

Four new members of the *Lerista nichollsi* complex (Lacertilia: Scincidae)

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Abstract

Lerista kendricki sp. nov. and *L. yuna* sp. nov. are separated from '*L. nichollsi petersoni*' (*L. petersoni* and *L. nichollsi* are now regarded as full species). *L. talpina* sp. nov. is based on a unique patternless specimen, and *L. maculosa* sp. nov. is based on two spotted specimens. The four new species are confined to the vicinity of the upper west coast of Western Australia. An *L. nichollsi* subgroup is diagnosed, and *L. petersoni* is redescribed.

Introduction

The *Lerista nichollsi* complex is endemic to the Carnarvon Basin and adjacent Precambrian Shield of Western Australia. When I revised the complex in 1984 my small samples of the isolated southern populations seemed too similar to the northern nominate population of '*L. nichollsi petersoni*' to warrant their formal separation. Recently G. Harold urged me to re-open the question; he believed that the southern skinks differed from the northern considerably in colour and pattern. I was able to confirm this and find additional differences after examining the large series recently collected by P.G. Kendrick in the Hamelin area. Moreover, the southern populations were found to consist of two distinct taxa: one from near the coast between Shark Bay and Kalbarri, and one from further inland (Yuna district).

The question then arose, were these taxa subspecies of *L. nichollsi*? I therefore re-examined *L. nichollsi* and its closest relatives *L. gascoynensis* and *L. petersoni*, which replace each other from south-east to north-west in the arid interior. For the reasons given below these three taxa are now treated as species rather than subspecies. Hence the new taxa are described as full species, including the unpatterned specimen from Bullara (Storr 1984: 113) and a new taxon from the Hamelin area.

This study is based on specimens in the Western Australian Museum (R prefix omitted from register numbers) and colour slides kindly loaned by G. Harold, M. Peterson, P. Griffin and R.E. Johnstone.

Systematics

The *Lerista nichollsi* subgroup

Composition

L. nichollsi (Loveridge, 1933); *L. petersoni* Storr, 1976; *L. gascoynensis* Storr, 1986.

Diagnosis

Medium-sized members of the *L. nichollsi* complex (up to 131 mm long) with

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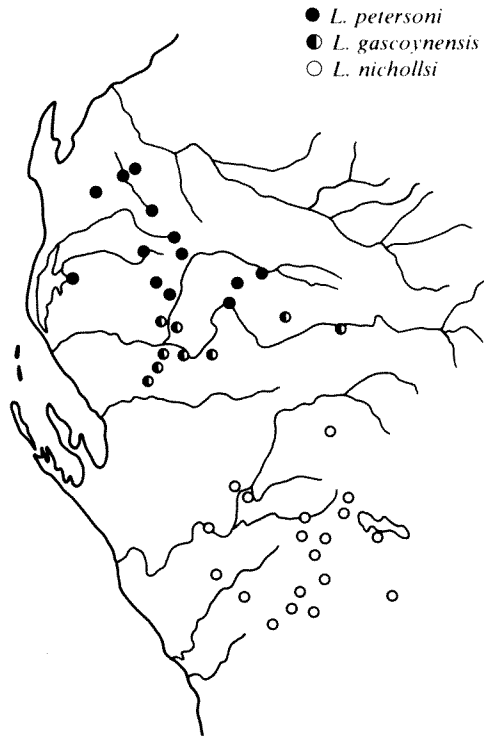


Figure 1 Map of mid-western Western Australia showing location of specimens of *Lerista nichollsi* subgroup.

moderately long tail (80-109% of SVL), immovable eyelids, second loreal much smaller than first and occasionally fused to prefrontal, presuboculars very small, second occasionally fused to first or to a labial, colour pattern strongly developed and including a wide pale or narrow dark vertebral stripe and a wide dark upper lateral stripe (usually one and a half scales wide on body), and yellow ventral and/or ventrolateral surfaces.

Distribution

Arid north-western and mid-western interior of Western Australia. See map, Figure 1.

Habitat

Leaf litter beneath acacias growing on a wide variety of soils including loose-surfaced clayey or stony loams.

Remarks

The differences between these taxa (width and intensity of vertebral stripe and number of supraciliaries) are of the order that separate sympatric species within the complex. Moreover the ranges of two of them (*L. petersoni* and *L. gascoynensis*) abut without

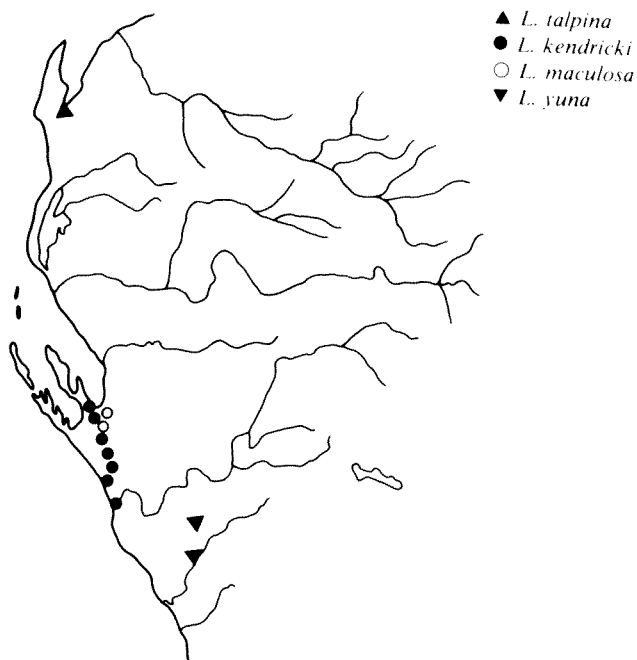


Figure 2 Map of mid-western Western Australia showing location of specimens of *Lerista talpina*, *L. kendricki*, *L. maculosa* and *L. yuna*.

evidence of hybridization. Hence they seem to be more than subspecies. On the other hand their sharing of so many and such diverse characters indicates a closer relationship than between sympatric members of the complex. Their nearest relative appears to be *L. uniduo*, which also has ventral yellow and very small second loreal and presuboculars.

Lerista petersoni Storr, 1976

Diagnosis

A member of the *L. nichollsi* subgroup, distinguishable from others by its much wider and paler vertebral stripe. Further distinguishable from *L. gascoynensis* by 4 (rather than 1 + 2) supraciliaries.

Description

Snout-vent length (mm): 39-71 (N 45, mean 58.3). Tail (% SVL): 83-109 (N 8, mean 91.2).

Nasals in very short to moderately long contact. Supraoculars 3, first two in contact with frontal. Supraciliaries normally 4, last much the smallest (3 and 1 + 3 in one specimen). Loreals 2, second much smaller than first (fused to prefrontal in three of 30

specimens). Presuboculars very small, 1 (N 4) or 2 (26). Upper labials 5 (N 1, when third and fourth fused) or 6 (28). Nuchals 1 (N 3), 2 (21) or 3 (5). Midbody scale rows 18 (N 1), 20 (27) or 22 (1). Lamellae under longer toe 10-14 (N 36, mean 11.4). Forelimb represented by a small groove or pit and usually a very small stump (up to 0.5 mm long).

Upper surface brownish white or very pale brown. Head, especially sutures, irregularly marked with dark brown. Back with 4 (occasionally 2) longitudinal rows of small angular dark brown or blackish brown spots, the space between them pale greyish brown, the resultant stripe extending irregularly on to tail. Wide dark brown or blackish brown upper lateral stripe from nasal to end of tail, on body usually occupying a longitudinal row of scales and lower half of row immediately above it, and continuous with vertical bars on lips (mostly located on sutures between upper labials). Upper surface of hindlegs mottled with greyish brown or blackish brown. Lower lateral surface and sometimes ventral surface yellow in life.

Distribution

Arid north-western interior of Western Australia, from Barradale south to the Kennedy Range and Yinnetharra. See map, Figure 1.

Material

North-West Division (WA): 17 km NE Barradale (80251) and 1 km W (84187) and 2 km S (80155-7, 98146-7) and 50 km WSW (81828-9); 25 km NW Maroonah (98187) and 30 km S (98180); Williambury (98178-9) and 3 km S (98185-6); 1 km N Mangaroon (98144-5) and 6 km SSE (84185-6); 10 km W Manberry (76842) and 14 km WSW (88889-95); Mt Augustus (84087); 4 km NE Mt Phillips HS (87760); near Merlinleigh Outstation (98136, 98141, 98188, 99637, 99641); 2 km E Mt Sandiman (99629-35); Yinnetharra (46197, 51738) and 12 km NNE (87610-2).

Lerista kendricki sp. nov.

Figure 3

Holotype

93887 in Western Australian Museum, collected by P.G. Kendrick on 28 February 1986 at 15 km SW Hamelin HS, Western Australia, in 26°32'S, 114°05'E.

Paratypes

The 270 specimens listed under Material.

Diagnosis

A moderately small, strongly patterned member of the *L. nichollsi* complex (up to 118 mm long) with immovable eyelids, 4 supraciliaries, wide vertebral stripe, two toes and forelimb represented by a small pit or groove (occasionally with a minute stump up to 0.2 mm long). Distinguishable from the *L. nichollsi* subgroup by lesser size, relatively shorter tail, larger second loreal, larger presuboculars, darker head, wider vertebral stripe and narrower upper lateral stripe.

Description

Snout-vent length (mm): 28-67 (N 265, mean 48.1). Tail (% SVL): 68-95 (N 105, mean 81.7).

Nasals in very short to long contact. Prefrontals widely separated. Frontoparietals



Figure 3 A *Lerista kendricki* from 16 km SSW Hamelin, photographed in life by M. Peterson.

and interparietal fused. Supraoculars 3, first two in contact with frontal. Supraciliaries normally 4, last much the smallest (in one specimen second and third fused to each other, in another third and fourth fused to third supraocular, in another fourth divided). Loreals 2, second not fused to prefrontal. Presuboculars 2. Upper labials 6. Nuchals 1 (N 11), 2 (19) or 3 (1). Midbody scale rows 20 (N 5). Lamellae under longer toe 11-15 (N 25, mean 11.6), rarely with a weak keel.

Broad medium to dark brown vertebral stripe from snout to tail, very rarely covering whole width of back but usually leaving a narrow brownish white dorsolateral stripe; enclosing 4 rows of small angular brown to blackish brown spots on back. Narrow blackish brown upper lateral stripe from nasal to end of tail, on body usually occupying two adjacent half-scales, and continuous with dark upper and lateral edges of upper labials. Upper surface of hindlegs mottled with dark greyish brown.

Distribution

Sandy country near mid-west coast of Western Australia, from base of Peron Peninsula south to the mouth of the Murchison. See map, Figure 2.

Derivation of name

After zoologist Peter Graeme Kendrick in appreciation of his research into *Lerista*, notably the *L. nichollsi* complex.

Material

North-West Division (WA): 6 km SSE Nilemah Outstation (92728-31, 94162, 94164, 94166-7, 94169, 94171) and 7 km S (92698-9, 92702-4, 93910-1, 93915-8, 93922, 94152) and 9 km S 92427, 92429, 92432-3, 92439, 92441-3, 92446-7, 92449-50, 92452, 92460, 92509, 92511-3, 92514-6, 92519-21, 92523, 92541, 92544-5, 92547, 92786-95, 92797, 92799-801, 92812-3, 93946-52) and 10 km SSE (96875-82) and 11 km SE (92199, 93970, 93973-6) and 17 km SE (92740-1, 92748, 92752-4, 92831-3, 92835-7) and 17 km SSE (92857-8, 92863, 92865, 92869-73); 11 km SSW Hamelin (88773) and 13 km SW (95818-9) and 14 km SW (88717-21, 89677-83, 92205, 92207, 92209, 92214-7, 92219, 92225-6, 92234, 92737, 92904, 92906, 92908-10, 92912, 92915-6) and 15 km SW (92411-2, 92419, 92424-5, 92581, 92585, 92589-90, 92592-6, 92665, 92874, 92877-80, 92883-4, 92886, 92888-95, 93873-6, 93880-2, 93884-5) and 15 km S (95827-9) and 17 km SW (88941-51) and 17 km SSW (95830) and 18 km WSW (88969-75) and 18 km SSW (92391-2, 92396, 92401-3, 92407, 92510, 92514, 92526-35, 92537-40, 92817) and 18 km S (89314) and 20 km SW (89563-72) and 25 km SSW (89871); 42 km NE Tamala (64363) and 41 km NE (89860-6) and 30 km NE (88767) and 40 km SE (96152); 23 km NW Cooloomia (66357) and 14 km W (69543) and 15 km WSW (66372) and 18 km SW (69557) and 23 km SW (66357).

South-West Division (WA): Gee Gie Outcamp (34046); Kalbarri (37640-1).

***Lerista yuna* sp. nov.**

Figure 4

Holotype

97214 in Western Australian Museum, collected by G. Harold on 9 July 1987 on the East Yuna Reserve, Western Australia, in 28°28'S, 115°13'E.

Paratypes

South-West Division (WA): 40 km ENE Yuna (57528); East Yuna Reserve (97213, 100846).

Diagnosis

A strongly patterned member of the *L. nichollsi* complex with immovable eyelids, 4 supraciliaries, wide vertebral stripe, 2 toes and forelimb represented by a small groove or pit (and occasionally a minute stump). Distinguishable from *L. petersoni* by larger second loreal, larger presuboculars and lack of yellow on flanks and venter, and from *L. kendricki* by paler head and vertebral stripe and wider upper lateral stripe.

Description

Snout-vent length (mm): 29-66 (N4). Tail (% SVL): 88 (N 1).

Nasals in short to long contact. Prefrontals widely separated. Frontoparietals and interparietal fused. Supraoculars 3, first two in contact with frontal. Supraciliaries 4, last much the smallest. Loreals 2, second not fused to prefrontal. Presuboculars 2. Upper labials 6. Nuchals 2 (occasionally 3). Midbody scale rows 20. Lamellae under longer toe 10-12.

Head pale greyish brown, irregularly marked with dark brown or blackish brown (especially along sutures). Four series of angular dark brown or blackish brown spots on back (outer series continuing on to tail), space between them greyish brown, flecked darker. Dorsolateral stripe brownish white (pale coppery brown in life). Wide dark brown or blackish brown upper lateral stripe from nasal to end of tail, occupying on body a row of scales and lower half of row immediately above. Upper surface of hindlegs mottled with greyish brown. Lower lateral and ventral surfaces whitish in life.



Figure 4 Holotype of *Lerista yuna* photographed in life by R.E. Johnstone.

Distribution

Semiarid northern interior of South-West Division of Western Australia (north-east and south-east of Yuna). See map, Figure 2.

***Lerista talpina* sp. nov.**

Holotype

74947 in Western Australian Museum, collected by G. Harold on 28 June 1981 at 2 km W Bullara, Western Australia, in 22°41'S, 114°01'E.

Diagnosis

A small slender short-tailed member of the *L. nichollsi* complex with small deep-set eyes and immovable eyelids, distinguishable from all others by lack of colour pattern and lack of ear aperture (only a small depression).

Description (of single available specimen)

Snout-vent length (mm): 36. Tail (% SVL): 66.

Nasals in short contact. Prefrontals widely separated. Frontoparietals and interparietal fused. Supraoculars 3, first two in contact with frontal. Supraciliaries 4, last much the smallest. Loreals 2. Presuboculars 2. Upper labials 6. Nuchals 1-2. Midbody scale rows 20. Lamellae under longer toe 10-12. Forelimb represented by a small pit.

Dorsal and lateral surfaces buffy white, without pattern. Hindlegs and lower surfaces white.

Distribution

Only known from one locality a little south of Exmouth Gulf, Western Australia.

Remarks

The holotype was collected (along with an *Aprasia fusca*) on a red *Triodia*-covered sandridge.

Derivation of name

From Latin *talpa* (mole).

Lerista maculosa sp. nov.

Holotype

95921 in Western Australian Museum, collected by P.G. Kendrick on 22 November 1987 at 5 km W Overlander, Western Australia, in 26°24'S, 114°25'E.

Paratype

North-West Division (WA): 16 km S Hamelin (92182).

Diagnosis

A member of the *L. nichollsi* complex with immovable eyelids, distinguishable from all others by heavily spotted pattern.

Description

Snout-vent length (mm): 39-41 (N 2). Tail (% SVL): 90 (N 1).

Nasals in contact. Prefrontals widely separated. Frontoparietals and interparietal fused. Supraoculars 3, first two in contact with frontal. Supraciliaries 1 + 2 (second fused to first supraocular). Loreal 1 (second fused to prefrontal). Presuboculars 2. Upper labials 6. Nuchals 2. Midbody scale rows 18. Lamellae under longer toe 10-11. Forelimb represented by a minute pit.

Top of head pale greyish brown stippled with dark brown. Back and tail pale brown with 4 longitudinal rows of small dark brown spots (outer series darker). Side of head barred and blotched with blackish brown (all but last upper labial almost wholly dark). Side of body and tail brownish white with 5 rows of dark brown to blackish brown spots (largest, darkest and tending to be transversely elongate on upper flanks). Hindlegs and lower surfaces brownish white to pale brown, stippled or indistinctly spotted or barred with pale brown, except for white mental and pre-anal scales.

Distribution

Only known from two localities a little south of Shark Bay (one of them a small area of mallee/*Triodia* shared with the endemic skink *Ctenotus zasticus* and the isolated southern population of the agamid *Ctenophorus rubens*). See map, Figure 2.

Derivation of name

Latin for covered in spots.

References

- Storr, G. M. (1984). Revision of the *Lerista nichollsi* complex (Lacertilia: Scincidae). Rec. West. Aust. Mus. 11: 109-118.
- Storr, G. M. (1986). Two new members of the *Lerista nichollsi* complex (Lacertilia: Scincidae). Rec. West. Aust. Mus. 13: 47-52.