

## Three new *Diplodactylus* (Lacertilia: Gekkonidae) from the arid zone of Australia

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### Abstract

The new taxa are *D. immaculatus* from the Northern Territory and Queensland and *D. granariensis rex* and *D. kenneallyi* from Western Australia. *D. pulcher* is transferred to the *D. conspicillatus* group, which is redefined.

### Introduction

In preparation for a handbook on the gekkonid and pygopodid lizards of Western Australia, the *Diplodactylus* in the Western Australian Museum were re-examined, which has necessitated the description of three new species and subspecies. When citing catalogue numbers of specimens in this Museum the WAM R prefix is excluded. Two specimens in the Australian Wildlife Collection, Canberra, kindly loaned by J.C. Wombey, are prefixed with ANWC.

### Systematics

#### *Diplodactylus immaculatus* sp. nov.

#### Figure 1

#### Holotype

21408 in Western Australian Museum, collected by S.N. Wills on 25 November 1960 at 5 km E Tennant Creek, Northern Territory, in 19° 40' S, 134° 14' E.

#### Paratypes

##### *Northern Territory*

Renner Springs (74011-4); near Tennant Creek (21409) and 10 km E (21494).

##### *Queensland*

13 km N Mt Isa (55397) and 6 km E (55376); Fermoy (55436-8, 55590-1).

#### Diagnosis

A small member of the *Diplodactylus stenodactylus* group (Kluge 1967: 1030) with a pale vertebral stripe, rostral widely precluded from nostril, and moderately large subdigital apical plates. Most like *D. stenodactylus* but differing in coloration (little or no facial pattern, few or no pale spots on body, and with

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lateral branches to vertebral stripe) and having lower rostral, lower first upper labial, larger posterior supranasal, larger subdigital granules, larger apical plates and fewer pre-anal pores.

### Description

Snout-vent length (mm): 49-85 (N 15). Length of tail (% SVL): 77-96 (N 4).

Nostril surrounded by first upper labial, 2 supranasals (anterior larger and precluding rostral from nostril; posterior much larger [*v.* slightly larger in *D. stenodactylus*] than scales behind it) and 2-3 postnasals. Rostral low; median groove absent (N 12) or extending down for 10-50% of scale (N 3). No internasals. Upper labials 9-12 (8-10 to centre of eye), first not much higher than second (usually much higher than second in *stenodactylus*). Dorsal granules as large as or slightly smaller than ventral granules. One pre-anal pore on each side (*v.* 1-4 in *stenodactylus*), located in a slightly enlarged scale. End of digits slightly dilated. Apical plates moderately large (very small in eastern *stenodactylus*). Subdigital granules moderately large, especially median series, which extends back well on to soles; 8-12 rows under fourth toe (granules small in *stenodactylus* and in 12-17 rows).

Dorsal and lateral surfaces reddish brown except for whitish or pale reddish brown vertebral stripe (forking on nape) and its narrow lateral branches, and occasionally a faint supraloreal (or canthal) stripe.

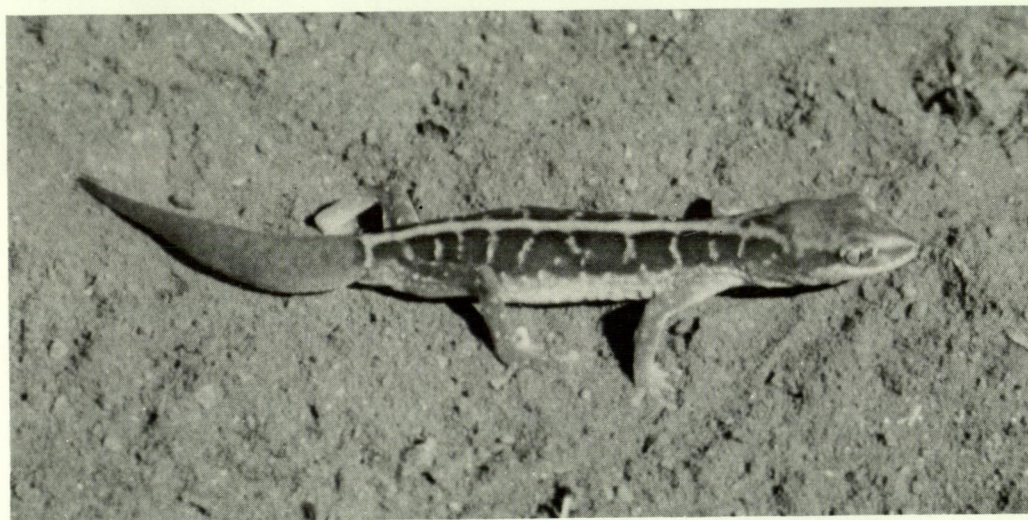


Figure 1 A paratype of *Diplodactylus immaculatus* from 13 km N Mt Isa, Qld, photographed by M. Peterson.

### Distribution

Stony red-brown soils in northern interior of Northern Territory and north-western interior of Queensland. See map, Figure 2.

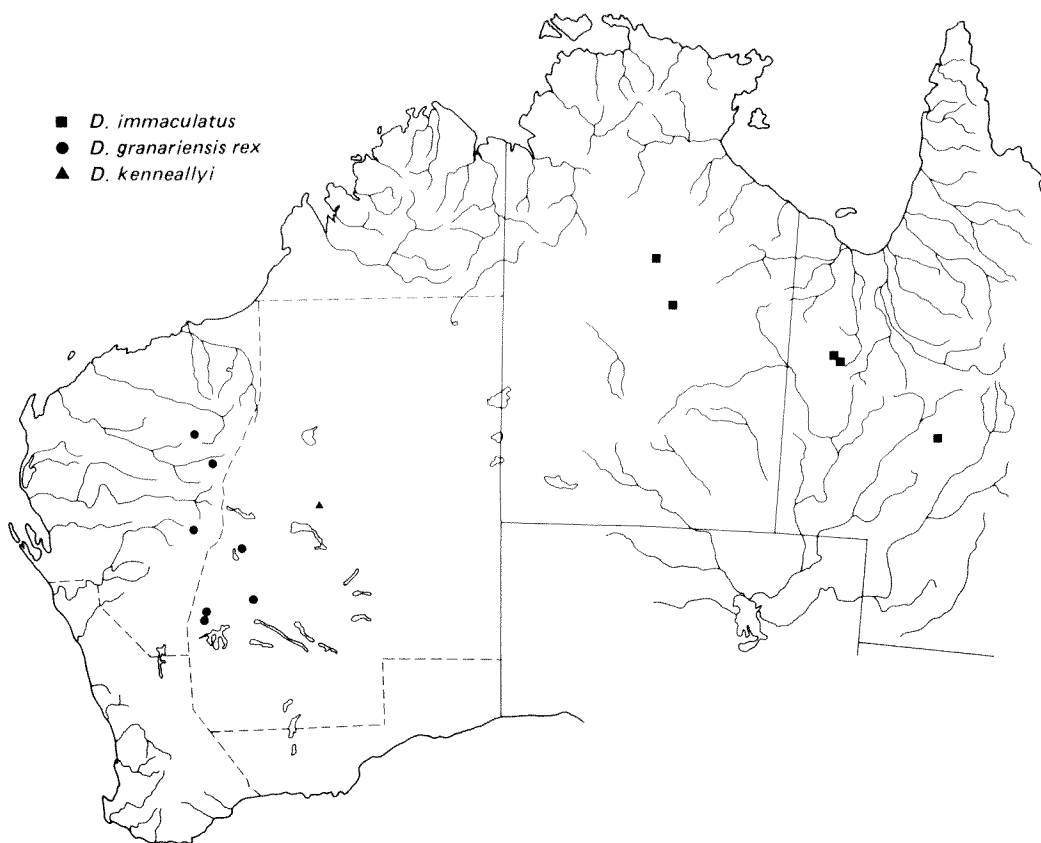


Figure 2 Map showing location of specimens of *Diplodactylus immaculatus*, *D. granariensis rex* and *D. kenneallyi*.

### Remarks

*D. immaculatus* and *D. stenodactylus* are sympatric over a considerable part of Northern Territory. Not separating the two species, Kluge (1967: 1050) found 'considerable morphological variation from Daly Waters to Tennant Creek'.

For differences in colour pattern between them see Cogger (1986); black-and-white Plate 437 is a photograph of *D. immaculatus* from Mt Isa, and 438 a *D. stenodactylus* from Port Hedland.

### Derivation of name

Latin for unspotted.



*Diplodactylus granariensis rex* subsp. nov.

Figure 3

**Holotype**

97288 in Western Australian Museum, collected by B.G. Bush on 4 October 1986 at 44 km SE Leinster, Western Australia, in 28°13'S, 121°00'E.

**Paratypes**

*North-west Division (WA)*

Ophthalmia Range in 23°17'S, 119°07'E (73622); 21 km SE Bulloo Downs (81510-1); Mooloogool (ANWC 1926).

*Eastern Division (WA)*

13 km E Wiluna (ANWC 1748); 50 km SE Leinster (97289); 29 km ENE Yuinmery (69084-6) and 24 km ESE (69029-31).

**Diagnosis**

Differing from *D. g. granariensis* in its greater size (SVL averaging 26% longer), stouter body, bold vertebral stripe (as in northernmost populations of nominate race) and much higher frequency of specimens with ungrooved rostral (62 v. 2%).

**Description**

Snout-vent length (mm) 55-72 (v. up to 62 in nominate race). Length of tail (% SVL): 56-66.



Figure 3 Holotype of *Diplodactylus granariensis rex*, photographed in life by B.G. Bush.

Nostril surrounded by first labial, rostral (median groove extending down for 0-30% of scale), 2 supranasals and 2-4 (mostly 3) postnasals. Internasals 0 (N 5) or 1 (5). Upper labials 10-14 (7-10 to centre of eye), first narrower than second but seldom lower. Subdigital apical plates moderately large, separated on fourth toe by 2 or 3 (occasionally 4) rows of granules from median series of 3-5 moderately large, subcircular scales, often poorly differentiated from 2-4 rows of smaller subcircular scales. Cloacal spur comprising 2-6 long pointed scales.

Dorsally brown except for moderately wide, white or pale brown vertebral stripe to tip of tail, forking on neck (branches extending to eye and separated by a dark V or Y on occiput and nape), with a straight or crenulate edge, and margined narrowly or widely with dark to very dark brown. One or two series of irregular brownish white spots or blotches on side of body, occasionally represented by stripes separated by a dark brown midlateral stripe.

#### Distribution

Western plateau of Western Australia between the Tropic and lat. 28° 30' S. See map, Figure 2.

#### Remarks

For a description of the nominate race see under *D. granariensis* in Storr (1979: 397).

#### Derivation of name

Latin for king.

### *Diplodactylus kenneallyi* sp. nov.

Figure 4

#### Holotype

95245 in Western Australian Museum, collected by R. Miller on 4 August 1986 at foot of stony hill near Lake Buchanan, Western Australia, in 25° 35' S, 123° 05' E.

#### Diagnosis

A short-tailed member of the *D. conspicillatus* group (redefined below) with moderately large subdigital granules and apical plates, rostral (but not first labial) precluded from nostril and very deep, narrow, concave-sided mental. Further distinguishable from *D. conspicillatus* and *D. savagei* by its distinct upper and lower labials, from *D. pulcher* by its deep and narrow first lower labial, and from all three species by its distinctive coloration.

#### Description (of only available specimen)

Snout-vent length (mm): 47.5. Length of tail (% SVL): 41. Snout short and pointed (as in *D. pulcher* but nasal region not so swollen). Tail slightly dilated behind postanal constriction.





Figure 4 Holotype of *Diplodactylus kenneallyi*, photographed in life by B. Miller.

Nostril surrounded by first labial (very narrowly), 2 supranasals (anterior narrow, not much larger than posterior, and widely separated from its opposite number) and 2 postnasals. Rostral very high, not grooved. Internasals 2. Upper labials 11 (10 back to centre of eye); first very high, rest not much larger than adjacent scales. Dorsal granules much larger than ventral granules. Caudal granules still larger, flat, rectangular and arranged in whorls. 12-13 rows of granules below fourth toe. No pre-anal pores.

Dorsal surfaces brown (palest on nape, above temples, along middle of back and on base of tail; darkest on narrow transverse band immediately in front of dilated part of tail). Side of body chocolate brown, densely dotted white.

#### Distribution

Only known from one locality in far west of Gibson Desert (north of Carnegie). See map, Figure 2.

#### Derivation of name

After botanist K.F. Kenneally in recognition of his services to Western Australian natural history.

#### *Diplodactylus conspicillatus* group

When searching for possible relatives of *Diplodactylus kenneallyi*, it was observed that it shared several characters with *D. conspicillatus*, *D. savagei* and *D. pulcher*.

The last-named was placed by Kluge (1967: 1029) in the *D. vittatus* group, but I believe that it belongs to the *D. conspicillatus* group, which is redefined as follows:

Small to moderately large, terrestrial members of subgenus *Diplodactylus* with snout short, pointed and tending to be swollen around nostril; tail very to moderately short, weakly or strongly constricted at base, larger part slightly to greatly dilated and covered with whorls of rectangular scales which are much larger than dorsal granules (which are much larger than ventrals); rostral moderately high to very high and not entering nostril; anterior supranasal narrow, curving around nostril and widely separated from its opposite number; first much the largest of upper labials; other labials mostly not or not greatly differentiated from scales above or below them; no pre-anal pores.

#### References

- Cogger, H.G. (1986). *Reptiles and Amphibians of Australia*. Rev. ed. Reed, Sydney.
- Kluge, A.G. (1967). Systematics, phylogeny, and zoogeography of the lizard genus *Diplodactylus* Gray (Gekkonidae). *Aust. J. Zool.* 15: 1007-1108.
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