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A NEW SPECIES OF SCINCID LIZARD OF THE GENUS *LEIOLOPISMA* (SCINCIDAE:LYGOSOMINAE) FROM SOUTHEASTERN QUEENSLAND AND NORTHEASTERN NEW SOUTH WALES

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ABSTRACT

Leiolopisma zia sp. nov. is an egg laying skink found only in rainforest and antarctic beech forests of northeast New South Wales and southeast Queensland.

INTRODUCTION

Lizards of the genus *Leiolopisma* (*sensu* Greer 1974) are a major component of the cool and cold temperate reptile faunas of Australia (Rawlinson, 1975). Until recently, only one species, *L. platynota,* was known to occur as far north as northeastern New South Wales and southeastern Queensland (Cogger, 1979,p.580). Another species, here described as *L. zia* sp. nov., has been collected in this area.

Abbreviations used in text: SVL — snout-vent length; TL — tail length; HW — head width; AG — distance between the axilla and groin; FL — length of fore limb; HL — length of hind limb. Numbers prefixed by J are specimens housed in the Queensland Museum and by R, in the Australian Museum.

Ratios are expressed as percentages and measurements are in millimetres.

Leiolopisma zia sp. nov.
Fig. 1.

HOLOTYPE: J 30563, adult male, Mt. Superbus State Forest, SE Queensland, (28° 13S, 152° 26E) collected by R. Sadlier on 1–2 Jan, 1978.

PARATYPES: Qld.: J26025, Cunningham's Gap; J 30213, 30555–62, Mt. Superbus State Forest; N.S.W.: J 27787–8, 27793, Tweed Lookout, Wiangarie State Forest; J 27855–8, Brindle Crk., Wiangarie; R 49178, 74709–18, Rainforest end of Softwood Rd., Styx River State Forest; R 54619, Marengo State Forest.

DIAGNOSIS: *L. zia* can be distinguished from all other *Leiolopisma* by the following combination of characteristics: rainforest dwelling, egg-laying skink with small limbs (FL/SVL 17–22; HL/SVL

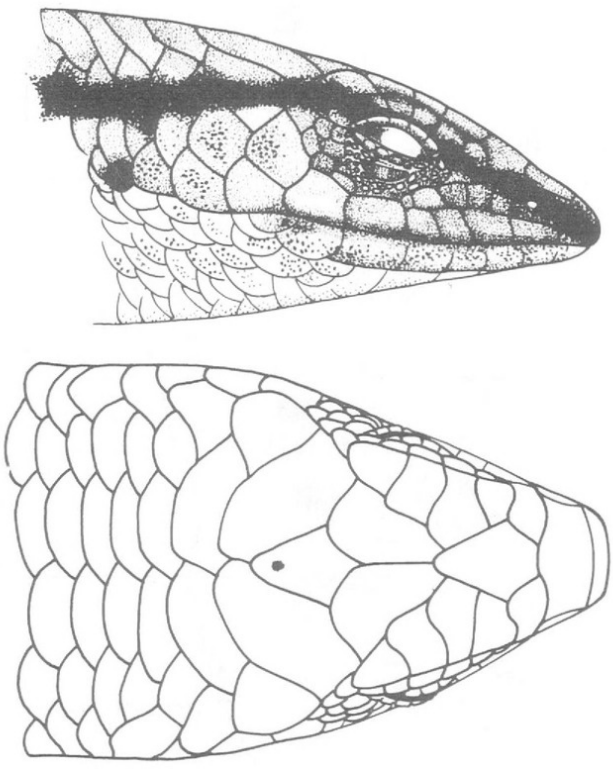

FIG. 1. *Leiolopisma zia*
Above. Lateral view of head.
Below. Dorsal view of head.

23–29), divided frontoparietal, a high number of supraciliaries (usually 7 or 8), a low number of midbody scale rows (22–26) a very low number of lamellae under the fourth toe (14–17), a dark vertical midrostral dash, and in life with bright yellow from chest to vent.

DISTRIBUTION: Rainforests, including antarctic beech forests, of northeastern New South Wales and southeastern Queensland, from Cunningham's Gap in the north to Styx River State Forest in the south (Fig. 2).

DESCRIPTION OF HOLOTYPE: SVL 58·0, TL 92·0, TL/SVL 157, AG 34·0, AG/SVL 59·0, HW 7·4, HW/SVL 13·0, FL 11·0, FL/SVL 19·0, HL 14·5, HL/SVL 25·0. No supranasals or postnasal scales. Rostral and frontonasal in broad contact.

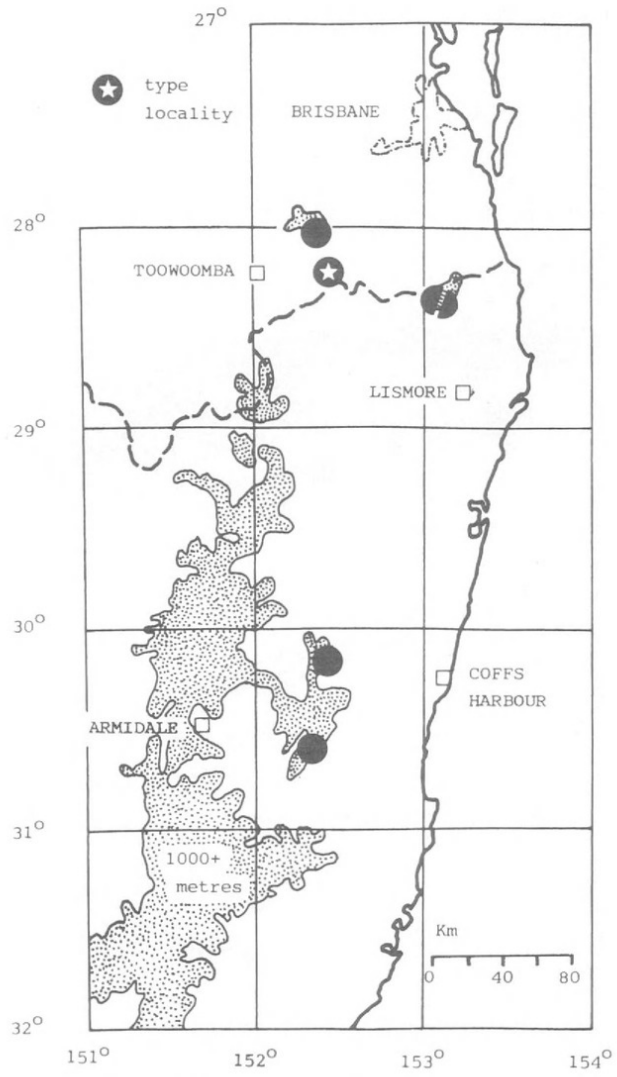

FIG. 2. Distribution of *Leiolopisma zia*

Frontal and frontonasal in narrow contact. Prefrontals large, fail to meet, contact the frontonasal, anterior and posterior loreals, first supraciliary, first supraocular and frontal. Anterior and posterior loreals large, former smaller than latter. Frontoparietals divided. Interparietal separate, large, about three-quarters size of a frontoparietal. Parietals large, contact along midline. One very enlarged pair of nuchals followed by a series of smaller pairs. Four supraoculars, the second largest. Seven supraciliaries. Ten upper ciliaries and 13 lower ciliaries on right eye, sixth and seventh upper ciliaries project outwards. Lower eyelid moveable with a large transparent palpebral disc bordered above by the lower ciliaries but otherwise surrounded by small granular scales. Length of palpebral disc 1·0. Length of eye 2·3. Seven upper labials, fourth and fifth below eye. Ear opening obvious, tympanum sunken. Height of external ear opening 1·2. No ear lobules. Eight preanal scales, central pair enlarged. Subdigital lamellae black, undivided and rough, 15 under fourth toe. Palmar tubercles black, flattened asymmetrically with apical point directed distally. Midbody scales in 24 rows. Number of scales from chin to cloaca 62. Dorsal and lateral scales smooth with 3–5 striations. Ventral scales smooth.

COLOUR IN PRESERVATIVE: Dorsally brown with light brown and black fleckings; a light brown dorsolateral line edged in black, breaking up at base of tail. Upper lateral surface of body and head, dark brown grading into a pale lower lateral surface flecked with black. A black midrostral dash. Ventrally white, with black spots from chin to neck; palms and subdigital lamellae black.

DESCRIPTION OF PARATYPES: As for holotype except as follows: SVL 33–59 (N = 29, mean = 42·0). TL 38–80 (N = 7, mean = 62·5). TL/SVL 114–153 (N = 7, mean 133·3). HW 4–7 (N = 27, mean = 6·0). HW/SVL 10–13 (N = 27, mean = 12). AG 20–39 (N = 29, mean = 30·7). AG/SVL 56–66 (N = 29, mean 60·8). FL 6–11 (N = 29, mean 10·3). FL/SVL 17–22 (N = 29, mean = 19·1). HL 8–15 (N = 29, mean = 13·1). HL/SVL 23–29 (N = 29, mean 25·9). Supraciliaries (left and right sides counted) 6–9 (N = 58, mean = 7·5). Midbody scale rows 22–26 (N = 29, mean = 24·0). Number of scales from chin to cloaca 51–63 (N = 27, mean 57·0). Number of scales under fourth toe 14–17 (N = 27, mean = 15·6).

COLOUR IN LIFE: Dorsally dark to light brown with neck and head becoming increasingly bronzed towards the snout; distal half of the tail increasingly suffused with red-brown towards the tip. On the snout is a dark mid-rostral vertical dash. A dark dorsolateral line sharply margined above, begins at the rostral and breaks up behind the hind limb. Laterally, dark brown above becoming lighter below. Ventrally, bright yellow from chest to vent, sharply fading to off-white at base of tail; distal part of tail suffused with red-brown; chin, throat and neck specked with black.

HABITAT: *L. zia* is found in moist areas in rainforests, including antarctic beech (*Nothofagus moorei*) forests. Specimens are abundant in both clearings and undisturbed areas.

FIELD NOTES.

All specimens taken at the Softwood Road, Styx River State Forest, N.S.W., on the 19 November, 1977 were under flat rocks. No active specimens were seen, presumably because of cool conditions. Species of skink synchronsympatric with *L. zia* were *Lampropholis* cf. *L. challengeri* which forages in clearings, on tracks and wherever sunlight penetrates to the ground; *Sphenomorphus murrayi* inhabiting burrow systems in and under rotting logs; and *Sphenomorphus* cf. *S. tympanum* inhabiting fallen rotting timber mazes at the forest's edge.

An examination of gut contents of *L. zia* revealed the remains of insects and an oligochaete earth worm.

REPRODUCTION

Table 1 is a summary of available reproduction data. *L. zia* is an egg-laying skink. The females carry and presumably also deposit between 3 and 6 eggs (mean 5·2), by early January. In males, the testes are well developed in mid-November and mid-December but are much reduced in size by mid-March. Mating was not observed, but the condition of the testes suggests that insemination possibly occurs in spring (October to November) and/or soon after egg deposition in mid-summer. The latter strategy seems more likely and implies that females store sperm through the winter, as has been reported for *L. coventryi* (Rawlinson,

TABLE 1: SUMMARY OF REPRODUCTIVE DATA FOR *LEIOLOPISMA ZIA*.

Collection date	Males	Females
(seasonally ranked)	reproductive condition	reproductive condition
19 Nov 1977 (Softwood Road)	all with well developed testes	all with well developed eggs in oviducts.
	R74710	*oviducts* L R
	R74712	3 3 R74709
	R74714	2 3 R74711
	R74715	3 3 R74713
13 Dec 1977 (Softwood Road)	with well developed testes, R74717	R74716 laid 3 eggs in captivity between 24.xii.1977 and 31.xii.1977 (see below for oviposition details), R74718 an immature subadult.
3 Jan 1975 (Softwood Road)		no oviduct eggs, oviducts large, convoluted but not noticeably distended. R49178
12 March 1976 (Marengo State Forest)	testes much reduced in size. R54619	

1975). This species also occurs in high rainfall cool temperate forests.

One captive female deposited 3 eggs in a shallow depression under a small mat of live moss in a vivarium between 24 and 31 December, 1977. She had scooped out the 25 mm deep x 50 mm long x 25 mm wide depression by pushing the moist (but not wet) soil sideways and upwards with legs and tail so that the depression was surrounded by a mound. The eggs were not covered with soil, but the nest was hidden from above by the mat of moss. Two of the three parchment shelled eggs were stuck together. On 11 February 1978 all three were measured: two live eggs, length both 11·4 mm, diameter 7·0 and 6·9 mm; one preserved egg (undissected), length 10·7 mm, diameter 6·5 mm. The live eggs did not hatch and when dissected on 16 March 1978, they contained the remains of well formed lizards with scales.

Two further females collected on 20 December, 1978 were housed in separate containers. Between 24 and 27 December, 1978, one of them deposited six eggs into an excavated burrow under bark and covered them with soil. Between 28 December, 1978 and 2 January, 1979, the other female deposited five eggs in almost identical fashion. On 18 January, 1979, four of all the eggs had collapsed. The remaining seven were measured and they had an average length of 9·9 mm, and an average diameter of 8·4 mm. None of these hatched and only one was found to contain a well developed embryo.

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LITERATURE CITED

COGGER, H.G. 1979. *Reptiles and Amphibians of Australia* 2nd edition. A.H. & A.W. Reed: Sydney.

GREER, A.E. 1974. The generic relationships of the scincid lizard genus *Leiolopisma* and its relatives. *Aust. J. Zool., Suppl. Ser.* **31**: 1–67.

RAWLINSON, P.A. 1975. Two new lizard species from the genus *Leiolopisma* (Scincidae:-Lygosominae) in southeastern Australia and Tasmania. *Mem. natn. Mus. Vic.* **36**: 1–16.