

## A new species of *Lerista* (Lacertilia: Scincidae) from Western Australia, *Lerista eupoda*

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### Abstract

The new species of skink, *Lerista eupoda*, described here is most like *Lerista gerrardii*, from which it differs in having more digits (two fingers and three toes rather than one finger and two toes) and more supraciliaries (usually five rather than four). *Lerista eupoda* is confined to the semi-arid interior of Western Australia.

### Introduction

The late GM Storr's last seven taxonomic papers dealt with the speciose skink genus *Lerista*. Two of these papers reviewed the *macropisthopus* species-group (Storr 1991a, 1991b). Together, they revised all of the taxa assigned to the group except *Lerista gerrardii*, which was presumably omitted because the accession of many more specimens since the previous revision (Storr 1972) had done little to change the concept of *gerrardii*. The new species described here was brought to Storr's attention by G Harold who collected three specimens near Cue, Western Australia. The subsequent collection of more specimens, which are all consistent in their digital formula, indicates they represent an undescribed taxon.

None of the ten species of *Lerista* already described from Western Australia, that have a digital formula of 2+3, approach the new species in terms of their gross morphology or colour pattern. *Lerista borealis*, *L. bunglebungle* and *L. walkeri* are endemic to the Kimberley region, and have dorsal patterns reduced to rows of dots; *L. planiventralis* is a highly specialised, sharp-snouted burrower with an acute ventrolateral flange, paravertebral rows of dots and a dorsolateral stripe; *L. lineata* has a fixed eyelid, paravertebral lines, a dorsolateral stripe and only 16 midbody scale rows; and *L. allochira* is a small (up to 37mm SVL), almost patternless species, allied to *L. muelleri*.

The remaining species, *Lerista axillaris*, *L. desertorum*, *L. puncticauda* and *L. macropisthopus* occur in the arid and semi-arid regions of southern Western Australia. None of these species has a solid vertebral stripe like the new species; in fact, *L. macropisthopus*, the only species that has a digital formula of 2+3 and is sympatric with the new species, is patternless.

The new species is compared with *Lerista gerrardii*. Although *L. gerrardii* has fewer fingers and toes (1+2, sometimes 0+2), their dorsal patterns are identical. That the new species has a distribution that is almost sympatric with *L. gerrardii* suggests that it is a new species rather than a subspecies.

Notation used by Storr (1984, 1991a) to score supraciliary fusions is adopted here to describe certain

conditions in *L. eupoda* and *L. gerrardii*. The various degrees of fusion are as follows; second supraciliary fused with first supraocular (1+3); first and second supraciliary fused with first supraocular (0+3); first supraciliary fused with first supraocular (0+4); second supraciliary fused with first supraocular, third and fourth supraciliary fused (1+2); first and second supraciliary fused to first supraocular, third and fourth supraciliaries fused (0+2); second supraciliary fused with first supraocular and a very small extra supraciliary posterior to fused scales (1+4).

All specimens examined are housed in the Western Australian Museum.

### Systematics

*Lerista eupoda* sp. nov.

#### Holotype

R103943, a male in Western Australian Museum, collected by G Harold on 15 February 1990 at 14 km NNE Cue, Western Australia, at 27°19'S, 117°57'E.

#### Paratypes

North-west Division (WA); 16 km NNE Cue (103944); 35 km SSW Meekatharra (108853-54); 70 km NNE Cue (104363, 120153-54); Telegoothera Hill (87814).

#### Diagnosis

Distinguished from *Lerista gerrardii*, which has 1 finger (sometimes a stump) and 2 toes, and rarely more than 4 supraciliaries, by having 2 fingers, 3 toes and mostly 5 supraciliaries, and from *Lerista desertorum* by having more supraciliaries and a solid blackish-brown vertebral stripe (*desertorum* usually has 0+3, very rarely five supraciliaries, and a paravertebral series of brownish dots).

#### Description

Snout-vent length 40-87 mm; sexed males 60-87 mm (n=5), females 56-77 mm (n=2). Length of appendages (% of SVL): forelimb 3.4-5.0%, hindlimb 13.0-17.5%, snout to forelimb 23-25%. Eyelid moveable.

Nasals narrowly separated (n=6) or in contact (n=2). Prefrontals widely separated. Frontoparietals narrowly

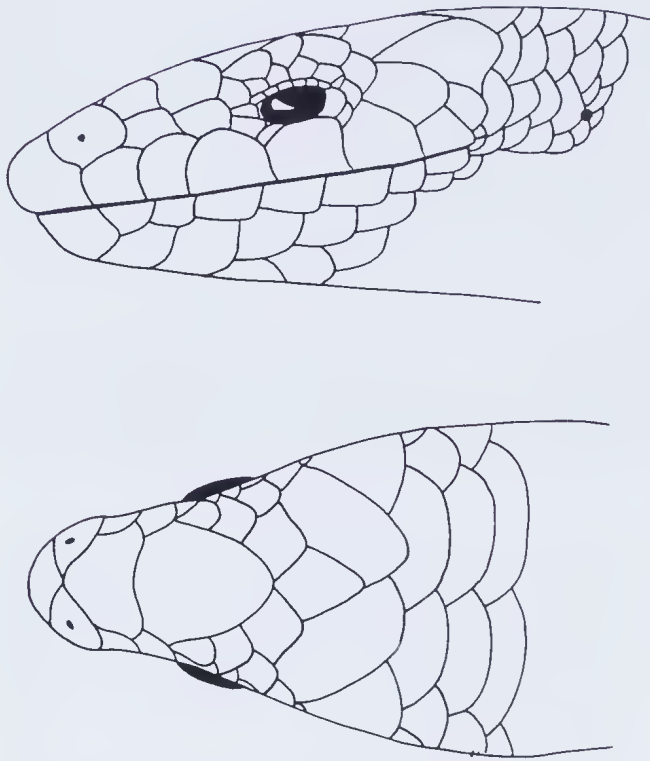


Figure 1. Head of holotype of *Lerista eupoda* (R103943).

separated, smaller than interparietal. Nuchals 2 or 3. Supraoculars 3, first 2 in contact with frontal. Supraciliaries 5 (1+3 one specimen), second and last smallest. Upper labials 6. Three temporals, upper secondary much the largest, lower secondary much the smallest (see Figure 1). Midbody scale rows 20. Paravertebrals; males 82-92 (n=5, mean 84.0), females 89-91 (n=2, mean 90.0). Lamellae under longest toe 11-16.

Upper surfaces brownish-white or very pale brown. Broad brownish-black vertebral stripe (more than one scale wide) from nape to base of tail, after which it breaks up into two series of angular blackish-brown spots. Broad brownish-black upper lateral stripe (nearly two scales wide) from nasal to base of tail, after which it

breaks up into three series of angular blackish-brown spots or a series of narrow, curving vertical bars. Upper surfaces of limbs stippled blackish-brown. Lower surfaces whitish (see Fig 2).

#### Distribution

Only known from the arid southern interior between Cue and Meekatharra (Fig 3).

#### Habitat

Open mulga on red loams and sandy loams.

#### Comparison with other species

Despite the fact that two of the other seven members of the *Lerista macropisthopus* species-group with two fingers and three toes (*L. macropisthopus macropisthopus* and *desertorum*) are sympatric or geographically close to the new species (Storr 1991a), it is more pertinent to compare it with *L. gerrardii*. Digital formulae aside, the details of colour pattern for *eupoda* are almost identical to *gerrardii*. This, together with the observation that *L. gerrardii* and *L. eupoda* are probably sympatric NW of Cue (Woolgorong Rock where *L. gerrardii* has been collected, is only about 20 km SW of Telegoothera Hill, the most south-westerly locality for *L. eupoda*) led to the comparison of *eupoda* with a series of 72 *L. gerrardii* specimens (see specimens examined).

As is the case for other members of the *L. macropisthopus* species-group, fusion of supraciliaries with supraoculars occurs in *L. gerrardii*. Most of the supraciliary-supraocular fusions involve the first supraocular and the first and second supraciliary. Fusion of the first supraciliary, first two supraciliaries, and the second supraciliary (0+4, 0+3 and 1+3 respectively) to the first supraocular account for 93% of the variation in the supraciliary series in *L. gerrardii*, which without fusions, would have to complete series of five supraciliaries. The remaining seven percent of variation is caused by the occasional fusion of the third and fourth supraciliary (0+2, 1+2) or, in rare cases, the splitting of a supraciliary (1+4).

Proportions of various conditions of fusion in *L. gerrardii* were as follows (where possible condition of both sides of each specimen scored); 1+3 (n=53); 0+3



Figure 2. *Lerista eupoda* specimen R104363 (photograph by B Maryan).

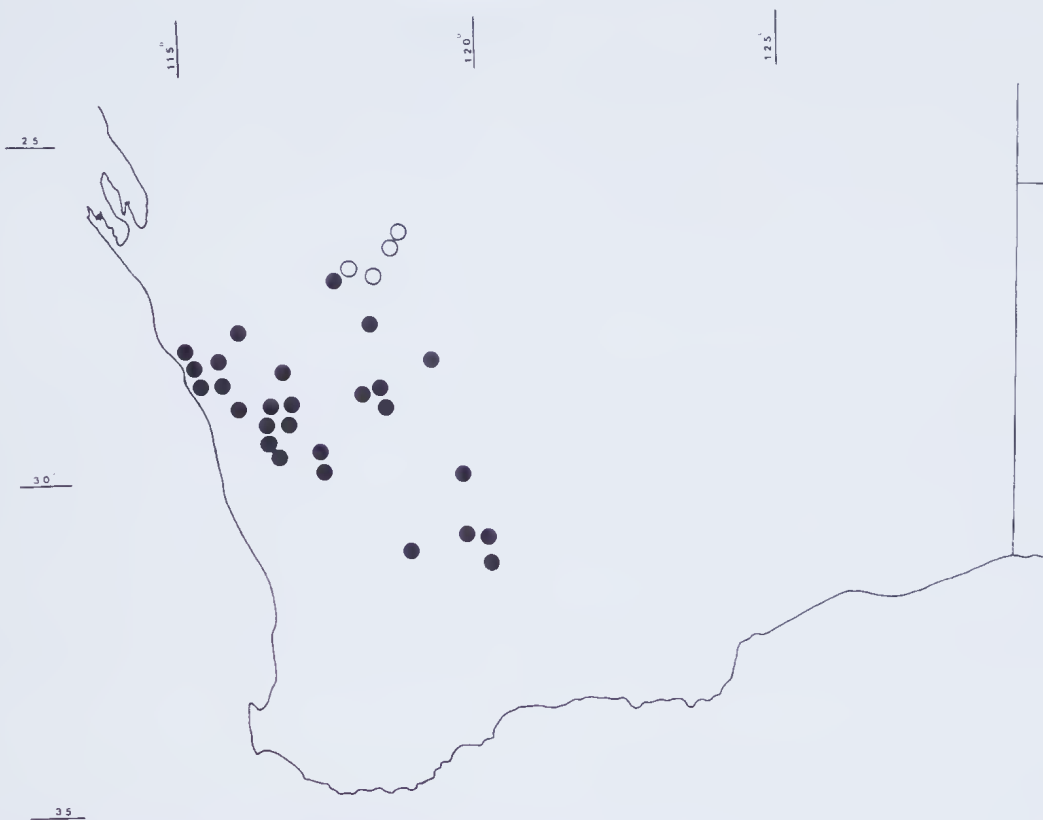


Figure 3. Map showing the distribution of *Lerista gerrardii* (●) and *Lerista eupoda* (○).

( $n=34$ ); 0+2 ( $n=3$ ); 1+2 ( $n=3$ ); 0+4 ( $n=3$ ); 1+4 ( $n=1$ ). The supraciliary configuration for 13 (19%) of specimens was different on either side of the head; the combinations included 1+3, 5 (5 specimens); 1+3, 1+2 (2 specimens); 0+3, 1+2 (2 specimens); 0+3, 0+2 (1 specimen); 0+3, 1+3 (1 specimen); 0+3, 1+4 (1 specimen); 1+3, 0+4 (1 specimen).

Snout-vent lengths of male *L. gerrardii* ranged from 36–80 mm ( $n=25$ , mean 70.2), females 56–91 mm ( $n=29$ , mean 76.7 mm). Paravertebral counts for males ranged from 75–102 ( $n=22$ , mean 90.5), females 83–107 ( $n=24$ , mean 92.2).

The distributions of *L. eupoda* and *L. gerrardii* abut and it could be argued that the distinguishing characters of *L. eupoda* are only part of the variation of *L. gerrardii*. If having extra digits was all that characterised *L. eupoda* then this could be the case, but the localised shift in digital formula is matched, almost exactly, in a shift in the proportion of specimens with a complete series of supraciliaries (87% in *L. eupoda*, 5% in *L. gerrardii*). Furthermore, the digital and supraciliary variation present in *L. gerrardii* is scattered and not concentrated in the northeast where it would be expected were there intergradation between the two taxa. The only specimen of *L. gerrardii* with two uninterrupted series of supraciliaries (5+5) is from Georgina; the five specimens of *gerrardii* with a series of five supraciliaries on one side are from widely scattered localities such as the Northampton district, Pindabunna and Toomey Hills while specimens with fingers reduced to a stump came from Northampton, Wubin, Jibberding and Southern Cross.

#### Specimens examined

*North-west Division* (WA): Walganna Rock (95290);

Woolgerong Rock (97028-29); 15 km N Mt Magnet (88801-02); 40 km NE Paynes Find (83187, 83204-206); 30 km NNE Paynes Find (108855); 19 km NNE Paynes Find (117306); 11 km NNE Paynes Find (84145); 10 km NNE Paynes Find (91133); 10 km NNE Pindabunna (83802, 83805-06).

*South-west Division* (WA): 8 km W Tallering Peak (115068-69); 5 km N Northampton (115866); Northampton (176, 25960, 31973-74, 66193-94, 71047, 73102-03); Naraling (119168-70); Howetharra Hill (95864); East Chapman (4430); Chapman Valley Research Station (49947-49950); Newmarracarra (1729, 3847); Geraldton (8597); 10 km S Mugga Mugga Hill (98161-98164); Moonyanooka (53693); 5 km ESE Mt Kenneth (108295); Georgina (114681); Mingenew (34103); Lochada (96628); Morowa (39160); 29 km SW Morowa (56831); Perenjori (943); 45 km NE Wubin (113567-68); 66 km NE Wubin (11004); 13 km NE Jibberding White Well (28263); Jibberding (81629); Winchester (3847); Coorow (6941, 10145); Maya (27914); 26 km NE Dalwallinu (58176); Merredin (7351).

*Eastern Division*: 7.5 km E Yuinmery HS (66052, 66059); 13 km NE Bungalbin Hill (94485); 16 km SSW Mt Jackson (hill) (76105); Southern Cross (34577); Yellowdine (97758); 15 km E Toomey Hills (78795, 78805); 15.5 km S Toomey Hills (71841); Toomey Hills (117372).

#### Etymology

From Greek *eu* (well) + *pod* (foot). An allusion to the extra digits (compared to *L. gerrardii*).

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### References

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