in a north-south line along the Western Australian border, parallel to both most of the Northern Territory and the northern parts of South Australia, but generally almost entirely within the territorial limits of Western Australia.

Hence *T. xorum sp. nov.*. is the taxon from central Australia in the Northern Territory, northern South Australia and far west Queensland in the sandy eastern extremity of the Simpson Desert.

West of this zone and throughout most of the interior of Western Australia *T. calurus* occurs.

The species is generally absent from the western third of Western Australia, save for an isolated and divergent population of this putative taxon found generally south-west of the Cape Range in the relevant sand and dune habitat. While there is no molecular data with respect of this population, it is in some ways more divergent from the other two (*T. xorum sp. nov.* and the putative type form of *T. calurus*) than they are to each other.
Because of the known depth of divergence between *T. xorum sp. nov.* and the putative type form of *T. calurus* I have no hesitation in formally naming the western form as a new species, being *T. muski sp. nov.*.

T. xorum sp. nov., *T. calurus,* and *T. muski sp. nov.* are separated from one another by the following character combinations:

In all of *T. xorum sp. nov.*, *T. calurus,* and *T. muski sp. nov.* there are five yellow lines running down the dorsum. These are a vertebral line, two lines along the lateral edges and two others between them.

They all form at the back of the head. They then merge to form a single bluish-white line at the distal end of the tail. The mid-dorsal lines merge first with the latero-dorso lines either near the hind limbs or past them. The remaining three lines merge further down the tail.

In both *T. xorum sp. nov.*, *T. calurus* the two outer yellow lines on the dorsum join at the end of the body, at approximately the hind limb area. This is done by the inner line becoming broken and curving into the other outer line.

For *T. muski sp. nov.* this line goes well beyond the pelvic girdle and merely stops. It is not as a rule broken in this area.

In terms of the yellow lines remaining on the upper surface of the anterior part of the (original) tail, being the vertebral and lateral lines, they join at or before the length of the outstretched adpressed hindlimb to the ankle of the foot (against the tail) in *T. xorum sp. nov.*. In the other two species these two lines join much further down the tail. *T. muski sp. nov.* is alone in the trio in that the lines join properly beyond the length of the toe when the hind limb is adpressed against the tail.

T. calurus has an end of tail that is royal blue in colour. The black lower lateral band is thick. The black band behind the eye that becomes the black band on the upper flank is well defined from the orbit.

T. xorum sp. nov. has an end of tail that ranges between periwinkle blue and light purplish pink in colour. The black lower lateral band is thin. The black

band behind the eye that becomes the black band on the upper flank is not well defined from the orbit but is instead mainly a dark brown colour between eye and ear before turning black on the neck and body proper.

In both *T. calurus* and *T. xorum sp. nov.* the back and white lines or bands on the flanks are bold, sharp edged and well defined.

In *T. muski sp. nov.* is more yellowish-brown all over than the other two species. The black bar behind the eye is thin, as opposed to thick in the dark bar in the other two species. The tail is purply pink at the distal end, rather than blue or bluish. The edges of the black and white stripes or bands on the flanks are distinctively brownish edged.

Both *T. calurus* and *T. muski sp. nov.* have well-defined black blotches and similar markings on the upper surface of the head, versus poorly defined in *T. xorum sp. nov.*.

The three species, *T. calurus*, *T. muski sp. nov.* and *T. xorum sp. nov.* are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Pattern consisting of 5 thin yellow/white longitudinal stripes on the dorsum, including a vertebral line and the two laterodorsal lines, all being unbroken and well defined on an otherwise black background.

Flanks with a thick upper black band, followed by a white band of moderate thickness, below which is a thin of thick black or blackish line on the lower flank; the pattern does not include any series of spots or ocelli; tail is transversely marked below with black, especially at the anterior end; size is small being 50 mm snout-vent length, with a slender build and pointed snout; nasal is weakly or not grooved; 24-28 midbody scale rows; 7 upper labials; 4 supraoculars; nasals usually in contact, but sometimes narrowly separated; 3-5 ear lobules; toes moderately or strongly compressed; 20-24 subdigital lamellae under the fourth toe which are sharply keeled and mucronate; the series of plantars opposite fourth toe are enlarged and keeled; tail is less than twice as long as the snout-vent length;

T. xorum sp. nov.. is depicted in life in Wilson and Swan (2021) on page 263 second from top and online at:
https://www.flickr.com/photos/zimny_anders/50385012997/

and
https://www.inaturalist.org/observations/63785344

and
https://www.inaturalist.org/observations/123287439

and
https://www.inaturalist.org/observations/45575043
T. calurus is depicted in life in Cogger (2014) on page 489 at bottom, Storr *et al.* (1981), on plate 9, photo 8, bottom right and online at:
https://www.flickr.com/photos/brian_busho/16508116443/
and
https://www.inaturalist.org/observations/156197299
T. calurus muski subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/colonel_007/49103744853/

Distribution: *T. xorum sp. nov.* occurs in the sandy deserts and adjacent sandy areas of central Australia in the Northern Territory, northern South Australia and the far west of Queensland in the sandy eastern extremity of the Simpson Desert.

East of this zone and throughout most of the interior of Western Australia *T. calurus* occurs.

That species is generally absent from the western third of Western Australia.

T. muski sp. nov. occurs south-west of the Cape Range near the mid-west Australian coast (just south of the Pilbara region) in sand and dune habitat wedged between regions of hilly uplands and flooding plains.

Etymology: *T. xorum sp. nov.* is named in recognition of the online “platform” “Twitter”, more recently known as “X” for defying the fascist Australian government in 2024.

Following the publication in 2024 online of a video of a police-protected terrorist attacking a priest in an Australian church, the Australian government sought to erase all records of this failure of Australian law-enforcement and protection from the entire world.

The embarrassment was caused because the terrorist was a police protected criminal and it made the corrupt government in Australia look bad to the world in that through its corrupt police forces, they were allowing citizens to be harassed, attacked and terrorised by police-protected criminals.

The Australian government censorship department, this time calling itself the “eSafety Commissioner” (an oxymoron in itself) directed all online “Platforms”, as in Facebook, Youtube, Twitter, etc to remove from their servers worldwide all copies of and access to the relevant video.

Facebook and Youtube complied, but Musk and his “platform” “X” defied this directive and refused to delete it outside of Australia.

Quite correctly “X” noted that if “Platforms” were to delete material at request of a government, any fascist state anywhere could in effect control the global media and all information flows.
On 13 May 2024, Judge Geoffrey Ross Kennett in

a published ruling, effectively sided with Musk and Twitter and refused to extend an inunction against the company (Kennett 2024).

Justice Kennett, quite likely under direct pressure from the United State Government, openly supporting "X", wrote that a global ban on posted material on "X" would clash with a concept called "the comity of nations". That is a legal mutual recognition by nations of the laws and customs of others.

Justice Kennett said it "*would be a clear case of a national law purporting to apply 'persons or matters over which, according to the comity of nations, the jurisdiction properly belongs to some other sovereign or state'*".

He further said: "*What X Corp is to be permitted to show to users in a particular country is something that the 'comity of nations' would ordinarily regard as the province of that country's government*."

The species name "*xorum*" is in recognition of a business and their staff, ("X") who used their own power to stand up to a tyrannical fascist government in the form of the Australian government. It should be pronounced "ex-orum".

Elon Musk, an American Billionaire, as owner in ultimate control of "X" is also recognized with the species name *T. muski sp. nov.* (see below).

TANTALOSCINCUS MUSKI SP. NOV.

LSIDurn:lsid:zoobank.org:act:087030DD-1418-46AD-A243-A07403659DE3

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R123224 collected at the Kennedy Range National Park, Western Australia, Australia, Latitude -24.500833 S., Longitude 115.0175 E.

This government owned facility allows access to its holdings.

Paratypes: 11 preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, being: 1/ Specimen number R123276 collected at the Kennedy Range National Park, Western Australia, Australia, Latitude -24.500833 S., Longitude 115.0175 E., 2/ Specimen number R5342 collected at Marrilla Station, Western Australia, Australia, Latitude -22.966667 S., Longitude 114.45 E., 3/ Specimen number R172399 collected at Cane River, Western Australia, Australia, Latitude -22.436667 S., Longitude 115.2925 E., 3/ Specimen numbers R120682, R122767, R122769, R125339 and R126797 all collected from 13 km west northwest of the Mardathuna Homestead, Western Australia, Australia, Latitude -24.405556 S., Longitude 114.444167 E., 4/ Specimen number R126778 collected from 12 km west northwest of the Mardathuna Homestead, Western Australia, Australia, Latitude -24.406944 S., Longitude 114.473056 E., 5/ Specimen number R122802 collected 8 km west northwest of the Mardathuna Homestead, Western Australia, Australia, Latitude -24.428889 S., Longitude 114.5 E., 6/ Specimen number R122812 collected 6 km east southeast of the Mardathuna Homestead, Western Australia, Australia, Latitude -24.443056 S., Longitude 114.511667 E., 6/ Specimen number R122893 collected near Mardathuna Homestead, Western Australia, Australia, Latitude -24.466667 S., Longitude 114.55 E.

Diagnosis: Until now, putative "*Ctenotus calurus* Storr, 1969" type locality of 24 miles east northeast of Laverton, Western Australia, (Latitude -28.31 S., Longitude 122.45 E), now placed in the genus *Tantaloscincus* Wells and Wellington, 1985 has been treated as a wide-ranging taxon from Centralian sand dune habitats in West Australia, the Northern Territory and South Australia, with a distribution extending to the west coast of Australia on the southern edge of the Pilbara region, south-west of the Cape Range and extending to western Queensland on the eastern edge of the Simpson Desert.

However, the sequence data available yielded a divergence between two main population groups of about 3 MYA. Because they are morphologically divergent, the unnamed Centralian form is herein formally named as a new species, *Tantaloscincus xorum sp. nov.*.

That taxon occurs generally east of the low-lying flood prone flats that generally run in a north-south line along the Western Australian border, parallel to both most of the Northern Territory and the northern parts of South Australia, but generally almost entirely within the territorial limits of Western Australia.

Hence *T. xorum sp. nov.*. is the taxon from central Australia in the Northern Territory, northern South Australia and far west Queensland in the sandy eastern extremity of the Simpson Desert.

West of this zone and throughout most of the interior of Western Australia *T. calurus* occurs.

The species is generally absent from the western third of Western Australia, save for an isolated and divergent population of this putative taxon found generally south-west of the Cape Range in the relevant sand and dune habitat. While there is no molecular data with respect of this population, it is in some ways more divergent from the other two (*T. xorum sp. nov.* and the putative type form of *T. calurus*) than they are to each other.
Because of the known depth of divergence between *T. xorum sp. nov.* and the putative type form of *T. calurus* I have no hesitation in formally naming the western form as a new species, being *T. muski sp. nov.*.

T. xorum sp. nov., *T. calurus,* and *T. muski sp. nov.* are separated from one another by the following character combinations:

In all of *T. xorum sp. nov.*, *T. calurus,* and *T. muski sp. nov.* there are five yellow lines running down the dorsum. These are a vertebral line, two lines alone the lateral edges and two others between them.

They all form at the back of the head. They then merge to form a single bluish-white line at the distal end of the tail. The mid-dorsal lines merge first with the latero-dorso lines either near the hind limbs or past them. The remaining three lines merge further down the tail.

In both *T. xorum sp. nov.*, *T. calurus* the two outer yellow lines on the dorsum join at the end of the body, at approximately the hind limb area. This is done by the inner line becoming broken and curving into the other outer line.

For *T. muski sp. nov.* this line goes well beyond the pelvic girdle and merely stops. It is not as a rule broken in this area.

In terms of the yellow lines remaining on the upper surface of the anterior part of the (original) tail, being the vertebral and lateral lines, they join at or before the length of the outstretched adpressed hindlimb to the ankle of the foot (against the tail) in *T. xorum sp. nov.*. In the other two species these two lines join much further down the tail. *T. muski sp. nov.* is alone in the trio in that the lines join properly beyond the length of the toe when the hind limb is adpressed against the tail.

T. calurus has an end of tail that is royal blue in colour. The black lower lateral band is thick. The black band behind the eye that becomes the black band on the upper flank is well defined from the orbit.

T. xorum sp. nov. has an end of tail that ranges between periwinkle blue and light purplish pink in colour. The black lower lateral band is thin. The black band behind the eye that becomes the black band on the upper flank is not well defined from the orbit but is instead mainly a dark brown colour between eye and ear before turning black on the neck and body proper.

In both *T. calurus* and *T. xorum sp. nov.* the back and white lines or bands on the flanks are bold, sharp edged and well defined.

In *T. muski sp. nov.* is more yellowish-brown all over than the other two species. The black bar behind the eye is thin, as opposed to thick in the other two species. The tail is purply pink at the distal end, rather than blue or bluish. The edges of the black and white stripes or bands on the flanks are distinctively brownish edged.

Both *T. calurus* and *T. muski sp. nov.* have well-defined black blotches and similar markings on the upper surface of the head, versus poorly defined in *T. xorum sp. nov.*.

The three species, *T. calurus*, *T. muski sp. nov.* and *T. xorum sp. nov.* are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Pattern consisting of 5 thin yellow/white longitudinal stripes on the dorsum, including a vertebral line and the two laterodorsal lines, all being unbroken and well defined on an otherwise black background.

Flanks with a thick upper black band, followed by a white band of moderate thickness, below which is a thin of thick black or blackish line on the lower flank; the pattern does not include any series of spots or ocelli; tail is transversely marked below with black, especially at the anterior end; size is small being 50 mm snout-vent length, with a slender build and pointed snout; nasal is weakly or not grooved; 24-28 midbody scale rows; 7 upper labials; 4 supraoculars; nasals usually in contact, but sometimes narrowly separated; 3-5 ear lobules; toes moderately or strongly compressed; 20-24 subdigital lamellae under the fourth toe which are sharply keeled and mucronate; the series of plantars opposite fourth toe are enlarged and keeled; tail is less than twice as long as the snout-vent length;

T. xorum sp. nov.. is depicted in life in Wilson and Swan (2021) on page 263 second from top and online at:
https://www.flickr.com/photos/zimny_anders/50385012997/

and
https://www.inaturalist.org/observations/63785344

and

https://www.inaturalist.org/observations/123287439

and
https://www.inaturalist.org/observations/45575043
T. calurus is depicted in life in Cogger (2014) on page 489 at bottom, Storr *et al.* (1981), on plate 9, photo 8, bottom right and online at:
https://www.flickr.com/photos/brian_busho/16508116443/
and

https://www.inaturalist.org/observations/156197299
T. calurus muski subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/colonel_007/49103744853/

Distribution: *T. muski sp. nov.* occurs south-west of the Cape Range near the mid-west Australian coast (just south of the Pilbara region) in sand and dune habitat wedged between regions of hilly uplands and flooding plains.

T. xorum sp. nov. occurs in the sandy deserts and adjacent sandy areas of central Australia in the Northern Territory, northern South Australia and the far west of Queensland in the sandy eastern extremity of the Simpson Desert.

East of this zone and throughout most of the interior of Western Australia *T. calurus* occurs.

That species is generally absent from the western third of Western Australia.

Etymology: Named in honour of American Billionaire Elon Musk.

Refer to the preceding etymology for *T. xorum sp. nov.* for further detail.

TANTALOSCINCUS KATTERI SP. NOV.

LSIDurn:lsid:zoobank.org:act:4A74E88C-EB56-4BD7-9A34-7BB247EE8419

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R42743 collected from 84 km north of Muttaburra, Queensland, Australia, Latitude -21.92 S., Longitude 144.42 E.

This government owned facility allows access to its holdings.

Paratype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R55734 collected from 19 km south of Julia Creek on the Julia Creek-Kynuna Road, Queensland, Australia, Latitude -20.8239 S., Longitude 141.7464 E.

Diagnosis: Until now *Tantaloscincus katteri sp. nov*. has been treated as a northern population of the putative species "*Ctenotus strauchii* (Boulenger, 1887)" with a type locality of Gayndah, Queensland (east of the Great Dividing Range).

T. katteri sp. nov. is known only from the localities of the type (Muttaburra), paratype (Julia Creek), Ilfracome and Belyando, all in inland north Queensland (being a straight line distance of about 500 km between the two furthest points). It is a separate taxon from the type form of *T. strauchii* (herein confined to the east of the Great Dividing Range) and *T. hattoni sp. nov*. a taxon mainly from the upper Darling River basin, in New South Wales and southern Queensland, previously also treated as putative *T. strauchii* by most herpetologists to the current time (both of which are more morphologically alike than either is to *T. katteri sp. nov*.).

The preceding trio are also separate to the other closely related taxa, named "*Ctenotus allotropis* Storr, 1981", type locality of the Round Hill Fauna Reserve, near Euabalong, New South Wales, being from western New South Wales and nearby southern Queensland away from the coast as well as "*Ctenotus strauchii varius* Storr, 1981" (herein treated as a full species based on publicly available molecular data as published by Singhal *et al.* 2017), with a type locality of Charlotte Waters in the far southeast of the Northern Territory, being a taxon from the Cooper's Creek / Lake Eyre drainage system in western Queensland, southern Northern Territory and northern South Australia.

In all these species, except *T. katteri sp. nov*., there is on each side of the body, a narrow white dorsolateral stripe from above the eye to the tail, on which it becomes wider and suffused with brown.

However, in *T. katteri sp. nov*. to the exclusion of all the other four species, instead of brown suffusions on the (original) tail, this is replaced by a series of short white oblique dashes, readily separating it from those species.

T. katteri sp. nov. is further separated from the other four species by the fact that the upper surface of the (original) tail is light as in light beige, light yellow, cream or white, versus brownish or reddish in all the other species.

The white line slightly below the midline of the lateral surface is thick in *T. katteri sp. nov*. versus thin in the other species.

T. katteri sp. nov. has 9-11 spots, pairs or clusters of orange spots along the black band of the upper flank, versus 13-19 in *T. strauchii* and *T. hattoni sp. nov.,* or 26-32 in *T. varius* or 10-15 in *T. allotropis.*

The other relevant species, formerly treated as populations of *T. strauchii* or closely allied taxa are separated from one another by the following unique combinations of characters:

T. strauchii is separated from the morphologically similar *T. hattoni sp. nov.* by the absence of a vertebral stripe or one that is not obvious and distinct; the black laterodorsal stripe is very wide (versus only moderately wide); the limbs are considerably longer and there are 20-22 subdigital lamellae under the fourth toe, versus 14-19 in *T. hattoni sp. nov.*.

All of *T. strauchii*, *T. katteri sp. nov*. and *T. hattoni sp. nov.* are defined as having prefrontals widely separated, second supraocular usually narrower than the third, ear lobules are very small, subdigital keels fine and mucronate and a body pattern that includes an obvious series of orangish spots or blotches along the black bar of the upper flank (the latter trait separating these species from the closely related *T. zebrilla* (Storr, 1981) and *T. zebrilla confusaidem subsp. nov*..).

T. varius is separated from each of *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.* and *T. allotropis* by its pale coloration, diffuse colour pattern (including the higher number of 26-32 light spots or patches on the dark upper lateral line), more numerous presuboculars (3 versus 2 in the other species) and upper labials (7-9, usually 8, versus usually 7 and rarely 8 in the other species),

supraciliaries decreasing gradually in size from first to penultimate, and ear lobules more disparate in size. *T. varius* is further separated by having sharply keeled subdigital lamellae under the fourth toe.

The closely related taxon, *T. allotropis* is separated from the preceding four species by having nasals in contact and prefrontals widely separated, and is further separated by having 17-22 lamellae under the fourth toes, each with a relatively wide blackish-brown keel (proximal keels obtuse, distal keels

fine and mucronate).

The five preceding species, being *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.*, *T. varius* and *T. allotropis* are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Pattern consists of longitudinal lines, stripes and/or series of spots, but not including obvious ocelli; nasal weakly or not grooved; 24-32 midbody scale rows; adults small (snout-vent length up to 62 cm); toes moderately or strongly compressed; tail less than twice as long as snout-vent; nasals usually forming a median suture (in contact); prefrontals widely separated (rarely close); 2-3 very short ear lobules; 16-20 subdigital lamellae under fourth toe that are sharply keeled and mucronate; adpressed hindleg is 33-41 percent of snout-vent length and a body pattern that includes an obvious series of orangish spots or blotches along the black bar of the upper flank.

Images of the type form of *T. strauchii* in life are depicted online at:

https://www.flickr.com/photos/elliotbudd/51937727237/

and

https://www.inaturalist.org/observations/190286562

Images of *T. katteri sp. nov.* in life are depicted in Wilson (2022) on page 143 at top left and online at:

https://www.flickr.com/photos/gondwanareptileproductions/50827262947/

Images of *T. hattoni sp. nov.* in life are depicted in Swan et al. (2022) on page 145 top and online at:

https://www.flickr.com/photos/whawha88/15402116191/

Images of *T. varius* in life are depicted online at:

https://www.inaturalist.org/observations/42305418

and

https://www.inaturalist.org/observations/102389001

Images of *T. allotropis* in life are depicted in Cogger (2014) on page 482 top right, Swan *et al.* (2022) on page 133, Wilson and Swan (2021) on page 255 middle, Wilson (2022) on page 128 top left and online at:

https://www.flickr.com/photos/zimny_anders/30026582643/

and

https://www.flickr.com/photos/54876436@N08/29083266790/

Analysis of the relevant available sequences, indicates that *T. katteri sp. nov.* appears to have a divergence of 2.3-2.5 MYA from its nearest relative being *T. hattoni sp. nov*.. As it is also very divergent morphologically, it warrants species-level recognition.

Distribution: *T. katteri sp. nov*. is known only from the localities of the type (Muttaburra), paratype Julia Creek), Ilfracome and Belyando, all in inland north Queensland (being a straight-line distance of about 500 km between the two furthest points).

Etymology: *T. katteri sp. nov*. is named in honour of Bob Katter.

Robert Bellarmine Carl Katter is an Australian politician who has been a member of the House of Representatives since 1993. He was previously active in Queensland state politics from 1974 to 1992. Katter was a member of the National Party until 2001, when he left to sit as an independent.

He is portrayed by the government controlled and Murdoch media as a right-wing lunatic, but the reality is quite the opposite.

He is a level headed politician who advocates for what is right and what is best for honest Australians, their families and the future of this country. He has also made significant contributions to wildlife conservation in Australia, including facilitating critically important scientific fieldwork by myself in his own electorate of Kennedy in north Queensland.

This is an area which includes the biodiverse regions of the Selwyn Ranges (Mount Isa area), the dry and wet tropics of the lower Cape York, including Cairns and the Cassowary Coast and the Gulf of Carpentaria, all being areas I have worked extensively in over some decades.

Bob Katter has at times squashed the bureaucratic monsters in the Queensland National Parks and Wildlife Service (QNPWS) and forced them to comply with their own ridiculous laws to direct them to issue relevant permits to conduct herpetological research in the State of Queensland.
These permits were permits that the QNPWS were unlawfully refusing to issue.

TANTALOSCINCUS HATTONI SP. NOV.

LSIDurn:lsid:zoobank.org:act:5CFECD0D-28AC-451C-A46C-4A0A172DC542

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R45516 collected at Mutawintji National Park, New South Wales, Australia, Latitude -31.07 S., Longitude 142.55 E.

This government owned facility allows access to its holdings.

Paratype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R36883 collected from the Thargomindah to Nocatungah Road, 110 km west of Thargomindah, Queensland, Australia, Latitude

-27.72 S., Longitude 142.8 E.

Diagnosis: Until now *Tantaloscincus hattoni sp. nov*. a taxon mainly from the upper Darling River basin, in New South Wales and southern Queensland, has been treated as putative *T. strauchii* by most herpetologists in Australia.

Tantaloscincus katteri sp. nov. has also been treated as a northern population of the putative species "*Ctenotus strauchii* (Boulenger, 1887)" with a type locality of Gayndah, Queensland (east of the Great Dividing Range).

T. katteri sp. nov. is known only from the localities of the type (Muttaburra), paratype (Julia Creek), Ilfracome and Belyando, all in inland north Queensland (being a straight line distance of about 500 km between the two furthest points). It is a separate taxon from the type form of *T. strauchii* (herein confined to the east of the Great Dividing Range) and *T. hattoni sp. nov*..

The preceding trio are also separate to the other closely related taxa, named "*Ctenotus allotropis* Storr, 1981", type locality of the Round Hill Fauna Reserve, near Euabalong, New South Wales, being from western New South Wales and nearby southern Queensland away from the coast as well as "*Ctenotus strauchii varius* Storr, 1981" (herein treated as a full species based on publicly available molecular data as published by Singhal *et al.* 2017), with a type locality of Charlotte Waters in the far southeast of the Northern Territory, being a taxon from the Cooper's Creek / Lake Eyre drainage system in western Queensland, southern Northern Territory and northern South Australia.

In all these species, except *T. katteri sp. nov*., there is on each side of the body, a narrow white dorsolateral stripe from above the eye to the tail, on which it becomes wider and suffused with brown.

However, in *T. katteri sp. nov*. to the exclusion of all the other four species, instead of brown suffusions on the (original) tail, this is replaced by a series of short white oblique dashes, readily separating it from those species.

T. katteri sp. nov. is further separated from the other four species by the fact that the upper surface of the (original) tail is light as in light beige, light yellow, cream or white, versus brownish or reddish in all the other species.

The white line slightly below the midline of the lateral surface is thick in *T. katteri sp. nov*. versus thin in the other species.

T. katteri sp. nov. has 9-11 spots, pairs or clusters of orange spots along the black band of the upper flank, versus 13-19 in *T. strauchii* and *T. hattoni sp. nov.,* or 26-32 in *T. varius* or 10-15 in *T. allotropis.*

The other relevant species, formerly treated as populations of *T. strauchii* or closely allied taxa are separated from one another by the following unique combinations of characters:

T. strauchii is separated from the morphologically similar *T. hattoni sp. nov.* by the absence of a vertebral stripe or one that is not obvious and distinct; the black laterodorsal stripe is very wide (versus only moderately wide); the limbs are considerably longer and there are 20-22 subdigital lamellae under the fourth toe, versus 14-19 in *T. hattoni sp. nov.*.

All of *T. strauchii*, *T. katteri sp. nov*. and *T. hattoni sp. nov.* are defined as having prefrontals widely separated, second supraocular usually narrower than the third, ear lobules are very small, subdigital keels fine and mucronate and a body pattern that includes an obvious series of orangish spots or blotches along the black bar of the upper flank (the latter trait separating these species from the closely related *T. zebrilla* (Storr, 1981) and *T. zebrilla confusaidem subsp. nov*..).

T. varius is separated from each of *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.* and *T. allotropis* by its pale coloration, diffuse colour pattern (including the higher number of 26-32 light spots or patches on the dark upper lateral line), more numerous presuboculars (3 versus 2 in the other species) and upper labials (7-9, usually 8, versus usually 7 and rarely 8 in the other species),

supraciliaries decreasing gradually in size from first to penultimate, and ear lobules more disparate in size. *T. varius* is further separated by the sharply keeled subdigital lamellae under the fourth toe.

The closely related taxon, *T. allotropis* is separated from the preceding four species by having nasals in contact and prefrontals widely separated, and is further separated by having 17-22 lamellae under the fourth toes, each with a relatively wide blackish-brown keel (proximal keels obtuse, distal keels

fine and mucronate).

The five preceding species, being *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.*, *T. varius* and *T. allotropis* are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Pattern consists of longitudinal lines, stripes and/or series of spots, but not including obvious ocelli; nasal weakly or not grooved; 24-32 midbody scale rows; adults small (snout-vent length up to 62 cm); toes moderately or strongly compressed; tail less than twice as long as snout-vent; nasals usually forming a median suture (in contact); prefrontals widely separated (rarely close); 2-3 very short ear lobules; 16-20 subdigital

lamellae under fourth toe that are sharply keeled and mucronate; adpressed hindleg is 33-41 percent of snout-vent length and a body pattern that includes an obvious series of orangish spots or blotches along the black bar of the upper flank.

Images of the type form of *T. strauchii* in life are depicted online at:

https://www.flickr.com/photos/elliotbudd/51937727237/

and

https://www.inaturalist.org/observations/190286562

Images of *T. katteri sp. nov.* in life are depicted in Wilson (2022) on page 143 at top left and online at:

https://www.flickr.com/photos/gondwanareptileproductions/50827262947/

Images of *T. hattoni sp. nov.* in life are depicted in Swan et al. (2022) on page 145 top and online at:

https://www.flickr.com/photos/whawha88/15402116191/

Images of *T. varius* in life are depicted online at:

https://www.inaturalist.org/observations/42305418

and

https://www.inaturalist.org/observations/102389001

Images of *T. allotropis* in life are depicted in Cogger (2014) on page 482 top right, Swan et al. (2022) on page 133, Wilson and Swan (2021) on page 255 middle, Wilson (2022) on page 128 top left and online at:

https://www.flickr.com/photos/zimny_anders/30026582643/

and

https://www.flickr.com/photos/54876436@N08/29083266790/

Analysis of the relevant available sequences, indicates that *T. hattoni sp. nov*. appears to have a divergence of 2.3-2.5 MYA from its nearest relative being *T. katteri sp. nov.*. As it is also very divergent morphologically, it warrants species-level recognition.

Distribution: *T. hattoni sp. nov*. is a taxon mainly from the upper Darling River basin, in New South Wales and southern Queensland and some immediately nearby areas of similar habitat.

Etymology: *T. hattoni sp. nov*. is named in honour of John Edward Hatton (born 29 May 1933).

He was the independent member of the Legislative Assembly of the New South Wales parliament for the seat of South Coast from 1973 to 1995.

After I spoke with him numerous times about the endemic police corruption in New South Wales in the 1970's and 1980's, he agreed to push for a proper government inquiry into the NSW Police. As a lone independent, he had no power to do anything and his calls for an inquiry into the police consistently failed.

However, in 1994 when he gained the balance of power in a hung parliament, he was able to force the minority Fahey Government to establish the Wood Royal Commission into Police Corruption. This inquiry exposed the systematic entrenched corruption within the NSW Police, judiciary and public service at large. A number of police were ultimately jailed, but they represented the tip of the iceberg in a force where, as a rule, only corrupt cops were allowed to remain in the job.

In 2024, corruption in the NSW Police remains wholly systemic.

TANTALOSCINCUS ZEBRILLA CONFUSAIDEM SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:5031D555-0552-43BE-88CB-915F12F61750

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R55848 collected at Breakneck Gully, 45 km north-west of Charters Towers, north Queensland, Australia, Latitude -19.8175 S., Longitude 146.0314 E.

This government owned facility allows access to its holdings.

Diagnosis: The putative taxon "*Ctenotus zebrilla* Storr, 1981", type locality of Venture Creek, 62 km east of Croydon, Queensland, Australia, (Latitude 18.13 S., Longitude 142.49 E.) is herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984. It occurs in north Queensland generally west of the Great Dividing Range at the Burdekin dry zone and south-east of the Gulf of Carpentaria.

It has long been known to be a morphologically variable taxon.

Wilson and Swan (2021) generally only provide one photo of each species in their field guide, but chose to provide photos of two different looking specimens of *T. zebrilla* in their book.

One specimen that morphologically appeared to be most similar to *Tantaloscincus katteri sp. nov*. until now treated as *T. strauchii* (Boulenger, 1887), was found by Rabovsky *et al.* (2014) and Prates *et al*. (2022a) to be most similar genetically to *T. zebrilla.* That specimen (South Australian Museum registration number R55848) was collected at Breakneck Gully, 45 km north-west of Charters Towers, north Queensland. This is a location between the known ranges of both *T. katteri sp. nov*. and *T. zebrilla*, being to the south-west and north-west respectively.
Notwithstanding the morphological divergence of the specimen, it appears to be recently divergent of *T. zebrilla,* as in about 1 MYA or less and so it is formally described herein as a new subspecies.

T. zebrilla confusaidem subsp. nov..

Each of *T. katteri sp. nov*., *T. zebrilla* and *T. zebrilla confusaidem subsp. nov*. appear to be allopatric in distribution and with no known gene flow between populations.

T. zebrilla confusaidem subsp. nov. is separated from *T. zebrilla* by having wholly broken or absent mid-

dorsal stripes, versus intact or barely broken in *T. zebrilla* (occasionally absent in some *T.* zebrilla) as well as having distinct orange spots or blotches on the black of the upper flank, versus either non existent or only semi-distinct in *T. zebrilla.*

The upper surface of the tail in both *T. zebrilla confusaidem subsp. nov*. and *T. zebrilla* is brown, rather than beige as is seen in the closely related *T. katteri sp. nov*. (refer to that description in this paper as part of this formal description).

T. zebrilla confusaidem subsp. nov. and *T. zebrilla* are separated from the closely related and morphologically similar taxa *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.*, *T. varius* (Storr, 1981) and *T. allotropis* (Storr, 1981) by lacking an obvious series of orangeish spots or blotches along the black bar of the upper flank which those species have.

All of *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.*,, *T. varius*, *T. allotropis T. zebrilla confusaidem subsp. nov*. and *T. zebrilla* are defined as having prefrontals widely separated, second supraocular usually narrower than the third, ear lobules are very small, and subdigital keels fine and mucronate.

The six preceding species and one subspecies being *T. strauchii*, *T. katteri sp. nov*., *T. hattoni sp. nov.*, *T. varius*, *T. allotropis*, *T. zebrilla* and *T. zebrilla confusaidem subsp. nov*. are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov.* by the following unique combination of characters:

Pattern consists of longitudinal lines, stripes and/or series of spots, but not including obvious ocelli; nasal weakly or not grooved; 24-32 midbody scale rows; adults small (snout-vent length up to 62 cm); toes moderately or strongly compressed; tail less than twice as long as snout-vent; nasals usually forming a median suture (in contact); prefrontals widely separated (rarely close); 2-3 very short ear lobules; 16-20 subdigital lamellae under fourth toe that are sharply keeled and mucronate; adpressed hindleg is 33-41 percent of snout-vent length and a body pattern that may or may not include an obvious series of orangish spots or blotches along the black bar of the upper flank.

It is important to note that Storr's original 1981 description of *T. zebrilla* was based on a single specimen from the Eastern Gulf district. Attribution of specimens from the Charters Towers area, six hours drive to the east to the same subspecies level taxon by later herpetologists has clearly been in error.

Distribution: *T. zebrilla confusaidem subsp. nov*. is only known from the immediate vicinity of the type locality to the immediate north of Charters Towers, Queensland. It is likely to more widespread in the nearby eastern part of the lower Cape York. However, specimens from Greenvale, about 170 km by road north of the type locality and Porcupine Gorge about 250 km by road to the west, all conform to the type form of *T. zebrilla.* Furthermore *T. katteri sp. nov*. occupies Belyando, about 3 hours drive to the south in effect limiting the likely maximum distribution of *T. zebrilla confusaidem subsp. nov*. to well within this area.

This assumes the three taxa are allopatric.

Etymology: *T. zebrilla confusaidem subsp. nov*. is named in reflection of the taxonomic history of this subspecies. In Latin the words "*confusa idem*" means confused identification.

TANTALOSCINCUS OXYI SP. NOV.

LSIDurn:lsid:zoobank.org:act:6E6F3ED5-BC38-4B25-92B7-0F937B9600A4

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R172261 collected at the Great Victoria Desert, Western Australia, Australia, Latitude -28.353611 S., Longitude 127.540833 E.

This government owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R163448 and R163449 both collected from the Neale Junction Nature Reserve, Western Australia, Australia, Latitude -28.283333 S., Longitude 125.816667 E., 2/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R166713 collected at Tropicana Mine, Western Australia, Australia, Latitude -29.316389 S., Longitude 124.515556 E.

Diagnosis: Until now, most publishing authors have treated all of *Tantaloscincus oxyi sp. nov*., *T. crottyi sp. nov*., *T. sloppi sp. nov*., *T. pallescens* (Storr, 1970), *T. fischeri* (Boulenger, 1887), *T. fischeri yinggarda subsp. nov.* and *T. fischeri martu subsp. nov.* as populations of the pan-Australian putative species *T. schomburgkii* (Peters, 1863).

In its current concept, *T. schomburgkii* (Peters, 1863) has been placed in the genus *Ctenotus* Storr, 1964, however all the eight preceding listed taxa are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

In its current concept, *T. schomburgkii* occurs throughout arid Australia in all mainland Australian states, but is not found in the far north of the tropics as in the Kimberley district, the top end of the Northern Territory, Cape York, the east coast and pretty much all of Victoria.

A more distantly related associated species is the

recently described "*Ctenotus kutjupa* Hutchinson, Prates and Rabosky, 2022" from the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and far northwest South Australia, a taxon well recognized by herpetologists as not being *T. schomburgkii*.

The relevant nine taxa are found in the following areas: *T. schomburgkii* with a type locality of Gawler, South Australia, is effectively confined to the eastern half of South Australia and immediately adjoining parts of far north-west Victoria, New South Wales, South Australia and the Northern Territory.

The morphologically similar *T. oxyi sp. nov*. occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the coast.

T. crottyi sp. nov. occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

The closely related *T. sloppi sp. nov*. occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

North-east of the red centre and primarily on the Barkly Tableland in the Northern Territory, *T. pallescens* (Storr, 1970) occurs. It has a type locality of Morphett Creek, 7 miles south of Banka Banka, Northern Territory (Latitude 18.53 S., Longitude 134.05 E.).

In the Pilbara district generally, the species *T. fischeri* (Boulenger, 1887) occurs.

That species is split into three subspecies.

The nominate form with a type locality of Nickol Bay, Western Australia occurs in the main Pilbara region mainly south of the Fortescue River and including the Pilbara coast, north of the Fortescue River around the type locality Nickol Bay (Karratha).

T. fischeri yinggarda subsp. nov. is found south of the main Pilbara district in the dune country south of the Cape Range and inland past to Shark Bay to New Forrest Station, Murchison, Western Australia.

T. fischeri martu subsp. nov. is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally north of the Fortescue River.

The associated taxon *T. kutjupa* with a type locality of 5.3 km south southeast of the Pungkulpirri Waterhole, Western Australia (Latitude 24.4226 S., Longitude 128.4537 E) occurs in the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and northwest South Australia.

The preceding taxa treated as species are believed to have diverged from their nearest related taxon by more than 1.5 MYA, while the subspecies are believed to have diverged less than1.5 MYA.

The above-named preceding species and subspecies are separated from one another by the following relevant characteristics and combinations:

T. schomburgkii has a black back with four orangish to yellowish orange lines running longitudinally down it. It has thin, well defined sharp edged yellow dorsolateral lines. Below this a thick black lateral band running from the back of the eye and neck, along the body and above the rear leg to the tail, where it continues somewhat thinner along but for more than half the tail length (original tail). Between snout and eye, the same line is thinner and brownish in colour. Between ear and back leg on the black upper lateral line are 15-17 orange blotches (or pairs). Below this is a thin to medium, well defined white line, with sharp top and bottom borders, commencing on the upper labials and running across the ear (where it breaks) before continuing along the neck, over the front leg and along the mid lower flank, running through the hind leg and also along most of the length of the tail.

Below this is a dark zone being a combination of orange and brown and white with an uneven lower edge that meets the pale venter.

T. oxyi sp. nov. is essentially similar in most respects to *T. schomburgkii* detailed above but differs from that species by having four brownish to olive-coloured lines running longitudinally down the back. In addition, the area below the white line on the lower flank is a well-defined thick dark line, only with slight smudges of orange on the line itself, but with a sharp well defined lower edge as well as a sharp well defined upper edge.

The orange blotches running along the dark upper lateral line are squarish or irregular in shape. The head is a similar brown colour to the body, rarely showing a slight orangish or reddish tinge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. crottyi sp. nov. is quite different in overall appearance to the two preceding species. It is unusual and unique in the complex in that its dorsum is usually olive green, grey or brown all over, although sometimes with a partially or fully formed black mid vertebral stripe. The head is chocolate or reddish brown in colour grading to grey brown at the rear of the dorsum, with the (original) tail having a reddish dorsal edge. The area below the white line on the lower flank is not a well-defined thick dark line. Instead, it is a line containing black, white and usually orange and with a distinctly jagged lower edge where it meets the whitish venter.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. sloppi sp. nov. is morphologically similar to *T. oxyi sp. nov*. as described above. It is separated from that taxon by having the orange blotches running along the dark upper lateral line being circular in shape and oriented closer to the dorsolateral line, rather than down the midline of the dark upper lateral line. The head of *T. sloppi sp. nov*. is orange-red and the rear body beige-brown.

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In common with *T. oxyi sp. nov*. the area below the white line on the lower flank is a well-defined thick dark blackish coloured line, only with slight smudges of orange or any other colour on the line itself, but with a very sharp well defined lower edge as well as a sharp well defined upper edge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. fischeri of the nominate form is readily separated from all other species in this complex by having 10-12 orange blotches (or pairs).between ear and back leg on the black upper lateral line.

These blotches are reduced in size and number, with greater black interspaces between them.

In *T. fischeri* the dorsum is also effectively brown in colour. This is caused by a merging in brown of the brown longitudinal lines running down the back on either side of the black vertebral line (as in what are dark interspaces in the previous species, are in this species merely of the same colour as the lines themselves).

Between the outer of these lines is another thin black line between it and the also faded yellow dorsolateral line.

This in effect means that the dorsum is brown, but with a thin black vertebral line and two thin black lines near the lateral edges (one on either side).

Unusual for this subspecies as compared to the others in this complex, all these lines terminate abruptly on the anterior of the tail, immediately past the back legs and do not run along the length of the tail, with the black midline extending only slightly further than the other two.

In all other species and subspecies in the group, the dark midline runs a reasonable way along the upper surface of the length of the tail.

In *T. fischeri* the white line along the lower flank is straight edged top and bottom and well defined, with a straight sharp boundary both top and bottom. Below this is a relatively straight unbroken black line, with 1-3 small orangish blotches within the black.

T. fischeri yinggarda subsp. nov. is morphologically radically different to the nominate form of *T. fischeri* and were it not for the limited genetic divergence, I would not have hesitated to assign it full species status.

Colour wise it is strongly superficially reminiscent of *T. schomburgkii*, *T. oxyi sp. nov*. and *T. sloppi sp. nov*.. However, it is significantly different to all. On the dorsum there are two thin orange longitudinal lines running either side of the black vertebral line. Between these lines and the yellow laterodorsal line is a row of small but wide and irregularly shaped orange spots along the middle of the black background or line.

On the black line of the upper flank the orange spots are enlarged and square shaped, with the upper and lower edges completely intersecting squarely the white lines running longitudinally above and below. Between ear and back leg on the black upper lateral line, are 16-18 orange blotches (or pairs).

Below the lower white line on the flank is a near complete boundary of medium-sized orange, blackish and white patches, forming a series of intrusions as opposed to a jagged edge into the white of the ventral surface. Upper surfaces of head are orangish, rear of body overall is patterned but darkish in colour and upper surface of most of the tail is yellowish or beige. The lines of dark that run completely along the length of the tail in nominate *T. fischeri* are broken in *T. fischeri yinggarda subsp. nov.* with the yellow beige of the upper surfaces cutting it up. Thus, the dark markings on the lateral surfaces of the tail have a checkered appearance.

T. fischeri martu subsp. nov. is superficially most similar to the nominate form of *T. fischeri* as described above. This includes in the colour formation of the dorsum, except for the fact that the merging of the brown lines on the back is not wholly complete and there is a sliver of a black line between the wider brown areas of the longitudinal lines.

Most importantly there are between ear and back leg on the black upper lateral line, 21-23 orange blotches (or pairs), these being close together and generally small in size.

T. fischeri martu subsp. nov. has the white line along the lower flank that is curved edged both top and bottom, at least anteriorly. Below this line is a series of mainly merged black blotches which are the interface between the white line and the white underparts, meaning that they are in effect usually joined in parts, at least at the anterior part of the body. The black markings on the lower flank do not have any orange spots within them.

T. pallescens is morphologically most similar to *T. schomburgkii* but is separated from that taxon and the other preceding taxa by the following combination of characters:
Having a body colour with a brown back, with or without a pattern (a dark vertebral and modified laterodorsal stripe), but is usually nearly patternless in adults; an upper lateral zone consisting of 17 alternating dark and orange rectangular blotches, with the upper edges of the blotches squarely abutting the light dorsolateral line, but a thin black sliver between the blotches lower surfaces and the lower white lateral line; the lower white lateral line is dead straight with well-defined top and bottom edges, the bottom edge being another straight-edged line of alternating blackish and orange squares, being straight edged top and bottom where it meets the whitish undersurface; a higher average number of midbody scale-rows than all the preceding species (28-30 versus 25-30), fewer subdigital lamellae (on average), than the preceding species (being 18-22, versus 19-24); a narrow second loreal (being 1.1-1.3 times as high as wide, versus 1.4-2.5 times in the other species); distinctive white

circles on the upper surfaces of the fore and hind limbs (not seen in any of the other 8 species); on the lower flanks, below the lower white stripe are dark blackish patches with well-defined white or whitish blotches within them.

T. kutjupa is separated from all the preceding eight species by having seven narrow dark dorsal stripes, including a vertebral stripe that becomes more prominent on the (unbroken) tail and runs almost the full length of the tail in most individuals; by having prefrontals and nasals usually in strong medial contact (versus rarely so for either pair in the preceding species); lack of a strong continuation of the white midlateral stripe along the upper labials (versus continuation present in all the preceding species), instead showing a crescentic whitish marking that curves up behind the eye; and by having a dark vertebral stripe that becomes more prominent on the tail and continues for almost all of its length in most individuals (versus a vertebral stripe that fades out on the tail and terminates at

about the halfway point or earlier in the other species).

The preceding nine taxa, being *T. schomburgkii*, *T. oxyi sp. nov*., *T. crottyi sp. nov*., *T. sloppi sp. nov*., *T. pallescens*, *T. fischeri*, *T. fischeri yinggarda subsp. nov.*, *T. fischeri martu subsp. nov.* and *T. kutjupa*, are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Dorsal pattern is not ocellate; back is black with 4 reddish or greenish white longitudinal lines that are bold, sharp edged and well-developed; or alternatively brownish with a black vertebral line (in *C. crottyi sp. nov*.); head and neck not bold red; black upper lateral zone encloses a series of pale reddish spots; 2 presuboculars: prefrontals usually separated; nasals separated; nasal is weakly or not grooved; toes strongly compressed; subdigital lamellae with a fine sharp keel ending in a mucron or short spine; head relatively low and snout long and narrow; hindleg more than 40 percent of snout vent; size small (snout-vent length is up to 50 mm).

T. schomburgkii is depicted in life in Cogger (2014) on page 520 at bottom, Swan *et al*. (2022) page 14 at top, Wilson and Swan (2021) on page 297 middle right and online at:

https://www.flickr.com/photos/95482238@N02/23749637701/

and

https://www.flickr.com/photos/jayceebarnes/50635735947/

and

https://www.flickr.com/photos/189037423@N06/51013050468/

T. oxyi sp. nov. is depicted in life in Wilson and Knowles (1988) on page 273 bottom left and online at:

https://www.inaturalist.org/observations/144968830

T. pallescens is depicted in life in Wilson and Swan (2021) on page 287 bottom and online at:

https://www.flickr.com/photos/zimny_anders/51194840824/

T. crottyi sp. nov. is depicted in life in Storr *et al.* (1981) in plate 9 second from top on left, Wilson and Knowles (1988) page 273 middle right and online at:
https://www.inaturalist.org/observations/98964672

and
https://www.inaturalist.org/observations/46690895
and

https://www.inaturalist.org/observations/103303441

and
https://www.flickr.com/photos/stephenmahony/49676549367/

and

https://www.inaturalist.org/observations/192033048

T. sloppi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/153623890

T. fischeri of the type form subspecies is depicted online at:

https://www.flickr.com/photos/reptileshots/53208619121/

and
https://www.flickr.com/photos/58349528@N02/53195952153/

T. fischeri yinggarda subsp. nov. is depicted in life in Storr (1981) plate 9, photo 1, top left and online at:

https://www.flickr.com/photos/moloch05/53376714598/

T. fischeri martu subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/jaricornelis/51772802322/

T. kutjupa is depicted in life in Prates *et al*. (2022a) on page 12, photos A and B and online at:

https://www.flickr.com/photos/ingirumimusnocte/albums/72157647583792509/

and

https://www.flickr.com/photos/ingirumimusnocte/15324070396/

Distribution: *T. oxyi sp. nov.* occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the southern coast.

Etymology: *T. oxyi sp. nov.* is named in honour of a Great Dane dog named "*Oxyuranus*" or "*Oxy*" that our family owned for 8 and a half years before he died of age-related heart disease. He guarded our wildlife breeding and research facility against numerous attempts to steal animals and materials. His loyalty is herein recognised. It is objectionable that serial animal abusers like Mark O'Shea (a UK reptile fancier) and his troll mate Darren Naish (from Southampton in the UK), find it improper for an animal to be honoured as a patronym for a scientific name. It is even more objectionable that Mark O'Shea and Darren Naish plaster the internet with hate and vitriol about this.

TANTALOSCINCUS CROTTYI SP. NOV.

LSIDurn:lsid:zoobank.org:act:5B2B04DD-5745-4518-B59A-309D6CA2AEA0

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R145348 collected from Goongarrie station, Western Australia, Australia, Latitude -29.920833 S., Longitude 121.147778 E.

This government owned facility allows access to its holdings.

Paratypes: Six preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, being: 1/ Specimen numbers R126391 and R126395 both collected from Bungalbin Sandplain, Western Australia, Australia, Latitude -30.253611 S., Longitude 119.79 E., 2/ Specimen number R172435 collected from Credo Station, Western Australia, Australia, Latitude -30.4325 S., Longitude 120.6375 E., 3/ Specimen number R145278 collected from 10 km northwest of Broad Arrow, Western Australia, Australia, Latitude -30.426389 S., Longitude 121.260278 E., 4/ Specimen number R165892 collected from 40.3 km northeast of Holt Rock, Western Australia, Australia, Latitude -32.411111 S., Longitude 119.695278 E., 5/ Specimen number R167495, being an adult male collected at 40.2 km north-west of Lake Way, Western Australia, Australia, Latitude -27.241944 S., Longitude 120.697778 E.

Diagnosis: Until now, most publishing authors have treated all of *Tantaloscincus oxyi sp. nov.*, *T. crottyi sp. nov.*, *T. oxyi sp. nov.*, *T. pallescens* (Storr, 1970), *T. fischeri* (Boulenger, 1887), *H. fischeri yinggarda subsp. nov.* and *H. fischeri martu subsp. nov.* as populations of the pan-Australian putative species *T. schomburgkii* (Peters, 1863).

In its current concept, *T. schomburgkii* (Peters, 1863) has been placed in the genus *Ctenotus* Storr, 1964, however all the eight preceding listed taxa are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

In its current concept, *T. schomburgkii* occurs throughout arid Australia in all mainland Australian states, but is not found in the far north of the tropics as in the Kimberley district, the top end of the Northern Territory, Cape York, the east coast and pretty much all of Victoria.

A more distantly related associated species is the recently described "*Ctenotus kutjupa* Hutchinson, Prates and Rabosky, 2022" from the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and far northwest South Australia, a taxon well recognized by herpetologists as not being *T. schomburgkii*.

The relevant nine taxa are found in the following areas: *T. schomburgkii* with a type locality of Gawler, South Australia, is effectively confined to the eastern half of South Australia and immediately adjoining parts of far north-west Victoria, New South Wales, South Australia and the Northern Territory.

The morphologically similar *T. oxyi sp. nov*. occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the coast.

T. crottyi sp. nov. occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

The closely related *T. sloppi sp. nov*. occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

North-east of the red centre and primarily on the Barkly Tableland in the Northern Territory, *T. pallescens* (Storr, 1970) occurs. It has a type locality of Morphett Creek, 7 miles south of Banka Banka, Northern Territory (Latitude 18.53 S., Longitude 134.05 E.).

In the Pilbara district generally, the species *T. fischeri* (Boulenger, 1887) occurs.

That species is split into three subspecies.

The nominate form with a type locality of Nickol Bay, Western Australia occurs in the main Pilbara region mainly south of the Fortescue River and including the Pilbara coast, north of the Fortescue River around the type locality Nickol Bay (Karratha).

T. fischeri yinggarda subsp. nov. is found south of the main Pilbara district in the dune country south of the Cape Range and inland past to Shark Bay to New Forrest Station, Murchison, Western Australia.

T. fischeri martu subsp. nov. is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally north of the Fortescue River.

The associated taxon *T. kutjupa* with a type locality of 5.3 km south southeast of the Pungkulpirri Waterhole, Western Australia (Latitude 24.4226 S., Longitude 128.4537 E) occurs in the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and northwest South Australia.

The preceding taxa treated as species are believed to have diverged from their nearest related taxon by more than 1.5 MYA, while the subspecies are believed to have diverged less than1.5 MYA.

The above-named preceding species and subspecies are separated from one another by the following relevant characteristics and combinations:

T. schomburgkii has a black back with four orangish to yellowish orange lines running longitudinally down it. It has thin, well defined sharp edged yellow dorsolateral lines. Below this a thick black lateral band running from the back of the eye and neck, along the body and above the rear leg to the tail, where it continues somewhat thinner along but for more than half the tail length (original tail). Between snout and eye, the same line is thinner and brownish in colour. Between ear and back leg on the black upper lateral line are 15-17 orange blotches (or pairs). Below this is a thin to medium, well defined white line, with sharp top and bottom borders, commencing on the upper labials and running across the ear (where it breaks) before continuing along the neck, over the front leg and along the mid lower flank, running through the hind leg and also along most of the length of the tail.

Below this is a dark zone being a combination of orange and brown and white with an uneven lower edge that meets the pale venter.

T. oxyi sp. nov. is essentially similar in most respects to *T. schomburgkii* detailed above, but differs from that species by having four brownish to olive coloured lines running longitudinally down the back. In addition, the area below the white line on the lower flank is a well-defined thick dark line, only with slight smudges of orange on the line itself, but with a sharp well defined lower edge as well as a sharp well defined upper edge.

The orange blotches running along the dark upper lateral line are squarish or irregular in shape. The head is a similar brown colour to the body, rarely showing a slight orangish or reddish tinge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. crottyi sp. nov. is quite different in overall appearance to the two preceding species. It is unusual and unique in the complex in that its dorsum is usually olive green, grey or brown all over, although sometimes with a partially or fully formed black mid vertebral stripe. The head is chocolate or reddish brown in colour grading to grey brown at the rear of the dorsum, with the (original) tail having a reddish dorsal edge. The area below the white line on the lower flank is not a well-defined thick dark line. Instead, it is a line containing black, white and usually orange and with a distinctly jagged lower edge where it meets the whitish venter.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. sloppi sp. nov. is morphologically similar to *T. oxyi sp. nov*. as described above. It is separated from that taxon by having the orange blotches running along the dark upper lateral line being circular in shape and oriented closer to the dorsolateral line, rather than down the midline of the dark upper lateral line. The head of *T. sloppi sp. nov*. is orange-red and the rear body beige-brown.

In common with *T. oxyi sp. nov*. the area below the white line on the lower flank is a well-defined thick dark blackish coloured line, only with slight smudges of orange or any other colour on the line itself, but with a very sharp well defined lower edge as well as a sharp well defined upper edge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. fischeri of the nominate form is readily separated from all other species in this complex by having 10-12 orange blotches (or pairs).between ear and back leg on the black upper lateral line.

These blotches are reduced in size and number, with greater black interspaces between them.

In *T. fischeri* the dorsum is also effectively brown in colour. This is caused by a merging in brown of the brown longitudinal lines running down the back on either side of the black vertebral line (as in what are dark interspaces in the previous species, are in this species merely of the same colour as the lines themselves).

Between the outer of these lines is another thin black line between it and the also faded yellow dorsolateral line.

This in effect means that the dorsum is brown, but with a thin black vertebral line and two thin black lines near the lateral edges (one on either side).

Unusual for this subspecies as compared to the others in this complex, all these lines terminate abruptly on the anterior of the tail, immediately past the back legs and do not run along the length of the tail, with the black midline extending only slightly further than the other two.

In all other species and subspecies in the group, the dark midline runs a reasonable way along the upper surface of the length of the tail.

In *T. fischeri* the white line along the lower flank is straight edged top and bottom and well defined, with a straight sharp boundary both top and bottom. Below this is a relatively straight unbroken black line, with 1-3 small orangish blotches within the black.

T. fischeri yinggarda subsp. nov. is morphologically radically different to the nominate form of *T. fischeri* and were it not for the limited genetic divergence, I would not have hesitated to assign it full species status.

Colour wise it is strongly superficially reminiscent of *T. schomburgkii*, *T. oxyi sp. nov*. and *T. sloppi sp. nov*.. However, it is significantly different to all. On the dorsum there are two thin orange longitudinal lines running either side of the black vertebral line. Between these lines and the yellow laterodorsal line is a row of small but wide and irregularly shaped orange spots along the middle of the black background or line.

On the black line of the upper flank the orange spots

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are enlarged and square shaped, with the upper and lower edges completely intersecting squarely the white lines running longitudinally above and below. Between ear and back leg on the black upper lateral line, are 16-18 orange blotches (or pairs).

Below the lower white line on the flank is a near complete boundary of medium-sized orange, blackish and white patches, forming a series of intrusions as opposed to a jagged edge into the white of the ventral surface. Upper surfaces of head are orangish, rear of body overall is patterned but darkish in colour and upper surface of most of the tail is yellowish or beige. The lines of dark that run completely along the length of the tail in nominate *T. fischeri* are broken in *T. fischeri yinggarda subsp. nov.* with the yellow beige of the upper surfaces cutting it up. Thus, the dark markings on the lateral surfaces of the tail have a checkered appearance.

T. fischeri martu subsp. nov. is superficially most similar to the nominate form of *T. fischeri* as described above. This includes in the colour formation of the dorsum, except for the fact that the merging of the brown lines on the back is not wholly complete and there is a sliver of a black line between the wider brown areas of the longitudinal lines.

Most importantly there are between ear and back leg on the black upper lateral line, 21-23 orange blotches (or pairs), these being close together and generally small in size.

T. fischeri martu subsp. nov. has the white line along the lower flank that is curved edged both top and bottom, at least anteriorly. Below this line is a series of mainly merged black blotches which are the interface between the white line and the white underparts, meaning that they are in effect usually joined in parts, at least at the anterior part of the body. The black markings on the lower flank do not have any orange spots within them.

T. pallescens is morphologically most similar to *T. schomburgkii* but is separated from that taxon and the other preceding taxa by the following combination of characters:
Having a body colour with a brown back, with or without a pattern (a dark vertebral and modified laterodorsal stripe), but is usually nearly patternless in adults; an upper lateral zone consisting of 17 alternating dark and orange rectangular blotches, with the upper edges of the blotches squarely abutting the light dorsolateral line, but a thin black sliver between the blotches lower surfaces and the lower white lateral line; the lower white lateral line is dead straight with well-defined top and bottom edges, the bottom edge being another straight-edged line of alternating blackish and orange squares, being straight edged top and bottom where it meets the whitish undersurface; a higher average number of midbody scale-rows than all the preceding species (28-30 versus 25-30), fewer subdigital lamellae (on average), than the preceding species (being 18-22, versus 19-24); a narrow second loreal (being 1.1-1.3 times as high as wide, versus 1.4-2.5 times in the other species); distinctive white circles on the upper surfaces of the fore and hind limbs (not seen in any of the other 8 species); on the lower flanks, below the lower white stripe are dark blackish patches with well-defined white or whitish blotches within them.
T. kutjupa is separated from all the preceding eight species by having seven narrow dark dorsal stripes, including a vertebral stripe that becomes more prominent on the (unbroken) tail and runs almost the full length of the tail in most individuals; by having prefrontals and nasals usually in strong medial contact (versus rarely so for either pair in the preceding species); lack of a strong continuation of the white midlateral stripe along the upper labials (versus continuation present in all the preceding species), instead showing a crescentic whitish marking that curves up behind the eye; and by having a dark vertebral stripe that becomes more prominent on the tail and continues for almost all of its length in most individuals (versus a vertebral stripe that fades out on the tail and terminates at

about the halfway point or earlier in the other species).

The preceding nine taxa, being *T. schomburgkii*, *T. oxyi sp. nov.*, *T. crottyi sp. nov.*, *T. sloppi sp. nov.*, *T. pallescens*, *T. fischeri*, *T. fischeri yinggarda subsp. nov.*, *T. fischeri martu subsp. nov.* and *T. kutjupa*, are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Dorsal pattern is not ocellate; back is black with 4 reddish or greenish white longitudinal lines that are bold, sharp edged and well-developed; or alternatively brownish with a black vertebral line (in *C. crottyi sp. nov*.); head and neck not bold red; black upper lateral zone encloses a series of pale reddish spots; 2 presuboculars: prefrontals usually separated; nasals separated; nasal is weakly or not grooved; toes strongly compressed; subdigital lamellae with a fine sharp keel ending in a mucron or short spine; head relatively low and snout long and narrow; hindleg more than 40 percent of snout vent; size small (snout-vent length is up to 50 mm).

T. schomburgkii is depicted in life in Cogger (2014) on page 520 at bottom, Swan *et al*. (2022) page 14 at top, Wilson and Swan (2021) on page 297 middle right and online at:

https://www.flickr.com/photos/95482238@N02/23749637701/

and

https://www.flickr.com/photos/jayceebarnes/50635735947/

and

https://www.flickr.com/photos/189037423@N06/51013050468/

T. oxyi sp. nov. is depicted in life in Wilson and Knowles (1988) on page 273 bottom left and online at:

https://www.inaturalist.org/observations/144968830

T. pallescens is depicted in life in Wilson and Swan (2021) on page 287 bottom and online at:

https://www.flickr.com/photos/zimny_anders/51194840824/

T. crottyi sp. nov. is depicted in life in Storr *et al.* (1981) in plate 9 second from top on left, Wilson and Knowles (1988) page 273 middle right and online at:
https://www.inaturalist.org/observations/98964672

and
https://www.inaturalist.org/observations/46690895
and

https://www.inaturalist.org/observations/103303441

and
https://www.flickr.com/photos/stephenmahony/49676549367/

and

https://www.inaturalist.org/observations/192033048

T. sloppi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/153623890

T. fischeri of the type form subspecies is depicted online at:

https://www.flickr.com/photos/reptileshots/53208619121/

and
https://www.flickr.com/photos/58349528@N02/53195952153/

T. fischeri yinggarda subsp. nov. is depicted in life in Storr (1981) plate 9, photo 1, top left and online at:

https://www.flickr.com/photos/moloch05/53376714598/

T. fischeri martu subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/jaricornelis/51772802322/

T. kutjupa is depicted in life in Prates *et al.* (2022a) on page 12, photos A and B and online at:

https://www.flickr.com/photos/ingirumimusnocte/albums/72157647583792509/

and

https://www.flickr.com/photos/ingirumimusnocte/15324070396/

Distribution: *T. crottyi sp. nov.* occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

Etymology: *T. crottyi sp. nov.* is named in honour of a Great Dane cross Rottweiller dog named "*Crotalus*" AKA "*Crotty*" that our family owned for nearly 13 years before he died of age-related heart disease. He guarded our wildlife breeding and research facility against numerous attempts to steal animals and research materials. His loyalty is herein recognised. It is objectionable that serial animal abusers like Mark O'Shea (a UK reptile fancier) and his troll mate Darren Naish (from Southampton in the UK), find it improper for an animal to be honoured as a patronym for a scientific name. It is even more objectionable that Mark O'Shea and Darren Naish plaster the internet with hate and vitriol about this.

TANTALOSCINCUS SLOPPI SP. NOV.

LSIDurn:lsid:zoobank.org:act:5DDD18C6-7F63-466C-AB66-EEC95CFA1D56

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R157443 collected from the Tanami Desert in Western Australia, Australia, Latitude -19.593333 S., Longitude 128.861111 E.

This government owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.26942 collected from 30 miles north northwest of the Granites, Tanami Desert, Northern Territory, Australia, Latitude -20.15 S., Longitude 130.25 E, 2/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R24407 collected from 27 km south of Ti Tree, Northern Territory, Australia, Latitude -22.366667 S., Longitude 133.383333 E.

Diagnosis: Until now, most publishing authors have treated all of *Tantaloscincus oxyi sp. nov.*, *T. crottyi sp. nov.*, *T. oxyi sp. nov.*, *T. pallescens* (Storr, 1970), *T. fischeri* (Boulenger, 1887), *H. fischeri yinggarda subsp. nov.* and *H. fischeri martu subsp. nov.* as populations of the pan-Australian putative species *T. schomburgkii* (Peters, 1863).

In its current concept, *T. schomburgkii* (Peters, 1863) has been placed in the genus *Ctenotus* Storr, 1964, however all the eight preceding listed taxa are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

In its current concept, *T. schomburgkii* occurs throughout arid Australia in all mainland Australian states, but is not found in the far north of the tropics as in the Kimberley district, the top end of the Northern Territory, Cape York, the east coast and pretty much all of Victoria.

A more distantly related associated species is the recently described "*Ctenotus kutjupa* Hutchinson, Prates and Rabosky, 2022" from the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and far northwest South Australia, a taxon well recognized by herpetologists as not being

T. schomburgkii.

The relevant nine taxa are found in the following areas: *T. schomburgkii* with a type locality of Gawler, South Australia, is effectively confined to the eastern half of South Australia and immediately adjoining parts of far north-west Victoria, New South Wales, South Australia and the Northern Territory.

The morphologically similar *T. oxyi sp. nov*. occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the coast.

T. crottyi sp. nov. occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

The closely related *T. sloppi sp. nov*. occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

North-east of the red centre and primarily on the Barkly Tableland in the Northern Territory, *T. pallescens* (Storr, 1970) occurs. It has a type locality of Morphett Creek, 7 miles south of Banka Banka, Northern Territory (Latitude 18.53 S., Longitude 134.05 E.).

In the Pilbara district generally, the species *T. fischeri* (Boulenger, 1887) occurs.

That species is split into three subspecies.

The nominate form with a type locality of Nickol Bay, Western Australia occurs in the main Pilbara region mainly south of the Fortescue River and including the Pilbara coast, north of the Fortescue River around the type locality Nickol Bay (Karratha).

T. fischeri yinggarda subsp. nov. is found south of the main Pilbara district in the dune country south of the Cape Range and inland past to Shark Bay to New Forrest Station, Murchison, Western Australia.

T. fischeri martu subsp. nov. is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally north of the Fortescue River.

The associated taxon *T. kutjupa* with a type locality of 5.3 km south southeast of the Pungkulpirri Waterhole, Western Australia (Latitude 24.4226 S., Longitude 128.4537 E) occurs in the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and northwest South Australia.

The preceding taxa treated as species are believed to have diverged from their nearest related taxon by more than 1.5 MYA, while the subspecies are believed to have diverged less than1.5 MYA.

The above-named preceding species and subspecies are separated from one another by the following relevant characteristics and combinations:

T. schomburgkii has a black back with four orangish to yellowish orange lines running longitudinally down it. It has thin, well defined sharp edged yellow dorsolateral lines. Below this a thick black lateral band running from the back of the eye and neck, along the body and above the rear leg to the tail, where it continues somewhat thinner along but for more than half the tail length (original tail). Between snout and eye, the same line is thinner and brownish in colour. Between ear and back leg on the black upper lateral line are 15-17 orange blotches (or pairs). Below this is a thin to medium, well defined white line, with sharp top and bottom borders, commencing on the upper labials and running across the ear (where it breaks) before continuing along the neck, over the front leg and along the mid lower flank, running through the hind leg and also along most of the length of the tail.

Below this is a dark zone being a combination of orange and brown and white with an uneven lower edge that meets the pale venter.

T. oxyi sp. nov. is essentially similar in most respects to *T. schomburgkii* detailed above but differs from that species by having four brownish to olive-coloured lines running longitudinally down the back. In addition, the area below the white line on the lower flank is a well-defined thick dark line, only with slight smudges of orange on the line itself, but with a sharp well defined lower edge as well as a sharp well defined upper edge.

The orange blotches running along the dark upper lateral line are squarish or irregular in shape. The head is a similar brown colour to the body, rarely showing a slight orangish or reddish tinge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. crottyi sp. nov. is quite different in overall appearance to the two preceding species. It is unusual and unique in the complex in that its dorsum is usually olive green, grey or brown all over, although sometimes with a partially or fully formed black mid vertebral stripe. The head is chocolate or reddish brown in colour grading to grey-brown at the rear of the dorsum, with the (original) tail having a reddish dorsal edge. The area below the white line on the lower flank is not a well-defined thick dark line. Instead, it is a line containing black, white and usually orange and with a distinctly jagged lower edge where it meets the whitish venter.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. sloppi sp. nov. is morphologically similar to *T. oxyi sp. nov*. as described above. It is separated from that taxon by having the orange blotches running along the dark upper lateral line being circular in shape and oriented closer to the dorsolateral line, rather than down the midline of the dark upper lateral line. The head of *T. sloppi sp. nov*. is orange-red and the rear body beige-brown.

In common with *T. oxyi sp. nov*. the area below the white line on the lower flank is a well-defined thick dark blackish coloured line, only with slight smudges of orange or any other colour on the line itself, but with a very sharp well defined lower edge as well as a sharp

well defined upper edge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. fischeri of the nominate form is readily separated from all other species in this complex by having 10-12 orange blotches (or pairs) between ear and back leg on the black upper lateral line.

These blotches are reduced in size and number, with greater black interspaces between them.

In *T. fischeri* the dorsum is also effectively brown in colour. This is caused by a merging in brown of the brown longitudinal lines running down the back on either side of the black vertebral line (as in what are dark interspaces in the previous species, are in this species merely of the same colour as the lines themselves).

Between the outer of these lines is another thin black line between it and the also faded yellow dorsolateral line.

This in effect means that the dorsum is brown, but with a thin black vertebral line and two thin black lines near the lateral edges (one on either side).

Unusual for this subspecies as compared to the others in this complex, all these lines terminate abruptly on the anterior of the tail, immediately past the back legs and do not run along the length of the tail, with the black midline extending only slightly further than the other two.

In all other species and subspecies in the group, the dark midline runs a reasonable way along the upper surface of the length of the tail.

In *T. fischeri* the white line along the lower flank is straight edged top and bottom and well defined, with a straight sharp boundary both top and bottom. Below this is a relatively straight unbroken black line, with 1-3 small orangish blotches within the black.

T. fischeri yinggarda subsp. nov. is morphologically radically different to the nominate form of *T. fischeri* and were it not for the limited genetic divergence, I would not have hesitated to assign it full species status.

Colour wise it is strongly superficially reminiscent of *T. schomburgkii*, *T. oxyi sp. nov*. and *T. sloppi sp. nov*.. However, it is significantly different to all. On the dorsum there are two thin orange longitudinal lines running either side of the black vertebral line. Between these lines and the yellow laterodorsal line is a row of small but wide and irregularly shaped orange spots along the middle of the black background or line.

On the black line of the upper flank the orange spots are enlarged and square shaped, with the upper and lower edges completely intersecting squarely the white lines running longitudinally above and below. Between ear and back leg on the black upper lateral line, are 16-18 orange blotches (or pairs).

Below the lower white line on the flank is a near complete boundary of medium-sized orange, blackish and white patches, forming a series of intrusions as opposed to a jagged edge into the white of the ventral surface. Upper surfaces of head are orangish, rear of body overall is patterned but darkish in colour and upper surface of most of the tail is yellowish or beige. The lines of dark that run completely along the length of the tail in nominate *T. fischeri* are broken in *T. fischeri yinggarda subsp. nov.* with the yellow beige of the upper surfaces cutting it up. Thus, the dark markings on the lateral surfaces of the tail have a checkered appearance.

T. fischeri martu subsp. nov. is superficially most similar to the nominate form of *T. fischeri* as described above. This includes in the colour formation of the dorsum, except for the fact that the merging of the brown lines on the back is not wholly complete and there is a sliver of a black line between the wider brown areas of the longitudinal lines.

Most importantly there are between ear and back leg on the black upper lateral line, 21-23 orange blotches (or pairs), these being close together and generally small in size.

T. fischeri martu subsp. nov. has the white line along the lower flank that is curved edged both top and bottom, at least anteriorly. Below this line is a series of mainly merged black blotches which are the interface between the white line and the white underparts, meaning that they are in effect usually joined in parts, at least at the anterior part of the body. The black markings on the lower flank do not have any orange spots within them.

T. pallescens is morphologically most similar to *T. schomburgkii* but is separated from that taxon and the other preceding taxa by the following combination of characters:
Having a body colour with a brown back, with or without a pattern (a dark vertebral and modified laterodorsal stripe), but is usually nearly patternless in adults; an upper lateral zone consisting of 17 alternating dark and orange rectangular blotches, with the upper edges of the blotches squarely abutting the light dorsolateral line, but a thin black sliver between the blotches lower surfaces and the lower white lateral line; the lower white lateral line is dead straight with well-defined top and bottom edges, the bottom edge being another straight-edged line of alternating blackish and orange squares, being straight edged top and bottom where it meets the whitish undersurface; a higher average number of midbody scale-rows than all the preceding species (28-30 versus 25-30), fewer subdigital lamellae (on average), than the preceding species (being 18-22, versus 19-24); a narrow second loreal (being 1.1-1.3 times as high as wide, versus 1.4-2.5 times in the other species); distinctive white circles on the upper surfaces of the fore and hind limbs (not seen in any of the other 8 species); on the lower flanks, below the lower white stripe are dark blackish patches with well-defined white or whitish blotches within them.

T. kutjupa is separated from all the preceding eight species by having seven narrow dark dorsal stripes, including a vertebral stripe that becomes more prominent on the (unbroken) tail and runs almost the full length of the tail in most individuals; by having prefrontals and nasals usually in strong medial contact (versus rarely so for either pair in the preceding species); lack of a strong continuation of the white midlateral stripe along the upper labials (versus continuation present in all the preceding species), instead showing a crescentic whitish marking that curves up behind the eye; and by having a dark vertebral stripe that becomes more prominent on the tail and continues for almost all of its length in most individuals (versus a vertebral stripe that fades out on the tail and terminates at

about the halfway point or earlier in the other species).

The preceding nine taxa, being *T. schomburgkii*, *T. oxyi sp. nov*., *T. crottyi sp. nov*., *T. sloppi sp. nov*., *T. pallescens*, *T. fischeri*, *T. fischeri yinggarda subsp. nov.*, *T. fischeri martu subsp. nov.* and *T. kutjupa*, are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. with a type species of *Matherus matheri sp. nov*. by the following unique combination of characters:

Dorsal pattern is not ocellate; back is black with 4 reddish or greenish white longitudinal lines that are bold, sharp edged and well-developed; or alternatively brownish with a black vertebral line (in *C. crottyi sp. nov*.); head and neck not bold red; black upper lateral zone encloses a series of pale reddish spots; 2 presuboculars: prefrontals usually separated; nasals separated; nasal is weakly or not grooved; toes strongly compressed; subdigital lamellae with a fine sharp keel ending in a mucron or short spine; head relatively low and snout long and narrow; hindleg more than 40 percent of snout vent; size small (snout-vent length is up to 50 mm).

T. schomburgkii is depicted in life in Cogger (2014) on page 520 at bottom, Swan *et al*. (2022) page 14 at top, Wilson and Swan (2021) on page 297 middle right and online at:

https://www.flickr.com/photos/95482238@N02/23749637701/

and

https://www.flickr.com/photos/jayceebarnes/50635735947/

and

https://www.flickr.com/photos/189037423@N06/51013050468/

T. oxyi sp. nov. is depicted in life in Wilson and Knowles (1988) on page 273 bottom left and online at:

https://www.inaturalist.org/observations/144968830

T. pallescens is depicted in life in Wilson and Swan (2021) on page 287 bottom and online at:

https://www.flickr.com/photos/zimny_anders/51194840824/

T. crottyi sp. nov. is depicted in life in Storr *et al.* (1981) in plate 9 second from top on left, Wilson and Knowles (1988) page 273 middle right and online at:
https://www.inaturalist.org/observations/98964672

and
https://www.inaturalist.org/observations/46690895
and

https://www.inaturalist.org/observations/103303441

and
https://www.flickr.com/photos/stephenmahony/49676549367/

and

https://www.inaturalist.org/observations/192033048

T. sloppi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/153623890

T. fischeri of the type form subspecies is depicted online at:

https://www.flickr.com/photos/reptileshots/53208619121/

and
https://www.flickr.com/photos/58349528@N02/53195952153/

T. fischeri yinggarda subsp. nov. is depicted in life in Storr (1981) plate 9, photo 1, top left and online at:

https://www.flickr.com/photos/moloch05/53376714598/

T. fischeri martu subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/jaricornelis/51772802322/

T. kutjupa is depicted in life in Prates *et al.* (2022a) on page 12, photos A and B and online at:

https://www.flickr.com/photos/ingirumimusnocte/albums/72157647583792509/

and

https://www.flickr.com/photos/ingirumimusnocte/15324070396/

Distribution: *T. sloppi sp. nov.* occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

Etymology: *T. sloppi sp. nov.* is named in honour of a Great Dane dog named “Slop” or “Slopp” that our family owned for 12 years before he died of age-related cancer in mid-2013. He guarded our wildlife breeding and research facility against numerous attempts to steal animals and research materials. His loyalty is herein recognised. It is objectionable

that serial animal abusers like Mark O'Shea (a UK reptile fancier) and his troll mate Darren Naish (from Southampton in the UK) find it improper for an animal to be honoured as a patronym for a scientific name. It is even more objectionable that Mark O'Shea and Darren Naish plasters the internet with hate and vitriol about this.

TANTALOSCINCUS FISCHERI YINGGARDA SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:95161733-5582-4EAD-8114-6B52BAE3C6DA

Holotype: A preserved adult female specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R122899 collected 10 km east southeast of Mardathuna Homestead, Western Australia, Australia, Latitude -24.511389 S., Longitude 114.636667 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R158345 and R158353 both collected from Giralia Station, Western Australia, Australia, Latitude -22.763889 S., Longitude 114.273056 E.

Diagnosis: Until now, most publishing authors have treated all of *Tantaloscincus oxyi sp. nov*., *T. crottyi sp. nov*., *T. oxyi sp. nov*., *T. pallescens* (Storr, 1970), *T. fischeri* (Boulenger, 1887), *H. fischeri yinggarda subsp. nov.* and *H. fischeri martu subsp. nov.* as populations of the pan-Australian putative species *T. schomburgkii* (Peters, 1863).

In its current concept, *T. schomburgkii* (Peters, 1863) has been placed in the genus *Ctenotus* Storr, 1964, however all the eight preceding listed taxa are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

In its current concept, *T. schomburgkii* occurs throughout arid Australia in all mainland Australian states, but is not found in the far north of the tropics as in the Kimberley district, the top end of the Northern Territory, Cape York, the east coast and pretty much all of Victoria.

A more distantly related associated species is the recently described "*Ctenotus kutjupa* Hutchinson, Prates and Rabosky, 2022" from the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and far northwest South Australia, a taxon well recognized by herpetologists as not being *T. schomburgkii*.

The relevant nine taxa are found in the following areas: *T. schomburgkii* with a type locality of Gawler, South Australia, is effectively confined to the eastern half of South Australia and immediately adjoining parts of far north-west Victoria, New South Wales, South Australia and the Northern Territory.

The morphologically similar *T. oxyi sp. nov*. occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the coast.

T. crottyi sp. nov. occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

The closely related *T. sloppi sp. nov*. occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

North-east of the red centre and primarily on the Barkly Tableland in the Northern Territory, *T. pallescens* (Storr, 1970) occurs. It has a type locality of Morphett Creek, 7 miles south of Banka Banka, Northern Territory (Latitude 18.53 S., Longitude 134.05 E.).

In the Pilbara district generally, the species *T. fischeri* (Boulenger, 1887) occurs.

That species is split into three subspecies.

The nominate form with a type locality of Nickol Bay, Western Australia occurs in the main Pilbara region mainly south of the Fortescue River and including the Pilbara coast, north of the Fortescue River around the type locality Nickol Bay (Karratha).

T. fischeri yinggarda subsp. nov. is found south of the main Pilbara district in the dune country south of the Cape Range and including that peninsula and inland to near Shark Bay to New Forrest Station, Murchison, Western Australia.

T. fischeri martu subsp. nov. is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally north of the Fortescue River.

The associated taxon *T. kutjupa* with a type locality of 5.3 km south southeast of the Pungkulpirri Waterhole, Western Australia (Latitude 24.4226 S., Longitude 128.4537 E) occurs in the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and northwest South Australia.

The preceding taxa treated as species are believed to have diverged from their nearest related taxon by more than 1.5 MYA, while the subspecies are believed to have diverged less than1.5 MYA.

The above-named preceding species and subspecies are separated from one another by the following relevant characteristics and combinations:

T. schomburgkii has a black back with four orangish to yellowish orange lines running longitudinally down it. It has thin, well defined sharp edged yellow dorsolateral lines. Below this a thick black lateral band running from the back of the eye and neck, along the body and above the rear leg to the tail, where it continues somewhat thinner along but for more than half the tail length (original tail). Between snout and eye, the same line is thinner and brownish in colour. Between ear and back leg on the black upper lateral line are 15-17 orange blotches (or pairs). Below this is a thin

to medium, well defined white line, with sharp top and bottom borders, commencing on the upper labials and running across the ear (where it breaks) before continuing along the neck, over the front leg and along the mid lower flank, running through the hind leg and also along most of the length of the tail.

Below this is a dark zone being a combination of orange and brown and white with an uneven lower edge that meets the pale venter.

T. oxyi sp. nov. is essentially similar in most respects to *T. schomburgkii* detailed above but differs from that species by having four brownish to olive-coloured lines running longitudinally down the back. In addition, the area below the white line on the lower flank is a well-defined thick dark line, only with slight smudges of orange on the line itself, but with a sharp well defined lower edge as well as a sharp well defined upper edge.

The orange blotches running along the dark upper lateral line are squarish or irregular in shape. The head is a similar brown colour to the body, rarely showing a slight orangish or reddish tinge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. crottyi sp. nov. is quite different in overall appearance to the two preceding species. It is unusual and unique in the complex in that its dorsum is usually olive green, grey or brown all over, although sometimes with a partially or fully formed black mid vertebral stripe. The head is chocolate or reddish brown in colour grading to grey-brown at the rear of the dorsum, with the (original) tail having a reddish dorsal edge. The area below the white line on the lower flank is not a well-defined thick dark line. Instead, it is a line containing black, white and usually orange and with a distinctly jagged lower edge where it meets the whitish venter.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. sloppi sp. nov. is morphologically similar to *T. oxyi sp. nov*. as described above. It is separated from that taxon by having the orange blotches running along the dark upper lateral line being circular in shape and oriented closer to the dorsolateral line, rather than down the midline of the dark upper lateral line. The head of *T. sloppi sp. nov*. is orange-red and the rear body beige-brown.

In common with *T. oxyi sp. nov*. the area below the white line on the lower flank is a well-defined thick dark blackish coloured line, only with slight smudges of orange or any other colour on the line itself, but with a very sharp well defined lower edge as well as a sharp well defined upper edge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. fischeri of the nominate form is readily separated from all other species in this complex by having 10-12 orange blotches (or pairs) between ear and back leg on the black upper lateral line.

These blotches are reduced in size and number, with greater black interspaces between them.

In *T. fischeri* the dorsum is also effectively brown in colour. This is caused by a merging in brown of the brown longitudinal lines running down the back on either side of the black vertebral line (as in what are dark interspaces in the previous species, are in this species merely of the same colour as the lines themselves).

Between the outer of these lines is another thin black line between it and the also faded yellow dorsolateral line.

This in effect means that the dorsum is brown, but with a thin black vertebral line and two thin black lines near the lateral edges (one on either side).

Unusual for this subspecies as compared to the others in this complex, all these lines terminate abruptly on the anterior of the tail, immediately past the back legs and do not run along the length of the tail, with the black midline extending only slightly further than the other two.

In all other species and subspecies in the group, the dark midline runs a reasonable way along the upper surface of the length of the tail.

In *T. fischeri* the white line along the lower flank is straight edged top and bottom and well defined, with a straight sharp boundary both top and bottom. Below this is a relatively straight unbroken black line, with 1-3 small orangish blotches within the black.

T. fischeri yinggarda subsp. nov. is morphologically radically different to the nominate form of *T. fischeri* and were it not for the limited genetic divergence, I would not have hesitated to assign it full species status.

Colour wise it is strongly superficially reminiscent of *T. schomburgkii*, *T. oxyi sp. nov*. and *T. sloppi sp. nov*.. However, it is significantly different to all. On the dorsum there are two thin orange longitudinal lines running either side of the black vertebral line. Between these lines and the yellow laterodorsal line is a row of small but wide and irregularly shaped orange spots along the middle of the black background or line.

On the black line of the upper flank the orange spots are enlarged and square shaped, with the upper and lower edges completely intersecting squarely the white lines running longitudinally above and below. Between ear and back leg on the black upper lateral line, are 16-18 orange blotches (or pairs).

Below the lower white line on the flank is a near complete boundary of medium-sized orange, blackish and white patches, forming a series of intrusions as opposed to a jagged edge into the white of the ventral surface. Upper surfaces of head are orangish, rear of body overall is patterned but darkish in colour and upper surface of most of the tail is yellowish or beige. The lines of dark that run completely along the length of the tail in nominate *T. fischeri* are broken in *T. fischeri yinggarda subsp. nov.* with the yellow beige

of the upper surfaces cutting it up. Thus, the dark markings on the lateral surfaces of the tail have a checkered appearance.

T. fischeri martu subsp. nov. is superficially most similar to the nominate form of *T. fischeri* as described above. This includes in the colour formation of the dorsum, except for the fact that the merging of the brown lines on the back is not wholly complete and there is a sliver of a black line between the wider brown areas of the longitudinal lines.

Most importantly there are between ear and back leg on the black upper lateral line, 21-23 orange blotches (or pairs), these being close together and generally small in size.

T. fischeri martu subsp. nov. has the white line along the lower flank that is curved edged both top and bottom, at least anteriorly. Below this line is a series of mainly merged black blotches which are the interface between the white line and the white underparts, meaning that they are in effect usually joined in parts, at least at the anterior part of the body. The black markings on the lower flank do not have any orange spots within them.

T. pallescens is morphologically most similar to *T. schomburgkii* but is separated from that taxon and the other preceding taxa by the following combination of characters:
Having a body colour with a brown back, with or without a pattern (a dark vertebral and modified laterodorsal stripe), but is usually nearly patternless in adults; an upper lateral zone consisting of 17 alternating dark and orange rectangular blotches, with the upper edges of the blotches squarely abutting the light dorsolateral line, but a thin black sliver between the blotches lower surfaces and the lower white lateral line; the lower white lateral line is dead straight with well-defined top and bottom edges, the bottom edge being another straight-edged line of alternating blackish and orange squares, being straight edged top and bottom where it meets the whitish undersurface; a higher average number of midbody scale-rows than all the preceding species (28-30 versus 25-30), fewer subdigital lamellae (on average), than the preceding species (being 18-22, versus 19-24); a narrow second loreal (being 1.1-1.3 times as high as wide, versus 1.4-2.5 times in the other species); distinctive white circles on the upper surfaces of the fore and hind limbs (not seen in any of the other 8 species); on the lower flanks, below the lower white stripe are dark blackish patches with well-defined white or whitish blotches within them.
T. kutjupa is separated from all the preceding eight species by having seven narrow dark dorsal stripes, including a vertebral stripe that becomes more prominent on the (unbroken) tail and runs almost the full length of the tail in most individuals; by having prefrontals and nasals usually in strong medial contact (versus rarely so for either pair in the preceding species); lack of a strong continuation of the white midlateral stripe along the upper labials (versus continuation present in all the preceding species), instead showing a crescentic whitish marking that curves up behind the eye; and by having a dark vertebral stripe that becomes more prominent on the tail and continues for almost all of its length in most individuals (versus a vertebral stripe that fades out on the tail and terminates at

about the halfway point or earlier in the other species).

The preceding nine taxa, being *T. schomburgkii*, *T. oxyi sp. nov.*, *T. crottyi sp. nov.*, *T. sloppi sp. nov.*, *T. pallescens*, *T. fischeri*, *T. fischeri yinggarda subsp. nov.*, *T. fischeri martu subsp. nov.* and *T. kutjupa*, are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Dorsal pattern is not ocellate; back is black with 4 reddish or greenish white longitudinal lines that are bold, sharp edged and well-developed; or alternatively brownish with a black vertebral line (in *C. crottyi sp. nov*.); head and neck not bold red; black upper lateral zone encloses a series of pale reddish spots; 2 presuboculars: prefrontals usually separated; nasals separated; nasal is weakly or not grooved; toes strongly compressed; subdigital lamellae with a fine sharp keel ending in a mucron or short spine; head relatively low and snout long and narrow; hindleg more than 40 percent of snout vent; size small (snout-vent length is up to 50 mm).

T. schomburgkii is depicted in life in Cogger (2014) on page 520 at bottom, Swan *et al*. (2022) page 14 at top, Wilson and Swan (2021) on page 297 middle right and online at:

https://www.flickr.com/photos/95482238@N02/23749637701/

and

https://www.flickr.com/photos/jayceebarnes/50635735947/

and

https://www.flickr.com/photos/189037423@N06/51013050468/

T. oxyi sp. nov. is depicted in life in Wilson and Knowles (1988) on page 273 bottom left and online at:

https://www.inaturalist.org/observations/144968830

T. pallescens is depicted in life in Wilson and Swan (2021) on page 287 bottom and online at:

https://www.flickr.com/photos/zimny_anders/51194840824/

T. crottyi sp. nov. is depicted in life in Storr *et al.* (1981) in plate 9 second from top on left, Wilson and Knowles (1988) page 273 middle right and online at:
https://www.inaturalist.org/observations/98964672
and
https://www.inaturalist.org/observations/46690895
and
https://www.inaturalist.org/observations/103303441
and
https://www.flickr.com/photos/stephenmahony/49676549367/
and
https://www.inaturalist.org/observations/192033048

T. sloppi sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/153623890

T. fischeri of the type form subspecies is depicted online at:
https://www.flickr.com/photos/reptileshots/53208619121/
and
https://www.flickr.com/photos/58349528@N02/53195952153/

T. fischeri yinggarda subsp. nov. is depicted in life in Storr (1981) plate 9, photo 1, top left and online at:
https://www.flickr.com/photos/moloch05/53376714598/

T. fischeri martu subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/jaricornelis/51772802322/

T. kutjupa is depicted in life in Prates *et al.* (2022a) on page 12, photos A and B and online at:
https://www.flickr.com/photos/ingirumimusnocte/albums/72157647583792509/
and
https://www.flickr.com/photos/ingirumimusnocte/15324070396/

Distribution: *T. fischeri yinggarda subsp. nov.* is found south of the main Pilbara district in the dune country south of the Cape Range and including that peninsula and inland to near Shark Bay to New Forrest Station, Murchison, Western Australia.

Etymology: *T. fischeri yinggarda subsp. nov.* is named after the Yinggarda people, being the original Aboriginal inhabitants of the Gascoyne region, Western Australia, which is the centre of distribution of this species. Most were killed by the British invaders in the 1800's, either directly or via the diseases they brought, such as smallpox. The descendants of the survivors carefully eke out a miserable existence scavenging on the edges of towns and settlements ever worried about being bashed, shot or killed by racist white police or in the alternative members of the Wolfgang Wüster cohort, like Seth Pywell, who unusually was convicted in a court of shooting an aboriginal.

TANTALOSCINCUS FISCHERI MARTU SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:C11F2A80-6997-4E1E-AAD7-C9C6403F235A

Holotype: A preserved adult male specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R172568 collected from Cumming Range, Western Australia, Australia, Latitude -19.279722 S., Longitude 127.180278 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R161348 and R163932 both collected from 43 km east of Goldsworthy Western Australia, Australia, Latitude -20.373611 S., Longitude 119.9325 E., 2/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R161493 collected 24 km northeast of Warrawagine Homestead, Western Australia, Australia, Latitude -20.739167 S., Longitude 120.893889 E.

Diagnosis: Until now, most publishing authors have treated all of *Tantaloscincus oxyi sp. nov.*, *T. crottyi sp. nov.*, *T. oxyi sp. nov.*, *T. pallescens* (Storr, 1970), *T. fischeri* (Boulenger, 1887), *H. fischeri yinggarda subsp. nov.* and *H. fischeri martu subsp. nov.* as populations of the pan-Australian putative species *T. schomburgkii* (Peters, 1863).

In its current concept, *T. schomburgkii* (Peters, 1863) has been placed in the genus *Ctenotus* Storr, 1964, however all the eight preceding listed taxa are herein placed in the genus *Tantaloscincus* Wells and Wellington, 1984.

In its current concept, *T. schomburgkii* occurs throughout arid Australia in all mainland Australian states, but is not found in the far north of the tropics as in the Kimberley district, the top end of the Northern Territory, Cape York, the east coast and pretty much all of Victoria.

A more distantly related associated species is the recently described "*Ctenotus kutjupa* Hutchinson, Prates and Rabosky, 2022" from the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and far northwest South Australia, a taxon well recognized by herpetologists as not being *T. schomburgkii*.

The relevant nine taxa are found in the following areas: *T. schomburgkii* with a type locality of Gawler, South Australia, is effectively confined to the eastern half of South Australia and immediately adjoining parts of far north-west Victoria, New South Wales, South Australia and the Northern Territory.

The morphologically similar *T. oxyi sp. nov.* occurs in the western half of South Australia, away from the coast and into the eastern part of the southern half of Western Australia, being found south of the central Australian lakes and floodplains and north of the coast.

T. crottyi sp. nov. occurs in the drier parts of the western half of Western Australia except for the cooler south-east or the Pilbara, Great Sandy Desert or Kimberley districts.

The closely related *T. sloppi sp. nov*. occurs in the dry country to the south of the Kimberley district and into the sandy and range areas of the south of the Northern territory.

North-east of the red centre and primarily on the Barkly Tableland in the Northern Territory, *T. pallescens* (Storr, 1970) occurs. It has a type locality of Morphett Creek, 7 miles south of Banka Banka, Northern Territory (Latitude 18.53 S., Longitude 134.05 E.).

In the Pilbara district generally, the species *T. fischeri* (Boulenger, 1887) occurs.

That species is split into three subspecies.

The nominate form with a type locality of Nickol Bay, Western Australia occurs in the main Pilbara region mainly south of the Fortescue River and including the Pilbara coast, north of the Fortescue River around the type locality Nickol Bay (Karratha).

T. fischeri yinggarda subsp. nov. is found south of the main Pilbara district in the dune country south of the Cape Range and including that peninsula and inland to near Shark Bay to New Forrest Station, Murchison, Western Australia.

T. fischeri martu subsp. nov. is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally north of the Fortescue River, including the southern edge of the Kimberley district in north-west Western Australia.

The associated taxon *T. kutjupa* with a type locality of 5.3 km south southeast of the Pungkulpirri Waterhole, Western Australia (Latitude 24.4226 S., Longitude 128.4537 E) occurs in the interior region of the southwest of the Northern Territory, nearby parts of Western Australia and northwest South Australia.

The preceding taxa treated as species are believed to have diverged from their nearest related taxon by more than 1.5 MYA, while the subspecies are believed to have diverged less than1.5 MYA.

The above-named preceding species and subspecies are separated from one another by the following relevant characteristics and combinations:

T. schomburgkii has a black back with four orangish to yellowish orange lines running longitudinally down it. It has thin, well defined sharp edged yellow dorsolateral lines. Below this a thick black lateral band running from the back of the eye and neck, along the body and above the rear leg to the tail, where it continues somewhat thinner along but for more than half the tail length (original tail). Between snout and eye, the same line is thinner and brownish in colour. Between ear and back leg on the black upper lateral line are 15-17 orange blotches (or pairs). Below this is a thin to medium, well defined white line, with sharp top and bottom borders, commencing on the upper labials and running across the ear (where it breaks) before continuing along the neck, over the front leg and along the mid lower flank, running through the hind leg and also along most of the length of the tail.

Below this is a dark zone being a combination of orange and brown and white with an uneven lower edge that meets the pale venter.

T. oxyi sp. nov. is essentially similar in most respects to *T. schomburgkii* detailed above but differs from that species by having four brownish to olive-coloured lines running longitudinally down the back. In addition, the area below the white line on the lower flank is a well-defined thick dark line, only with slight smudges of orange on the line itself, but with a sharp well defined lower edge as well as a sharp well defined upper edge.

The orange blotches running along the dark upper lateral line are squarish or irregular in shape. The head is a similar brown colour to the body, rarely showing a slight orangish or reddish tinge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. crottyi sp. nov. is quite different in overall appearance to the two preceding species. It is unusual and unique in the complex in that its dorsum is usually olive green, grey or brown all over, although sometimes with a partially or fully formed black mid vertebral stripe. The head is chocolate or reddish brown in colour grading to grey-brown at the rear of the dorsum, with the (original) tail having a reddish dorsal edge. The area below the white line on the lower flank is not a well-defined thick dark line. Instead, it is a line containing black, white and usually orange and with a distinctly jagged lower edge where it meets the whitish venter.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. sloppi sp. nov. is morphologically similar to *T. oxyi sp. nov*. as described above. It is separated from that taxon by having the orange blotches running along the dark upper lateral line being circular in shape and oriented closer to the dorsolateral line, rather than down the midline of the dark upper lateral line. The head of *T. sloppi sp. nov*. is orange-red and the rear body beige-brown.

In common with *T. oxyi sp. nov*. the area below the white line on the lower flank is a well-defined thick dark blackish coloured line, only with slight smudges of orange or any other colour on the line itself, but with a very sharp well defined lower edge as well as a sharp well defined upper edge.

Between ear and back leg on the black upper lateral line, are 15-17 orange blotches (or pairs).

T. fischeri of the nominate form is readily separated from all other species in this complex by having 10-12 orange blotches (or pairs) between ear and back leg on the black upper lateral line.

These blotches are reduced in size and number, with

greater black interspaces between them.

In *T. fischeri* the dorsum is also effectively brown in colour. This is caused by a merging in brown of the brown longitudinal lines running down the back on either side of the black vertebral line (as in what are dark interspaces in the previous species, are in this species merely of the same colour as the lines themselves).

Between the outer of these lines is another thin black line between it and the also faded yellow dorsolateral line.

This in effect means that the dorsum is brown, but with a thin black vertebral line and two thin black lines near the lateral edges (one on either side).

Unusual for this subspecies as compared to the others in this complex, all these lines terminate abruptly on the anterior of the tail, immediately past the back legs and do not run along the length of the tail, with the black midline extending only slightly further than the other two.

In all other species and subspecies in the group, the dark midline runs a reasonable way along the upper surface of the length of the tail.

In *T. fischeri* the white line along the lower flank is straight edged top and bottom and well defined, with a straight sharp boundary both top and bottom. Below this is a relatively straight unbroken black line, with 1-3 small orangish blotches within the black.

T. fischeri yinggarda subsp. nov. is morphologically radically different to the nominate form of *T. fischeri* and were it not for the limited genetic divergence, I would not have hesitated to assign it full species status.

Colour wise it is strongly superficially reminiscent of *T. schomburgkii*, *T. oxyi sp. nov*. and *T. sloppi sp. nov*.. However, it is significantly different to all. On the dorsum there are two thin orange longitudinal lines running either side of the black vertebral line. Between these lines and the yellow laterodorsal line is a row of small but wide and irregularly shaped orange spots along the middle of the black background or line.

On the black line of the upper flank the orange spots are enlarged and square shaped, with the upper and lower edges completely intersecting squarely the white lines running longitudinally above and below. Between ear and back leg on the black upper lateral line, are 16-18 orange blotches (or pairs).

Below the lower white line on the flank is a near complete boundary of medium-sized orange, blackish and white patches, forming a series of intrusions as opposed to a jagged edge into the white of the ventral surface. Upper surfaces of head are orangish, rear of body overall is patterned but darkish in colour and upper surface of most of the tail is yellowish or beige. The lines of dark that run completely along the length of the tail in nominate *T. fischeri* are broken in *T. fischeri yinggarda subsp. nov.* with the yellow beige of the upper surfaces cutting it up. Thus, the dark markings on the lateral surfaces of the tail have a checkered appearance.

T. fischeri martu subsp. nov. is superficially most similar to the nominate form of *T. fischeri* as described above. This includes in the colour formation of the dorsum, except for the fact that the merging of the brown lines on the back is not wholly complete and there is a sliver of a black line between the wider brown areas of the longitudinal lines.

Most importantly there are between ear and back leg on the black upper lateral line, 21-23 orange blotches (or pairs), these being close together and generally small in size.

T. fischeri martu subsp. nov. has the white line along the lower flank that is curved edged both top and bottom, at least anteriorly. Below this line is a series of mainly merged black blotches which are the interface between the white line and the white underparts, meaning that they are in effect usually joined in parts, at least at the anterior part of the body. The black markings on the lower flank do not have any orange spots within them.

T. pallescens is morphologically most similar to *T. schomburgkii* but is separated from that taxon and the other preceding taxa by the following combination of characters:
Having a body colour with a brown back, with or without a pattern (a dark vertebral and modified laterodorsal stripe), but is usually nearly patternless in adults; an upper lateral zone consisting of 17 alternating dark and orange rectangular blotches, with the upper edges of the blotches squarely abutting the light dorsolateral line, but a thin black sliver between the blotches lower surfaces and the lower white lateral line; the lower white lateral line is dead straight with well-defined top and bottom edges, the bottom edge being another straight-edged line of alternating blackish and orange squares, being straight edged top and bottom where it meets the whitish undersurface; a higher average number of midbody scale-rows than all the preceding species (28-30 versus 25-30), fewer subdigital lamellae (on average), than the preceding species (being 18-22, versus 19-24); a narrow second loreal (being 1.1-1.3 times as high as wide, versus 1.4-2.5 times in the other species); distinctive white circles on the upper surfaces of the fore and hind limbs (not seen in any of the other 8 species); on the lower flanks, below the lower white stripe are dark blackish patches with well-defined white or whitish blotches within them.
T. kutjupa is separated from all the preceding eight species by having seven narrow dark dorsal stripes, including a vertebral stripe that becomes more prominent on the (unbroken) tail and runs almost the full length of the tail in most individuals; by having prefrontals and nasals usually in strong medial contact (versus rarely so for either pair in the preceding species); lack of a strong continuation of the white midlateral stripe along the upper labials (versus

continuation present in all the preceding species), instead showing a crescentic whitish marking that curves up behind the eye; and by having a dark vertebral stripe that becomes more prominent on the tail and continues for almost all of its length in most individuals (versus a vertebral stripe that fades out on the tail and terminates at

about the halfway point or earlier in the other species).

The preceding nine taxa, being *T. schomburgkii*, *T. oxyi sp. nov*., *T. crottyi sp. nov*., *T. sloppi sp. nov*., *T. pallescens*, *T. fischeri*, *T. fischeri yinggarda subsp. nov.*, *T. fischeri martu subsp. nov.* and *T. kutjupa*, are separated from all other species within the genus *Ctenotus* Storr, 1968 and the associated genera as recognised in this paper, being *Kommosagogus* Wells and Wellington, 1984, type species: *Gongylus* (*Lygosoma*) *labillardieri* Duméril and Bibron ,1839, *Magnuscincus* Wells and Wellington, 1984, type species: *Lygosoma* (*Hinulia*) *pantherinum* Peters, 1866 and *Tantaloscincus* Wells and Wellington, 1984 type species: *Lygosoma schomburgkii* Peters, 1863 and *Matherus gen. nov*. type species, *Matherus matheri sp. nov*. by the following unique combination of characters:

Dorsal pattern is not ocellate; back is black with 4 reddish or greenish white longitudinal lines that are bold, sharp edged and well-developed; or alternatively brownish with a black vertebral line (in *C. crottyi sp. nov*.); head and neck not bold red; black upper lateral zone encloses a series of pale reddish spots; 2 presuboculars: prefrontals usually separated; nasals separated; nasal is weakly or not grooved; toes strongly compressed; subdigital lamellae with a fine sharp keel ending in a mucron or short spine; head relatively low and snout long and narrow; hindleg more than 40 percent of snout vent; size small (snout-vent length is up to 50 mm).

T. schomburgkii is depicted in life in Cogger (2014) on page 520 at bottom, Swan *et al*. (2022) page 14 at top, Wilson and Swan (2021) on page 297 middle right and online at:

https://www.flickr.com/photos/95482238@N02/23749637701/

and

https://www.flickr.com/photos/jayceebarnes/50635735947/

and

https://www.flickr.com/photos/189037423@N06/51013050468/

T. oxyi sp. nov. is depicted in life in Wilson and Knowles (1988) on page 273 bottom left and online at:

https://www.inaturalist.org/observations/144968830

T. pallescens is depicted in life in Wilson and Swan (2021) on page 287 bottom and online at:

https://www.flickr.com/photos/zimny_anders/51194840824/

T. crottyi sp. nov. is depicted in life in Storr *et al.* (1981) in plate 9 second from top on left, Wilson and Knowles (1988) page 273 middle right and online at:
https://www.inaturalist.org/observations/98964672

and
https://www.inaturalist.org/observations/46690895
and

https://www.inaturalist.org/observations/103303441

and
https://www.flickr.com/photos/stephenmahony/49676549367/

and

https://www.inaturalist.org/observations/192033048

T. sloppi sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/153623890

T. fischeri of the type form subspecies is depicted online at:

https://www.flickr.com/photos/reptileshots/53208619121/

and
https://www.flickr.com/photos/58349528@N02/53195952153/

T. fischeri yinggarda subsp. nov. is depicted in life in Storr (1981) plate 9, photo 1, top left and online at:

https://www.flickr.com/photos/moloch05/53376714598/

T. fischeri martu subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/jaricornelis/51772802322/

T. kutjupa is depicted in life in Prates *et al*. (2022a) on page 12, photos A and B and online at:

https://www.flickr.com/photos/ingirumimusnocte/albums/72157647583792509/

and

https://www.flickr.com/photos/ingirumimusnocte/15324070396/

Distribution: *T. fischeri martu subsp. nov.* is a taxon from the Great Sandy Desert and adjacent parts of the north Pilbara region, generally well north of the Fortescue River, including the southern edge of the Kimberley district in north-west Western Australia.

Etymology: *T. fischeri martu subsp. nov.* is named after the Martu people, being the original Aboriginal inhabitants of the eastern Great Sandy Desert in Western Australia, which is the centre of distribution of this species. Most were killed by the British invaders in the 1800's, either directly or via the diseases they brought, such as smallpox. The descendants of the survivors carefully eke out a miserable existence scavenging on the edges of towns and settlements ever worried about being bashed, shot or killed by racist white police, or in the alternative members of the Wolfgang Wüster cohort, like Seth Pywell, who unusually was convicted in a court of shooting an aboriginal.

SUMMARY

While this paper expands the Australian skink genus *Ctenotus* Storr, 1964 *sensu lato* by roughly a third in terms of the number of recognized species and subspecies, this is not the last word with respect to the group, even though it is now evident that most species-level taxa are now named.

A number of widespread putative species remain composite, including for example the *Ctenotus inornatus* (Gray, 1845) complex.

It is inevitable that this complex will be further split at some stage in the future.

Some presently recognised species within *Ctenotus* Storr, 1964 *sensu lato* are also likely to be merged and synonymised as has already happened with some previously described and named forms.

It is trite to mention that there cannot be a proper conservation management plan for any relevant species until they are formally identified and named and their distributional limits are fully known (Hoser 2007, 2019a, 2019b).

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