

ON THE OCCURRENCE OF THE LINED EARLESS DRAGON (*TYMPANOCRYPTIS LINEATA*) IN NEW SOUTH WALES

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INTRODUCTION

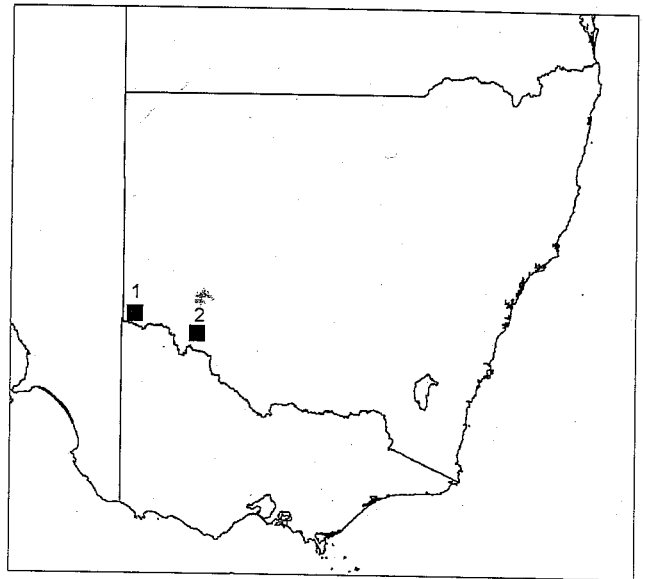
The Lined Earless Dragon (*Tympanocryptis lineata*) is a small, cryptic agamid lizard that is thought to occur widely across inland regions of continental Australia (Cogger, 2000; Wilson & Swan, 2003). In the south-east, the species has been previously recorded from a range of arid and semi-arid habitats in South Australia and Victoria (e.g. Robertson *et al.*, 1989; Coventry, 1996a,b; Houston, 1998) and, until recently, was considered to occupy similar environments throughout much of inland New South Wales (Swan, 1990; Smith *et al.* 1999; Cogger, 2000). However, the occurrence of the species within New South Wales has recently been questioned (Shea, 2002). Following a re-examination of all *Tympanocryptis* within the Australian Museum collection (by Greer & Smith, 1999), Shea confirmed that those specimens identified as *T. lineata* by Swan (1990) and Smith *et al.* (1999) were *T. tetraporophora* (based upon the presence of femoral pores), and concluded that there is no evidence that *T. lineata* occurs in New South Wales. However, few *Tympanocryptis* specimens were available from the south-west of the state (Greer & Smith, 1999; Shea, 2002).

During recent fieldwork in the far south-west of New South Wales, we collected and photographed several specimens of *T. lineata*. The following paper documents these records, and provides confirmation that *T. lineata* does occur in New South Wales.

OBSERVATIONS

Observations were made during two surveys for threatened vertebrates in south-western New South Wales, in the vicinity of Lake Victoria and Prungle Station (Fig. 1).

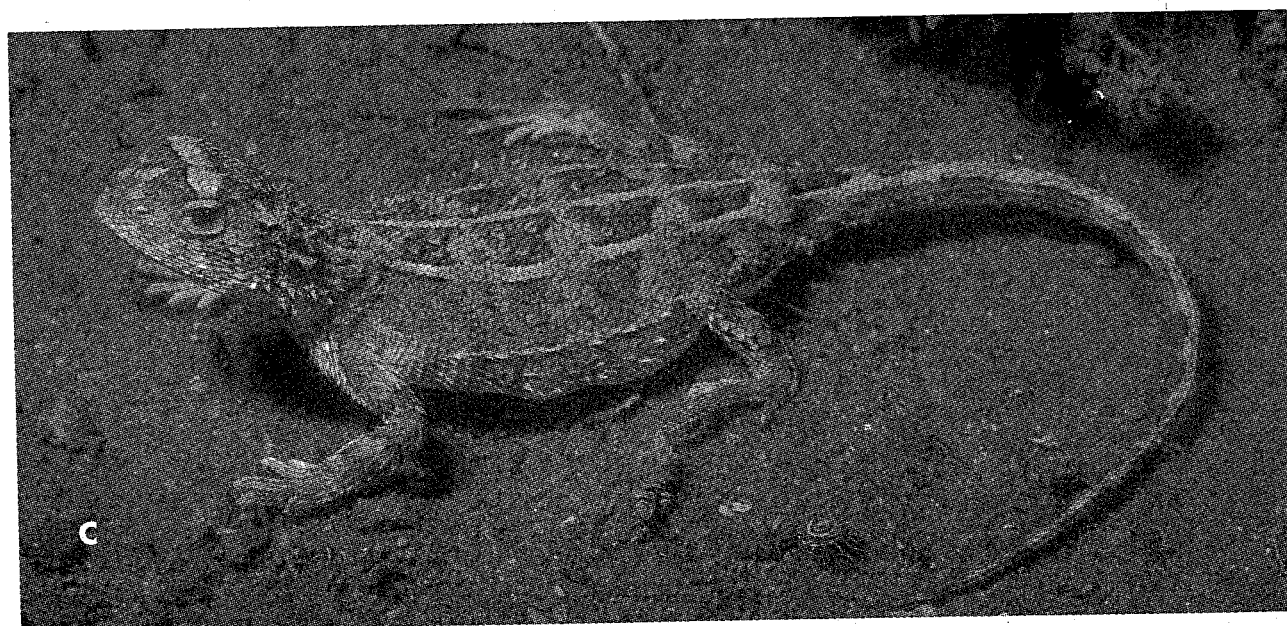
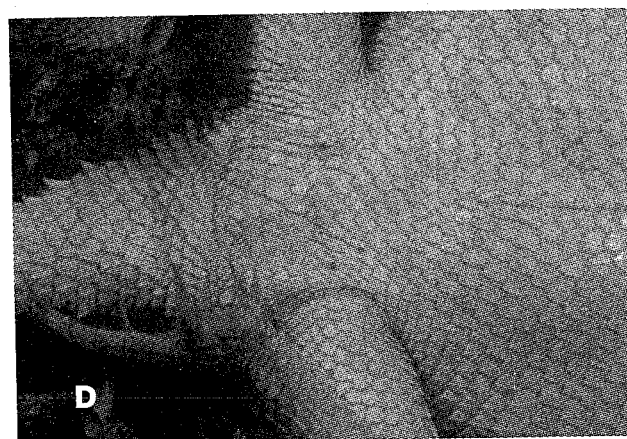
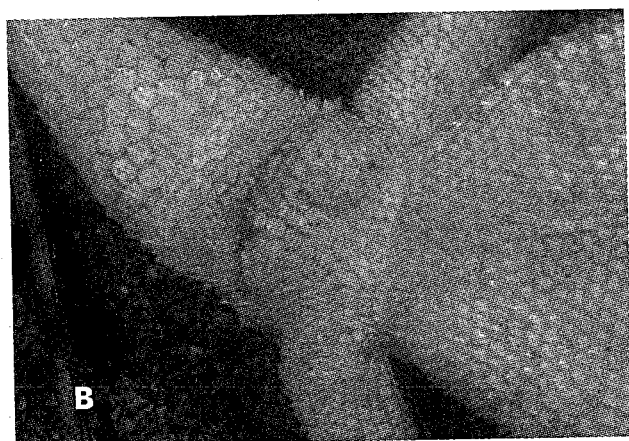
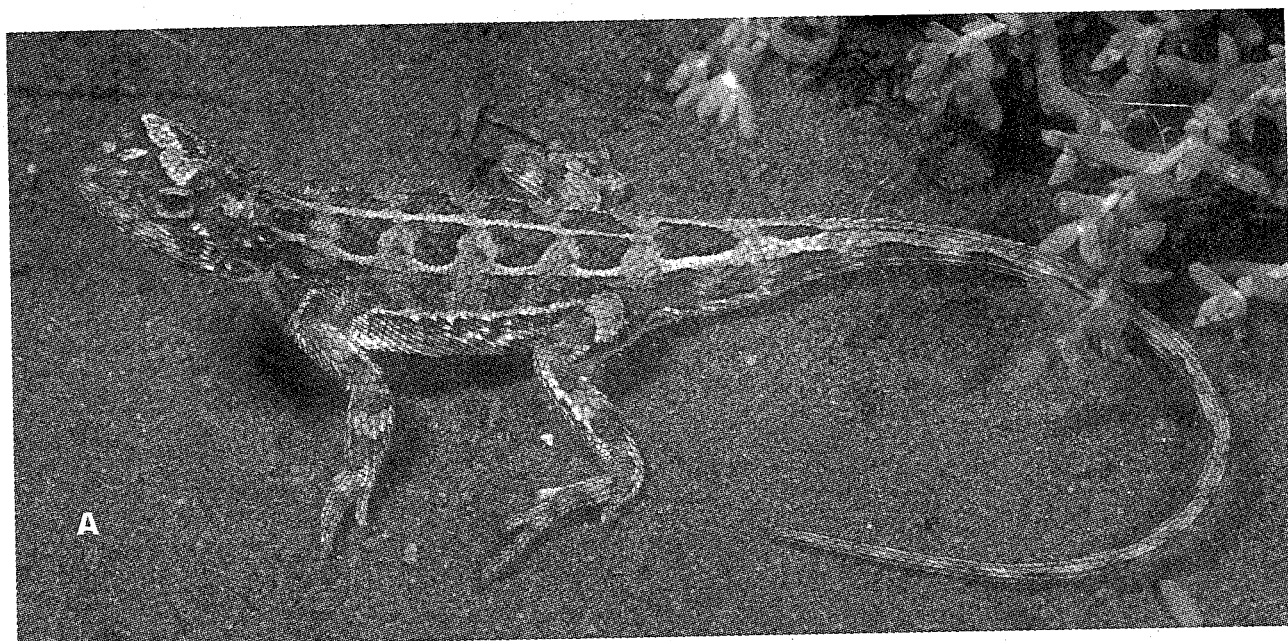
Figure 1. Broad location of the Lake Victoria (1) and Prungle (2) study areas.



Lake Victoria specimens

Lake Victoria is a large, elliptical deflation basin within the floodplain of the Murray River, approximately 60 km west of Wentworth in far south-western New South Wales. The lake, now maintained artificially as a water storage area, is situated in arid country (mean annual rainfall = 260 mm) with a diversity of surrounding habitats ranging from relatively mesic riparian vegetation (eg. River Red Gum, *Eucalyptus camaldulensis*, woodland) to open grasslands and chenopod shrublands (dominated by Bluebush, *Maireana* spp.; Sluiter & Robertson, 1999). Eleven specimens of *T. lineata* were caught in pit-fall traps at two sites between October 1998 and April 1999 (Sluiter & Robertson, 1999).

Figure 2. *Tympanocryptis lineata* from Lake Victoria, NSW. A – D69969 (adult male), dorsal pattern; B – D69969, ventral pattern displaying pre-anal pores; C – D70808 (adult female), dorsal pattern; D – D70808, ventral pattern displaying pre-anal pores. Specimen numbers are those of Museum Victoria.



Site 1.

Location: 34°01'25"S 141°13'10"E.

Date: 21-29 October 1998.

Weather conditions: Mild, sunny conditions throughout, mean daily maximum temperature = 23.8°C.

Habitat: Generally low, open shrubland dominated by Pearl Bluebush (*Maireana sedifolia*) and Black Bluebush (*Maireana pyramidata*) with occasional Dillon Bush (*Nitraria billadieri*). Soils were a calcareous red earth (Sluiter & Robertson, 1999). The site was grazed by cattle and sheep at the time of survey.

Notes: Nine *T. lineata* were captured in pitfall-traps (50 m drift fence, 10 - 20 litre buckets) during the nine day trapping period. All were considered to be adults based upon snout-vent length (SVL). Two specimens (one male, SVL = 49 mm, tail length = 86 mm; one female, SVL = 52 mm, tail length = 74 mm) were retained and subsequently lodged with Museum Victoria (D69969 and D70808 respectively). They possess the characteristic light bar between the eyes (Houston, 1998) and five light coloured dorsal cross-bars intersected by a distinct vertebral line, and parallel dorso-lateral lines (Fig. 2). Both specimens display a pair of pre-anal pores but lack femoral pores (Fig. 2). The female specimen was heavily gravid at the time of capture and expelled a clutch of six eggs prior to euthanasia. *Diplodactylus tessellatus*, *Ctenotus regius*, *C. schomburgkii*, *Lerista muelleri*, *Morethia adelaidensis* and *Ramphotyphlops bituberculatus* were also captured at this site.

Site 2

Location: 33°58'56"S 141°12'00"E.

Date: 27 April 1999.

Weather conditions: Mild, sunny conditions, day-time high temperature = 22.5°C.

Habitat: Similar to the previous site, having the same general soil characteristics and broad vegetation community (aeolian sand-

plain chenopod shrubland; Sluiter & Robertson, 1999). Black Bluebush (*Maireana pyramidata*) and Dillon Bush (*Nitraria billadieri*) were the dominant shrubs, while Knotty Speargrass (*Austrostipa nodosa*) and Little Medic (*Medicago minima*) were most abundant at ground-level.

Notes: Two *T. lineata* (SVL = 39 and 43 mm) were captured in pitfall traps over nine days in April 1999. Examination of pore structures prior to release revealed that both lacked femoral pores. *Ctenophorus pictus* and *Tiliqua rugosa* were also captured at this site.

Prungle Station specimens

All observations were made on Prungle Station, approximately 45 km north-east of Euston, NSW. The area is considered to be semi-arid (mean annual rainfall = 280 mm) and partly falls within the Willandra Lakes World Heritage Area. Vegetation on Prungle Station is characterised by a mosaic of mallee shrublands, open woodlands, shrub and grasslands, and intermittent wetlands. Eight *T. lineata* were located during inspections in July and October 2002.

Trip 1

Location: 34°12'43"S 143°00'19"E.

Date: 17 July 2002.

Weather conditions: Clear skies, cold, windy conditions, ca. 10°C.

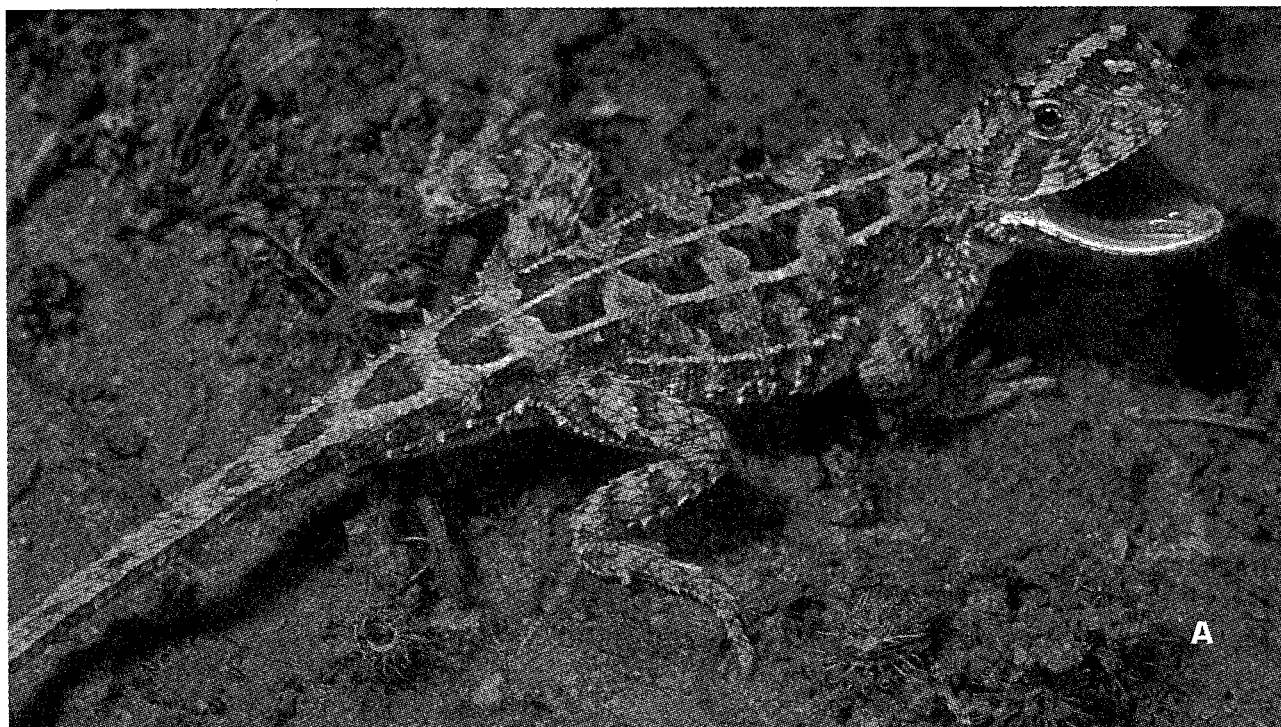
Habitat: Lake-bed grassland habitat with a sandy clay-loam substrate. Drought conditions prevailed at the time of survey and vegetation was dominated by weed taxa such as Little Medic (*Medicago minima*), Red Brome (*Bromus rubens*) and Common Barley Grass (*Hordeum glaucum*). A sparse cover of native perennial tussock grasses, including Rough Speargrass (*Austrostipa scabra* ssp. *falcata*) and Balcarra Speargrass (*A. nitida*) was also present. These native grasses proliferate in good-rainfall years and transform the grassland habitat (Sluiter & Robertson, unpubl. data.). The site is heavily grazed by sheep.

Notes: Six *T. lineata* were located over-winter-

ing beneath a series of overlapping iron sheets. All specimens were resting flush with the soil surface and appeared to be in torpor at the time of disturbance. One male (SVL = 45 mm, tail length = 81 mm) was retained and subsequently lodged with Museum Victoria (D61743). The specimen has a pair of pre-anal pores, but lacks femoral pores. It

also possesses the characteristic light bar between the eyes and five light coloured dorsal cross-bars intersected by a distinct vertebral line and parallel dorso-lateral lines (see cover photo). *Ctenotus olympicus*, *Menetia greyii*, *Morethia adalaidensis* and *Underwoodisaurus milii* were also recorded at this site.

Figure 3. Adult male (A) and female (B) *Tympanocryptis lineata* from Prungle Lake, NSW.



Trip 2

Location: Same as previous.

Date: 29 October 2002.

Weather conditions: Clear conditions, after hot sunny day, ca. 23°C.

Notes: A further two *T. lineata* (one male, one female) were captured under the same shelter site. Both specimens were photographed (Fig. 3) and released. Formal identification using pore structures was not undertaken. However, these specimens closely resemble those located during the winter months and were almost certainly *T. lineata*. The female specimen was heavily gravid at the time of capture. *Ctenotus olympicus* and *Morethia adelaidensis* were also present at this time.

DISCUSSION

While it remains possible that *T. lineata* is widely distributed in western New South Wales (there are 35 records of this species within the Atlas of NSW Wildlife [NPWS, 2003], including several recent records from the south-west of the state [see Fig. A7.22, p. 178, of Val *et al.*, 2001]), the occurrence of the species in New South Wales was previously based upon misidentified specimens of *T. tetraporphora* in the Australian Museum collection (Shea, 2002). Other major museums (eg. Queensland Museum, South Australian Museum, Museum Victoria) hold no other specimens of *T. lineata* from New South Wales (A. Amey, M. Hutchinson, J. Melville and D. Bray, pers. comm. respectively). Our surveys show that the species does occur in the state, although it may be confined to the extreme south-west corner. The distribution of the species in south-eastern Australia, as it is now perceived, includes the far north-western corner of Victoria (Robertson *et al.*, 1989; Coventry, 1996a,b; Smith *et al.*, 1999), the extreme south-western corner of New South Wales (this study), and South Australia, east of the Great Victoria Desert and Nullarbor Plain (Houston, 1998; Smith *et*

al., 1999). Assertions that it extends into central and western Queensland, the Northern Territory and Western Australia (Storr *et al.*, 1983; Covacevich & Couper, 1991; Cogger, 2000; Wilson & Swan, 2003), are based on populations now referred to as *T. centralis* or animals of uncertain taxonomic status (M. Hutchinson, pers. comm.).

The apparently limited distribution of *T. lineata* in New South Wales makes it prudent to review the conservation status of this lizard in the state. Where it occurs, it appears to be associated with grasslands or chenopod shrublands, as is the case in north-western Victoria (Robertson *et al.*, 1989) and southern South Australia (M. Hutchinson, pers. comm.). The extent and quality of these habitat types has been reduced within the Murray-Darling Basin since European settlement (primarily through cropping and grazing practices) causing severe population declines in some indigenous fauna (see Lunney *et al.*, 1994). Earless Dragons may have undergone similar declines and/or extinctions within the Murray-Darling Basin. The decline of the Grassland Earless Dragon (*T. pinguicolla*) highlights the susceptibility of these lizards to habitat modifications (see Robertson & Cooper, 2000). Further research should be pursued to clarify the distribution and status of *T. lineata* in western New South Wales, with emphasis placed on obtaining a series of voucher specimens for future reference.

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