

## Partial revision of the *Lerista macropisthopus* group (Lacertilia: Scincidae)

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### Abstract

Three new species are described, namely *L. bunglebungle* from east Kimberley, *L. puncticauda* from the Great Victoria Desert and *L. axillaris* from the west coast. *L. macropisthopus* is divided into four subspecies. *L. neander* and *L. desertorum* are redescribed.

### Introduction

Few specimens of *L. macropisthopus* and *L. desertorum* and very few of *L. neander* were available for my revision of *Lerista* (Storr 1972). Since then the Western Australian Museum has received many more specimens of these lizards, enabling me to re-assess their taxonomic status. Although *L. macropisthopus*, *L. neander* and *L. desertorum* are very closely related and replace each other geographically, I prefer to treat them as species rather than subspecies. Despite the proximity of their ranges (Figure 1), there is no evidence of intergradation or hybridization between them. Moreover *L. macropisthopus* itself has broken up into four subspecies. A new species of *Lerista* is described from the Kalbarri area, where it coexists with *L. macropisthopus galea*; a new species is described from the far north-east of Western Australia, and a new species is described from the Queen Victoria Spring area, where it is probably sympatric (but not syntopic) with *L. desertorum*.

### Systematics

#### *Lerista macropisthopus macropisthopus* (Werner, 1903)

Figure 2

#### Diagnosis

A dark robust subspecies of *L. macropisthopus* with 2 fingers, 3 toes and little or no colour pattern.

#### Description

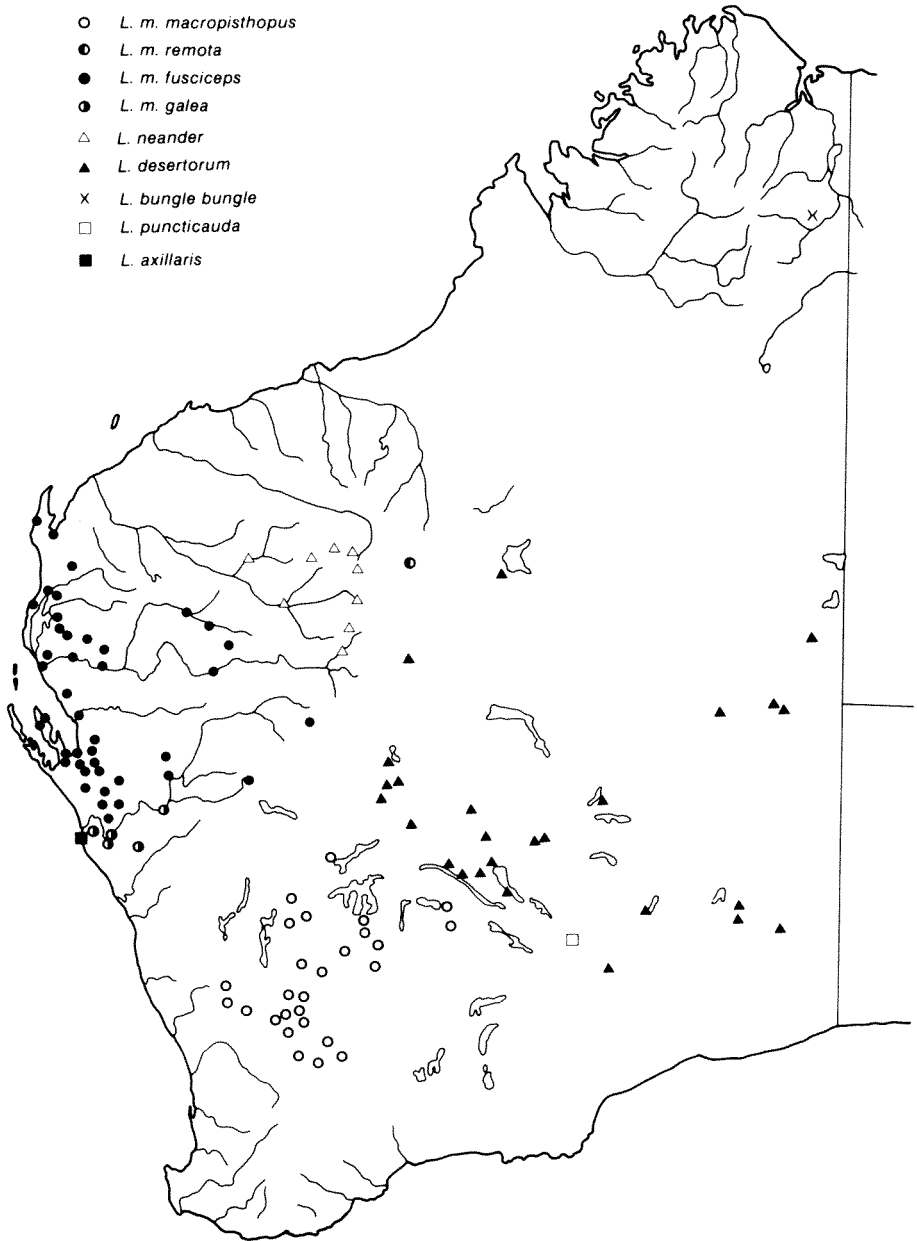
Snout-vent length (mm): 37-96 (N 58, mean 79.3). Length of appendages (% SVL): foreleg 2.3-4.6 (N 40, mean 3.4); hindleg 12.8-17.3 (N 40, mean 15.1); tail 81-112 (N 24, mean 94.1); snout to foreleg 22.0-31.0 (N 39, mean 24.8).

Nasals narrowly to moderately separated (N 38) or in short contact (3). Prefrontals widely separated. Frontoparietals narrowly to moderately separated (N 39) or fused to parietals (1), slightly to much smaller than interparietal. Nuchals 1-4 (N 40, mean 2.6). Supraoculars 3, first two in contact with frontal. Supraciliaries 1 + 3 (N 53), 1 + 2 (1) or 5 (1). Upper labials 5 (N 2) or 6 (46). Midbody scale rows 20 (N 31), 21 (2) or 22 (3). Lamellae under longest toe 9-13 (N 43, mean 11.6).

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Partial revision of the *Lerista macropisthopus* group



**Figure 1** Map of Western Australia, showing location of specimens of *Lerista macropisthopus remota*, *L. m. fusciceps*, *L. m. galea*, *L. m. macropisthopus*, *L. neander*, *L. desertorum*, *L. bunglebungle*, *L. puncticauda* and *L. axillaris*.

Dorsal and upper lateral surfaces chocolate brown to greyish brown, without pattern except for slight darkening in loreal region and occasionally a slight paling across occiput. Ventral and lower lateral surfaces whitish except for brownish grey under hands and feet.

### Distribution

Semi-arid and arid south-western interior of Western Australia, from the eastern wheat belt north nearly to Atley, west to Wongan Hills and east to Jeedamya.

### Material

*North-West Division (WA)*: 20 km NNE Pindabunna (93104); near Earoo Rock (90279, 90282-3, 90290).

*South-West Division (WA)*: Bimbijy (96594-6); 45 km ESE Karroun Hill (96568); Wialki (24881) and 23 km NE (18187); Ballidu (13931, 101499); Wongan Hills (4237); Ejanding (9833); Bencubbin (2759); Mukinbudin (32048); Billyacatting Hill (45978); Nembudding (7393); 8 km E Kununoppin (22343); Nukarni (4991); North Baandee (26159, 97475); Bruce Rock (1113); East Muntadgin (68280-1); Narembeen (12371) and 64 km E (25827).

*Eastern Division (WA)*: Dead Horse Rocks (85260-4); 3 km N Jeedamya (24043); 14 km ENE Comet Vale (65824, 72716) and 3 km NE (72744); Blue Hill (64816); Evanston (64817); Mt Manning Range (64764-5, 64788-9); 25 km NE Pittosporum Rockhole (67158, 67168-70); near Mt Jackson (67027, 67046, 72086, 76107, 76111, 76129); 15 km NE Bungalbin Hill (76188) and 12 km NNE (72134); 3 km S Walyahmoning Rock (95866, 95938).



Figure 2 A *Lerista m. macropisthopus* from Bungalbin Hill, photographed in life by G. Harold.

***Lerista macropisthopus remota* subsp. nov.**

**Holotype**

42282 in Western Australian Museum, collected by W.H. Butler on 22 September 1972 at Coondra Coondra Spring, Robertson Range, Western Australia, in 23°06'S, 121°02'S.

**Diagnosis**

Most like *L. m. macropisthopus* but having paler coloration and some pattern (head stippled and back dotted with dark brown).

**Description** (of single available specimen)

Snout-vent length (mm): 80. Length of appendages (% SVL): foreleg 4.0; hindleg 15.5; snout to foreleg 22.5.

Nasals narrowly separated. Prefrontals widely separated. Frontoparietals narrowly separated, smaller than interparietal. Nuchals 3-4. Supraoculars 3, first two in contact with frontal. Supraciliaries 1 + 3. Upper labials 6. Midbody scale rows 20. Lamellae under longest toe 11-12.

Dorsal and upper lateral surfaces brown. Head and upper lips heavily stippled with dark brown. On body 10 rows of indistinct dark brown dots, each passing through a dorsal or upper lateral scale. Ventral and lower lateral surfaces whitish, except for pale grey under hands and toes.

**Distribution**

Only known from one locality in arid central interior of Western Australia (40 km NE Jiggalong).

***Lerista macropisthopus fusciceps* subsp. nov.**

Figure 3

**Holotype**

71118 in Western Australian Museum, collected by P. Griffin on 27 August 1980 at 2 km SSW Carnarvon, Western Australia, in 24°54'S, 113°39'E.

**Paratypes**

The 305 specimens listed under material.

**Diagnosis**

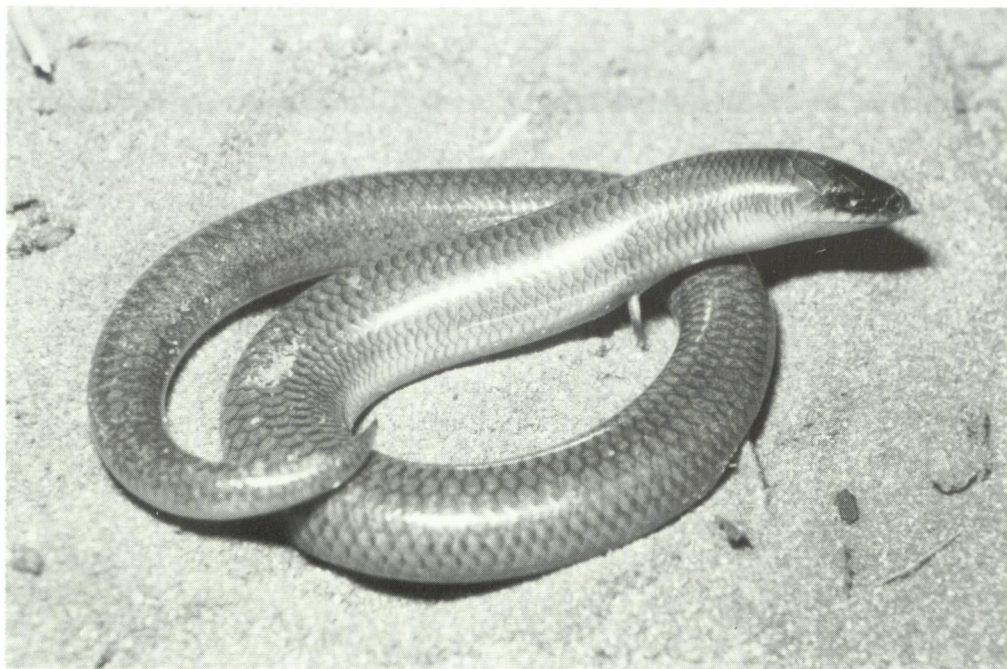
A subspecies of *L. macropisthopus* with 2 fingers, 3 toes and dark head contrasting with pale body and tail.

**Description**

Snout-vent length (mm): 36-100 (N 306, mean 69.2). Length of appendages (% SVL): foreleg 2.1-6.3 (N 58, mean 3.5); hindleg 11.8-18.7 (N 56, mean 14.9); tail 86-122 (N 68, mean 103.0); snout to foreleg 19.9-28.0 (N 57, mean 23.7).

Nasals narrowly to moderately separated (N 38) or in short contact (8). Prefrontals widely separated. Frontoparietals narrowly to moderately separated (N 42) or in point contact (3), slightly to much smaller than interparietal. Nuchals 1-7 (only one with more than 4, N 44, mean 2.8). Supraoculars 3, first two in contact with frontal. Supraciliaries 0 + 3 (N 19), 1 + 3 (102), 4 (3) or 5 (165). Upper labials 6. Midbody scale rows 18 (N 2), 19 (2) or 20 (41). Lamellae under longest toe 9-13 (N 46, mean 11.7).





**Figure 3** A *Lerista macropisthopus fusciceps* from Hamelin, photographed in life by R.E. Johnstone.

Dorsal and upper lateral surfaces pale to medium brown, greyish brown or brownish yellow, except for blackish or grey head (back to a little beyond eyes and down to top of upper labials) and occasionally dark dots on back. Ventral and lower lateral surfaces whitish except for brownish grey under hands and feet.

#### **Distribution**

Arid and semiarid mid-west of Western Australia from Yardie Creek south nearly to the lower Murchison (Eurardy and Meeberrie) and east to Waldburg, Karalundi and Poona.

#### **Geographic variation**

In the extreme north-west (Yardie Creek) the head is paler and the foreleg relatively longer than elsewhere, and here alone the predominant supraciliary formula is  $0 + 3$ . Immediately north and east of Lake MacLeod (Minilya, Manberry and Cooralya) the tail is pinkish, especially on the under side and in juveniles. Specimens from Waldburg in the far north-east have unusually long fingers.

#### **Derivation of name**

From Latin *fuscus* (dark) and *-ceps* (head).

#### **Material**

*North-West Division (WA)*: Yardie Creek (51028) and 5 km N (6142) and 4 km E (89798-805); 1 km W Bullara (89605-8, 98125-6); 25 km SW Winning (81834); 20 km ESE Warroora (98133); 9 km NNW Minilya

Roadhouse (76595-8, 76646-55, 89929-32); 18 km E Gnaraloo (76574) and 5 km SE (71540, 71595) and 9 km SE (76716) and 15 km SE (76759); 10 km W Manberry (76845-7) and 14 km WSW (89597-9, 89791-4); 5 km ENE Cobra (87663-4); 14 km SSE Mt Augustus (85270); 12 km S Waldburg (81210-1); 10 km N Boologooro (71370-1); 3 km NW Mardathuna (71490); 8 km W Cooralya (76861-8) and 27 km E (71384) and 15 km ESE (89944) and 30 km SSE (89619-23); 10 km N Boolathana (89641-3); 22 km NNE Carnarvon (71079-80) and 12 km NE (71498) and 48 km E (71527-30) and 2 km SSW (71074-8, 71119); 12 km WNW Binthalya (95462) and 11 km W (71508-9); Mooka (39069); Landor (2708); 21 km SW Edaggee (89725-36); Wooramel (54605, 54742-5, 54956-62, 54972-81, 55016); 18 km N Yaringa (71129) and 14 km S (89705-9); Woodleigh (48007, 57388); 'presumably Karalundi' (42661); near Monkey Mia (91186-91, 94188); Denham (88701, 89375) and 8 km NE (89374); near Nilemah (92210, 92223, 92238, 92695, 92697, 92796, 92815, 92830, 92847-8, 92851, 92855, 92860, 92862, 92867, 92913, 93968, 94155); 40 km ENE Tamala (89694); near Hamelin (54925, 55204, 56478-80, 87911, 88584-5, 88670-2, 88687-8, 88713-4, 88723, 88738-42, 88749-51, 89573, 89587-8, 89637-8, 89647, 89650, 89668-70, 89688, 89780-3, 89829-30, 89842, 89888-9, 89919-23, 89940-1, 92183, 92201-2, 92298-300, 92340, 92390, 92394, 92475, 92491, 92583, 92600, 92634, 92637, 92667, 92669, 92676-7, 92680, 92689-90, 92721, 92774, 92783, 92913, 93872, 93886, 93894, 93906, 93937-8, 93940, 93964, 94146); Overlander (44528) and 6 km E (88725-31) and 24 km SSE (71060); Coburn (64392-3) and 17 km N (64430); 60 km ESE Meadow (95526); Wannoo (71064-6, 81411) and 7 km N (64335, 64398) and 6 km NNW (71136-41) and 6 km S (64310-1); Meeberrie (59686) and 40 km W (66196); Cooloomia (64370, 64386-7, 64435); 3 km SSW Nerren Nerren (71114) and 31 km SE (60645) and 38 km SE (60626) and 34 km SSE (59623); Poona (28944); Meka (29723).

*South-West Division (WA)*: 60 km N Galena (61401) and 46 km N (59018-9, 61361) and 40 km N (58787) and 32 km N (69847); 5 km E Eurardy (86860).

### *Lerista macropisthopus galea* subsp. nov.

#### Figure 4

#### Holotype

83228 in Western Australian Museum, collected by G. Harold on 7 March 1983 at 8 km S Galena, Western Australia, in 27°53'S, 114°42'E.

#### Paratypes

*North-West Division (WA)*: Murchison crossing, 122 km N Mullewa (60484).

*South-West Division (WA)*: 23 km ESE Kalbarri (33800); Galena (71050-1, 101242) and 8 km S (80726); Ajana (25220); 46 km NE Yuna (26505).

#### Diagnosis

Most like *L. m. fusciceps* but having 1 finger (occasionally 2), 2 toes and less contrast between colour of head and body.

#### Description

Snout-vent length (mm): 49-86 (N 10, mean 68.8). Length of appendages (% SVL): foreleg 2.5-3.8 (N 10, mean 3.4); hindleg 12.5-17.1 (N 10, mean 15.5); tail 95-107 (N 5, mean 101.5); snout to foreleg 23.0-26.6 (N 10, mean 24.2).

Nasals narrowly separated (N 8) or in short contact (1). Prefrontals widely separated. Frontoparietals narrowly to moderately separated, slightly to much smaller than interparietal. Nuchals 2-3 (N 10, mean 2.6). Supraoculars 3, first two in contact with frontal. Supraciliaries 1 + 3 (N 10). Upper labials 6. Midbody scale rows 20 (N 7), 21 (1) or 22 (2). Lamellae under longer toe 10-14 (N 10, mean 11.7).

Dorsal and upper lateral surfaces medium to dark greyish brown, darkest on snout and in loreal region. Ventral and lower lateral surfaces whitish except for grey under hands and feet.



**Figure 4** A *Lerista macropisthopus galea* from Galena, photographed in life by M. Peterson.

### **Distribution**

Semiarid and arid upper south-west of Western Australia, about the lower Murchison upstream to the Mullewa-Gascoyne Junction road.

### **Remarks**

In coloration it shows some tendency towards the nominate race, with which it shares a predominant supraciliary formula of 1 + 3 (in southern *L. m. fusciceps* 5 supraciliaries is almost as frequent as 1 + 3). Only the westernmost specimen of *L. m. galea* (33800) has two fingers.

### **Derivation of name**

Latin for helmet, in allusion to dark top of head.

### ***Lerista neander* Storr, 1972**

Figure 5

### **Diagnosis**

Very like *L. macropisthopus* but having 2 fingers, 2 toes and strongly spotted dorsum.



### Description

Snout-vent length (mm): 36-88 (N 25, mean 72.7). Length of appendages (% SVL): foreleg 2.5-5.7 (N 20, mean 3.7); hindleg 11.4-16.1 (N 21, mean 12.8); tail 99-117 (N 7, mean 107.7); snout to foreleg 22.1-31.4 (N 21, mean 24.0).

Nasals narrowly to moderately separated (N 25) or in very short contact (1). Prefrontals widely separated. Frontoparietals narrowly to moderately separated (N 23) or in point contact (1), smaller than interparietal. Nuchals 1-5 (N 23, mean 2.4). Supraoculars 3, first two in contact with frontal. Supraciliaries 0 + 3 (N 13) or 1 + 3 (13). Upper labials 6. Midbody scale rows 18 (N 1) or 20 (9). Lamellae under longer toe 8-12 (N 20, mean 10.4).

Dorsal and upper lateral surfaces pale to medium greyish brown (darkest on lores and top of upper labials) with dark brown stippling on head and tail and 8 (occasionally 10) rows of dark brown spots on body. Ventral and lower lateral surfaces whitish except for brownish dots or vermiculations on tail and pale grey under hands and feet and sometimes chin and throat.

### Distribution

Arid western plateau of Western Australia from the eastern Hamersley and Ophthalmia Ranges south to the head of the Gascoyne.



Figure 5 A *Lerista neander* from 21 km SE Bulloo Downs, photographed in life by R.E. Johnstone.



## Geographic variation

Specimens from the extreme south of range (96917-21) are darker than the others.

### Material

*North-West Division (WA)*: 4 km ENE Mt Maguire (94870); 31 km SE Mt Meharry (67924) and 36 km SE (67900-1); 6 km E Rhodes Ridge (88819-20); Newman (23988-9, 26528-9) and 38 km W (96922-3); 2 km S Capricorn Roadhouse (81321); 26 km SSW Tangadee (95638); 16 km SE Bulloo Downs (88813-7) and 21 km SE (81509); 6 km N Kumarina (87730) and 30 km S (96917-21).

## *Lerista desertorum* (Sternfeld, 1919)

Figure 6

### Diagnosis

A member of the *L. macropisthopus* group with 2 fingers, 3 toes, dark upper lateral stripe and 2 (occasionally 4) rows of small dark spots on back and tail.

### Description

Snout-vent length (mm): 39-93 (N 113, mean 73.4). Length of appendages (% SVL): foreleg 2.1-5.8 (N 53, mean 3.9); hindleg 13.0-18.9 (N 55, mean 15.7); tail 85-119 (N 33, mean 103.2); snout to foreleg 22.0-28.7 (N 54, mean 24.6).

Nasals narrowly to moderately separated (N 61) or in point contact (1). Prefrontals widely separated (fused to frontal on one side of one specimen). Frontoparietals narrowly to moderately separated (N 72), in point contact (9) or in short to moderate contact (10), slightly to considerably smaller than interparietal. Nuchals 1-4 (N 78, mean 2.8). Supraoculars 3, first two in contact with frontal. Supraciliaries 0 + 3 (N 105), 1 + 3 (4), 0 + 2 (2), 1 + 1 (1), 1 + 2 (1), 3 (1), 5 (1). Midbody scale rows 18 (N 6), 19 (1), 20 (50), 21 (3) or 22 (5). Lamellae under longest toe 9-14 (N 77, mean 11.4).

Dorsal and upper lateral surfaces greyish brown to pale reddish brown. Head stippled with dark brown. A paravertebral series of brown dots or small spots on back and tail, sometimes coalescing into a narrow stripe; occasionally an additional series of dots or small spots on back. Dark brown to blackish brown upper lateral stripe from lore to base of tail, 1-2 scales wide on body. Ventral and lower lateral surfaces whitish (often yellow in life), except for greyish brown under hands and feet and often brown dots under tail.

### Distribution

Arid eastern interior of Western Australia, from Lake Disappointment and the Rawlinson Range south nearly to Kitchener and north edge of Nullarbor Plain. Also south of Northern Territory and north-western South Australia.

### Material

*Eastern Division (WA)*: Durba Spring 54401-2; Carnarvon Range (51872); 5 km N Giles (34155); Winburn Rocks (20726); Barrow Range (20724); near Warburton (15146, 15176, 18224, 22000, 22060, 22089-90); Lake Wells (1607); 18 km NW Nuendah (82572-3); Yeelirrie (82574-80); Altona (87456); near Albion Downs (8787, 30596, 30963); Wanjarri (16903, 19766, 27229, 40739-41); Lake Throssell (15709); 8-9 km SE Banjarn (69335, 74746, 74790) and 12-13 km SE (66016-7, 66037-8, 74754-5, 74762, 74767, 74787); 7-8 km WNW Point Salvation (85627-31); White Cliffs (20662) and 15 km ENE (85284-5); 21 km NNW Mt Windarra (78566); 13 km ENE Laverton (85320-1); Burtville (86755-7); Mt Morgans (85293-4, 86715-20) and 8 km SW (25953); 10 km N Leonora (86657); Glenorn (3785); Linden (46625); 3 km NE Mt Linden



**Figure 6** A *Lerista desertorum* from Big Shot Bore, photographed in life by G. Harold.

(65930-4, 72874) and 8 km SSE (72770, 72884) and 10 km SSE (65941-3, 72785-7); 67 km SE Blue Robin Hill (91461, 92030) and 70 km SE (92034, 92037; 45 km ENE Lake Colville (92032) and 39 km E (91910), 92031, 92035, 92050) and 40 km E (91912, 92036) and 42 km ESE (92027); 102 km NNW Forrest (91294-5, 92033, 92053) and 95 km NNW (92038) and 94 km NNW (91293, 92929); 48 km NNE Kitchener (96744) and 36 km NNE (96745).

*Northern Territory*: 20 km S Alice Springs (74065-6); Kulgera (24472).

### ***Lerista bunglebungle* sp. nov.**

#### **Holotype**

103484 in Western Australian Museum, collected by N.J. Gambold on 8 December 1989 in Bungle Bungle National Park, Western Australia, in 17°29'S, 128°22'E.

#### **Diagnosis**

A member of the *L. macropisthopus* group with 2 fingers, 3 toes and dark dorsal spots and upper lateral stripe, most like *L. desertorum* but having contiguous nasals, 4 supraciliaries and 6 rows of dorsal spots.

#### **Description** (of single available specimen)

Snout-vent length (mm): 59. Length of appendages (% of SVL): foreleg 5.1; hindleg 14.5; snout to foreleg 25.1.

Nasals in short contact. Prefrontals widely separated. Frontoparietals narrowly

separated, smaller than interparietal. Nuchals 1-2. Supraoculars 3, first two in contact with frontal. Supraciliaries 4, first largest, last much the smallest. Midbody scale rows 22. Lamellae under longest toe 11.

Dorsal and upper lateral surfaces pale brown. Head stippled with dark brown. Six series of dark brown dots on back, becoming larger and less regular on tail. Dark brown upper lateral stripe from nasal to base of tail, diffuse and ragged-edged on head, slightly more than one scale wide on body, and replaced by two series of small irregular spots on tail. Ventral and lower lateral surfaces of body brownish white, scales faintly edged with brown. Ventral and lower lateral surfaces of tail brownish white, irregularly spotted with blackish brown. Limbs brownish white, their upper surface smudged with brown.

#### **Distribution**

Bungle Bungle Range in semiarid east Kimberley.

#### **Remarks**

The discovery of this species in the far north-east of Western Australia constitutes a large northward extension of known range in the *Lerista macropisthopus* group. It joins other central and southern skinks that have an outlying population in east Kimberley, viz. *Ctenotus alacer*, *C. schomburgkii* and *Egernia slateri*.

### *Lerista puncticauda* sp. nov.

#### **Holotype**

100809 in Western Australian Museum, collected by D. Pearson on 15 December 1988 at 25 km NNE Queen Victoria Spring, Western Australia, in 30°14'S, 123°41'E.

#### **Paratypes**

*Eastern Division (WA):* 25 km NNE Queen Victoria Spring (100808, 100810, 100883).

#### **Diagnosis**

A member of the *L. macropisthopus* group with 2 fingers, 3 toes and little pattern apart from brown-dotted whitish tail.

#### **Description**

Snout-vent length (mm): 63-86 (N4, mean 76.2). Length of appendages (% SVL): foreleg 3.6-4.6 (N4, mean 4.0); hindleg 17.2-19.0 (N4, mean 17.8); tail 94-100 (N3, mean 96); snout to foreleg 23.0-27.6 (N4, mean 24.4).

Nasals narrowly to moderately separated. Prefrontals widely separated. Frontoparietals narrowly separated, smaller than interparietal. Nuchals 2-4. Supraoculars 3, first two in contact with frontal. Supraciliaries 0 + 3 (0 + 1 on one side of one specimen). Upper labials 6. Midbody scale rows 20. Lamellae under longest toe 11-13.

Head greyish brown, except for spotty dark brown loreal streak. Neck and back greyish brown, with or without a series of narrowly to widely separated dark brown upper lateral spots. Tail brownish white, heavily dotted with brown. Chin pale greyish brown. Under tail brownish white, with or without brown dots. Remaining under surfaces and limbs greyish white.

#### **Distribution**

Only known from extreme south-west of Great Victoria Desert.



**Remarks**

Its supraciliary formula, subcaudal pattern and incipient upper lateral stripe indicate a closer relationship to *L. desertorum* than to *L. macropisthopus*.

**Derivation of name**

From Latin *punctum* (dot) and *cauda* (tail).

***Lerista axillaris* sp. nov.**

Figure 7

**Holotype**

97212 in Western Australian Museum, collected by G. Harold on 11 July 1987 at 21 km S Kalbarri, Western Australia, in 27°52'S, 114°10'E.

**Diagnosis**

A member of the *L. macropisthopus* group with 2 fingers, 3 toes and movable eyelids, most like *L. macropisthopus* but having a dark upper lateral stripe, yellow venter, more elongate body, shorter limbs and a much longer and deeper forelimb groove.



Figure 7 Holotype of *Lerista axillaris*, photographed in life by R.E. Johnstone.

**Description** (of single available specimen)

Snout-vent length (mm): 87. Length of appendages (% SVL): foreleg 2.9; hindleg 10.9; tail 83; snout to foreleg 20.7.

Nasals narrowly separated. Prefrontals widely separated. Frontoparietals separated, much smaller than interparietal. Supraoculars 3, first two in contact with frontal. Supraciliaries 1 + 3. Upper labials 6. Nuchals 2. Midbody scale rows 20. Lamellae under longest toe 11.

Upper surface greyish brown, becoming darker on head (especially in loreotemporal region and on top of upper labials), back and tail finely flecked with blackish brown. Narrow blackish brown upper lateral stripe from ear to base of tail. Upper surface of limbs blotched with dark greyish brown. Lower surfaces whitish (yellow in life), except for dark brownish grey under hands and feet.

**Distribution**

Only known from one locality south of the mouth of the Murchison.

**Derivation of name**

From Latin *axilla* (armpit), in allusion to the peculiar forelimb groove.

**Reference**

Storr, G. M. (1972). The genus *Lerista* (Lacertilia, Scincidae) in Western Australia. *J. Proc. R. Soc. West. Aust.* **54**: 59-75.