

# A New Species of Gecko, Genus *Gehyra* (Reptilia: Gekkonidae) from Queensland.

BY TIMOTHY LOW\*

## Abstract

Three species of *Gehyra* occur in central and southern Queensland. These are *G. catenata* sp. nov. and the species presently called *G. variegata* (Duméril and Bibron) and *G. australis* Gray.

## Introduction

Mitchell (1965), reviewed the Australian geckos of genus *Gehyra* Gray, listing six species. Since that time it has become apparent that some of the species defined by Mitchell are composite, (e.g. Cogger 1975), and that additional species remain to be described or resurrected.

Extensive collecting of *Gehyra* in the southern half of Queensland and northern New South Wales has revealed the presence of three clearly demarcated species exhibiting little intraspecific variation.

One species has 9-11 undivided lamellae on the underside of the dilated portion of the fourth toe and keys out to *G. australis* Gray in Bustard (1964), Mitchell (1965), and Cogger (1975).

A second species had 7-8 mostly divided lamellae and keys out to *G. variegata* (Duméril and Bibron) in Bustard (1964), Mitchell (1965), and Cogger (1975).

The third species has 7-8 undivided lamellae, is inconsistent with the description of any known species, and is here described as new.

*G. variegata* and *G. australis* are almost certainly composite species as currently defined. Both Mitchell (1965) and Cogger (1975) suggest this to be the case for *variegata*. Referring to *australis* Bustard (1964, p. 263) notes "considerable intraspecific and

geographic variation", while Mitchell (1965, p. 300-1) suggests that geographic variation in lamellar division and egg production "may reveal the existence of two races". As the types of these species are from the Northern Territory and Western Australia, interpretation of the Queensland forms must await a study of western and northern material. For purposes of this paper current name usage is maintained and in view of the invariability of "*G. variegata*" and "*G. australis*" within the study area, each will be regarded as a single species.

(Cogger's 1975 distribution map for *Gehyra punctata* (Fry) implies a Southern Queensland distribution for this rockdweller. There is no material in the Queensland Museum to suggest that this is so. Rock-dwelling *Gehyra* from the sandstone areas north of Injune and from the granite areas at Crow's Nest, Brisbane, Warwick, and Stanthorpe are all typical southern Queensland *australis* with undivided toe lamellae).

All but two of the specimens on which this description is based are in the Queensland Museum reference collection (J). Two specimens are held by the Australian Museum (R).

*Gehyra catenata* sp. nov.

## HOLOTYPE

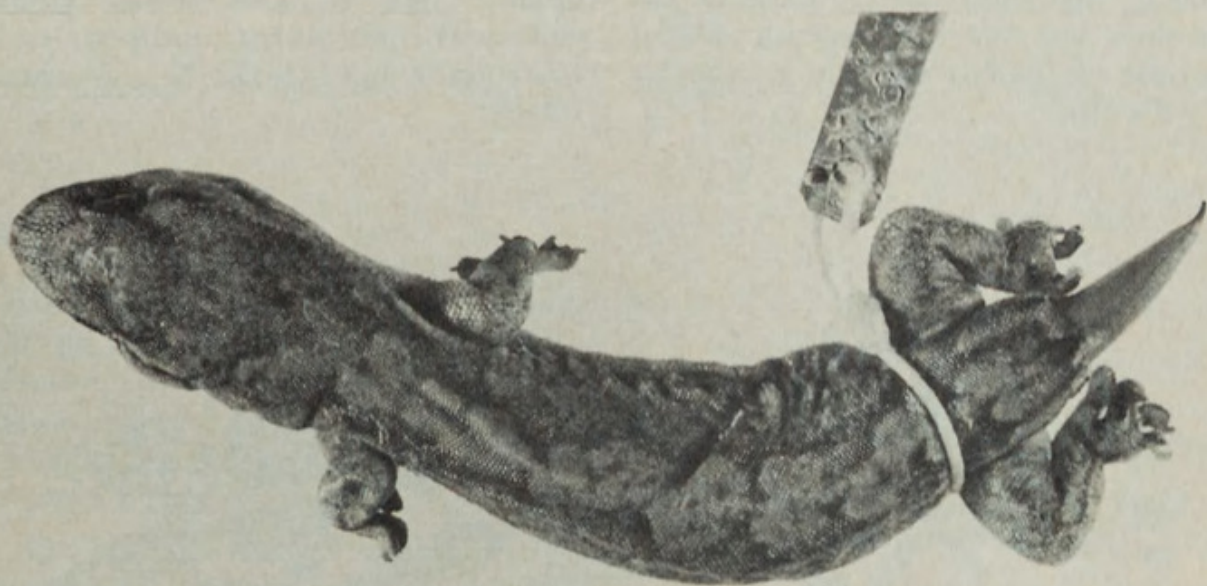
J15633 Batheaston Station, ME.Q. (22° 26', 148° 47') collected by J. Covacevich and T. P. Tebble on 12 September 1968 "at deserted homestead under logs". Adult male with 17 preanal pores and 3 + 2 postanal tubercles. Plate 1a.

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Plate 1. Dorsal views of *Gehyra catenata*. A. J15633 (holotype). B. J13003 (paratype).



**A**



**B**

## PARATYPES

J13003-5 160 km N. of Clermont, ME.Q. (about  $21^{\circ} 23'$ ,  $147^{\circ} 38'$ ); J30263-4 46 km NNW. of Barmount, ME.Q. ( $22^{\circ} 09'$ ,  $149^{\circ} 02'$ ); J24945, J28839-40, J30257-9, R81647-8 15 km SSW. of Barmount, ME.Q. ( $22^{\circ} 41'$ ,  $149^{\circ} 06'$ ); J28793, J28795 30 km E. of Barcaldine, SC.Q. ( $23^{\circ} 34'$ ,  $145^{\circ} 34'$ ); J11532 23 km S. of Barcaldine, SC.Q. ( $23^{\circ} 45'$ ,  $145^{\circ} 19'$ ); J11544 44 km S. of Barcaldine, SC.Q. ( $23^{\circ} 55'$ ,  $145^{\circ} 20'$ ); J11541-3, 37 km S. of Blackall, SC.Q. ( $24^{\circ} 45'$ ,  $145^{\circ} 30'$ ); J11776-7 8 km N. of Mitchell, SC.Q. ( $26^{\circ} 25'$ ,  $147^{\circ} 59'$ ).

## DIAGNOSIS

A small and distinctly marked *Gehyra* (fig 1, Plate 1), differing from all other Australian members of its genus in the following combination of characters: all toe lamellae undivided; toe lamellae beneath dilated portion of fourth hind toes numbering 7-8 (fig 2b).

## DISTRIBUTION

Mid-eastern Queensland to south central Queensland. From west of Mackay in the north to Barcaldine in the west, south to Mitchell (fig. 3).

## DESCRIPTION OF SPECIES

Snout-vent length (mm): 43-59 (N = 22, mean 52.6).

Head oval, depressed, covered in minute, rounded, flattened scales, eyes large, ear opening oblique. Rostral rectangular, twice as broad as deep, with or without median cleft up to one half depth of rostral; nostril surrounded by rostral, first supralabial, and three nasals; supralabials 6-11 (N = 24, mean 8.2); mental triangular, followed by two small, usually oval postmentals.

Body moderate, depressed, covered in minute, flat, rounded scales; lateral cutaneous folds absent, mid-body scale row count about 113-130 (N = 14, mean 120.0),

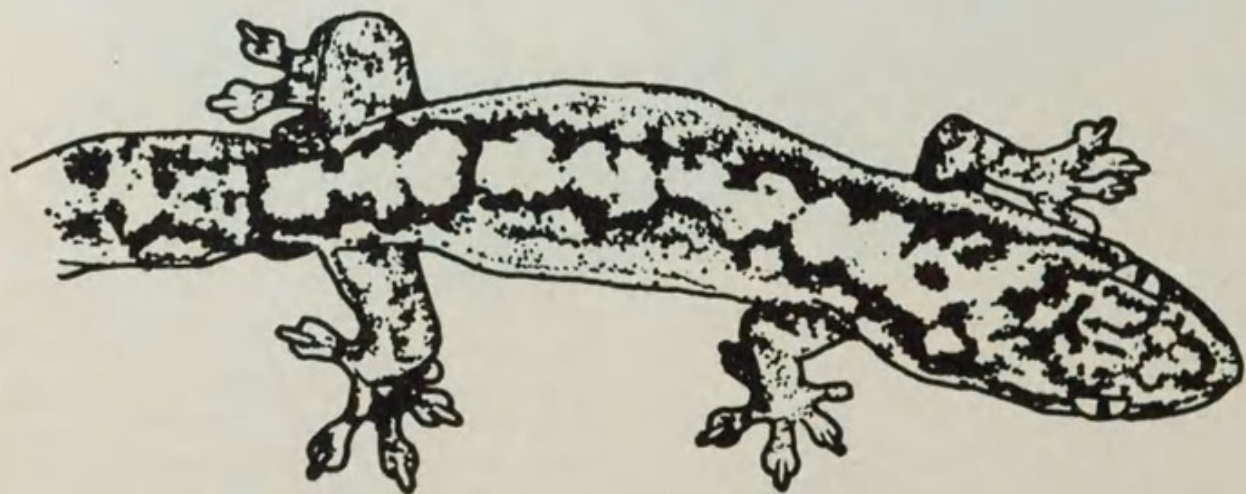


Fig. 1. Typical dorsal pattern of *Gehyra catenata*.

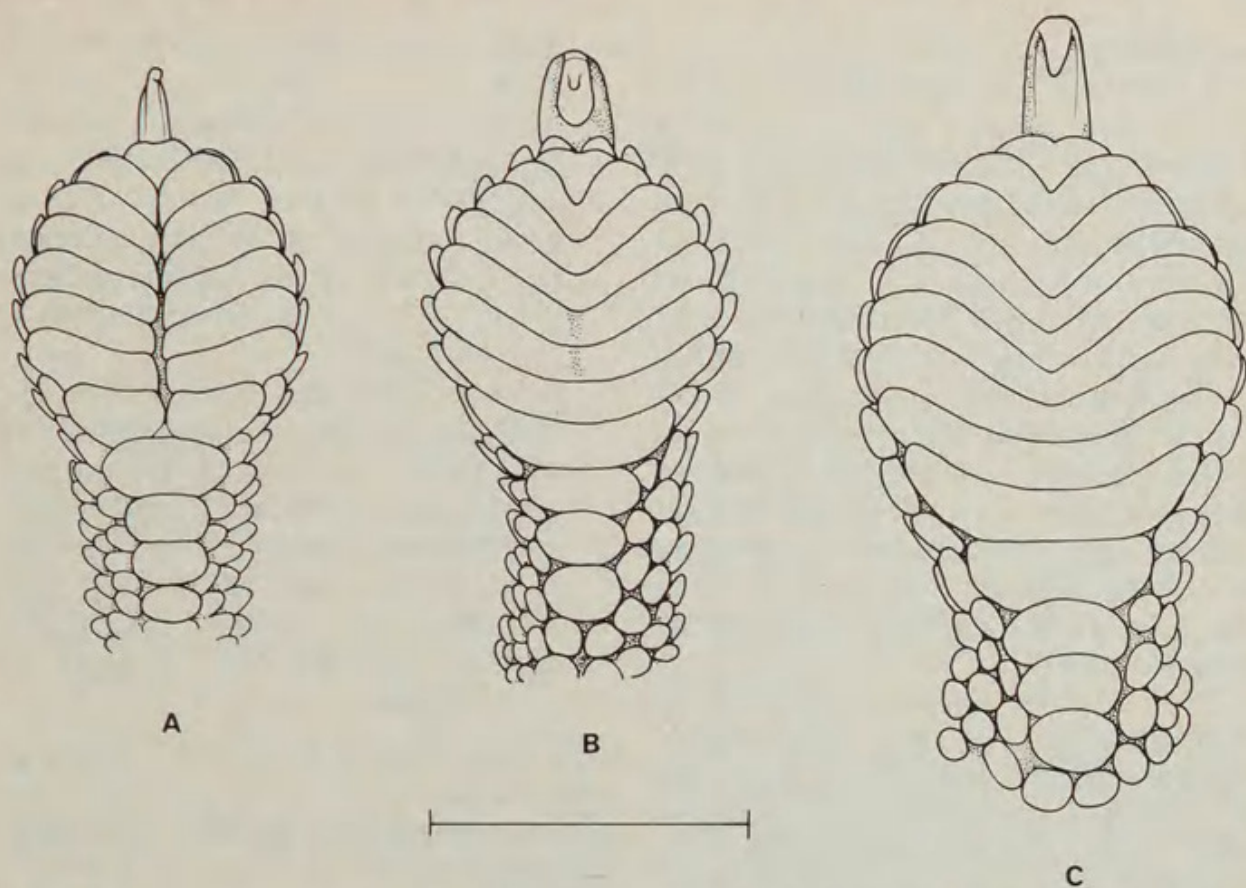


Fig. 2. Underside of the fourth toe of *Gehyra*. A. *G. variegata*. B. *G. catenata*. C. *G. australis*.

Limbs moderately long, without cutaneous folds; digits free, greatly dilated distally; subdigital lamellae undivided, numbering 7-8 beneath the dilated portion of the fourth toe, occasionally possessing a shallow median groove.

In mature males preanal pores number 15-20 ( $N = 8$ , mean 17.0), and postanal tubercles 1-3 ( $N = 8$ , mean 2.0).

Dorsal surface pale to dark grey, ventral surface dirty white. A dark, sometimes ill-defined stripe runs from the snout through each eye to the neck, continuing along the back as a wavy paravertebral stripe. The two stripes may be joined by several crossbars, forming a series of pale dorsal blotches. The lateral surface is speckled; the limbs, head, and tail are speckled or streaked.



Fig. 3. Distribution of *Gehyra catenata*.

## FIELD DATA

*G. catenata* has been collected by the author in mixed brigalow-casuarina forest 15 km south of Barmount and 40 km north of Barmount. At both sites specimens were located under bark on dead *Casuarina* sp. and brigalow (*Acacia harpophylla*) and were co-occurring with *Oedura monilis*.

I have also collected *catenata* 30 km east of Barcaldine under bark on dead gidgee (*Acacia cambagei*). *Gehyra variegata* also occurred in this habitat (though less common) and a specimen of *Gehyra australis* was collected at a site 9 km to the east (on a dead iron-bark *Eucalyptus* sp.).

Of the 25 *G. catenata* collected at these three sites, 21 were found singly, and pairs were found on only two trees (M + F, M + juvenile), although trees were often shared with *O. monilis*. This contrasts with the behaviour of *G. variegata* which is commonly found in units of one male and one-three females per tree (Bustard 1968; Bustard 1969; the author, unpublished data from Longreach, Cunnamulla, 30 km east of Barcaldine).

Four of the *G. catenata* collected were gravid females, each carrying two well-developed eggs. According to Bustard (1964), *G. variegata* produces only one egg per clutch.

## KEY

The three species of *Gehyra* occurring in the southern half of Queensland can be keyed as follows:

1. Nine to 11 subdigital lamellae beneath dilated portion of fourth toe of hind foot (fig. 2c). Pattern variable though usually indistinct (fig. 7 in Bustard 1964); size large (snout-vent length up to 71 mm) . . . *australis*.

Seven to eight subdigital lamellae beneath dilated portion of fourth toe of hind foot (fig. 2a, b). Pattern usually distinct and contrasting; size

small (snout-vent length up to 59 mm) . . . 2.

2. Most, if not all subdigital lamellae divided, excluding apical lamella (fig. 2a); dorsal pattern variable though usually consisting of dark reticulations extending to lateral surfaces (fig. 8 in Bustard 1964) . . . *variegata*.

All subdigital lamellae of toes undivided (fig. 2b), though sometimes with median groove; dorsal pattern consisting of two dark, wavy, often ill-defined stripes extending from the snout to the base of the tail and enclosing a pale vertebral region or a series of blotches (fig. 1, plate 1) . . . *catenata*.

## COMPARISON WITH OTHER SPECIES

*G. catenata* can readily be distinguished from *G. australis* by its smaller size and corresponding smaller number of lamellae beneath the expanded portion of the fourth toe. The differences are shown in table 1.

Apart from colour pattern and probably social behaviour and clutch size, *G. catenata* can only be distinguished from *G. variegata* by its undivided toe lamellae. Bustard (1964) considered lamellar division unreliable in distinguishing *G. variegata* from *G. australis*. He found that while most *australis* had undivided lamellae and most *variegata* had divided lamellae, occasional exceptions occurred in both species.

Bustard arrived at this conclusion after examining *australis* from areas including north Queensland and Western Australia. It is now uncertain if populations from these areas are conspecific with southern Queensland and New South Wales *australis*. Bustard (1964), recognized a clutch size of two eggs as diagnostic of *G. australis* (based on observations in New South Wales and northern Queensland). Yet Mitchell

Table 1. Number of subdigital lamellae under dilated portion of fourth left hind toe in *G. variegata*, *G. catenata*, and *G. australis*.

Locality	No. examined	Lamellae number, 4th toe of left hind foot				
		7	8	9	10	11
<i>Gehyra variegata</i> various localities, Queensland, N.S.W.	48	41	7			
<i>Gehyra catenata</i> various localities, Queensland	22	13	9			
<i>Gehyra australis</i> Retro via Capella, Queensland	32			31	1	
<i>Gehyra australis</i> Chinchilla, Queensland	37			22	14	1

(1965), found three gravid “*australis*” from northern Australia (north Western Australia, Northern Territory, and north Queensland respectively), carrying only one egg.

*Gehyra variegata* with “reduced division or notching” were recorded by Bustard (1964) from Barradine, N.S.W. I have examined *G. variegata* from nearby localities and consider the N.S.W. populations to be conspecific with southern Queensland *G. variegata*. Bustard (1964, fig. 1), illustrates the toe of a *variegata* exhibiting reduced lamellar division. Of the six rows of lamellae which are normally divided (the apical triangular lamella is never divided), this example has two undivided lamellae, one of which is notched. This condition cannot be confused with *G. catenata* and southern Queensland populations of *G. australis* which have all lamellae undivided. Of 80 *G. variegata* from Queensland and N.S.W. examined by this author only one has any undivided subapical lamellae on any fingers or toes. (J1135 has atypical small first toes with undivided lamellae).

Discussion

Live and freshly preserved *catenata* and *australis* often possess toe lamellae with shallow median grooves. This con-

dition bears superficial resemblance to the divided lamellae of *variegata* and justifies extreme caution when examining *Gehyra* toe lamellae. With repeated handling of any preserved *Gehyra*, a layer of skin often peels off the toes, and a new examination of the lamellae shows that any previous median grooves are no longer present. This latter phenomenon occurs with both *australis* and *catenata*, but does not affect *variegata*, which has obviously divided lamellae both before and after the skin is removed. The illustrations of *Gehyra* toes in fig. 2 are from specimens with the outer skin layer removed. Diagramatical transverse sections of *Gehyra* lamellae are illustrated in fig. 4.

Etymology

The specific name *catenata* means “chain-like”, and refers to the dorsal pattern.

Acknowledgements

I thank Mr G. Ingram for his valuable encouragement and assistance. Ms J. Covacevich made material freely available and Mr A. Easton prepared the plates. The Johnson family of Lochnagar via Barcaldine provided pleasant accommodation during my stay in the area.

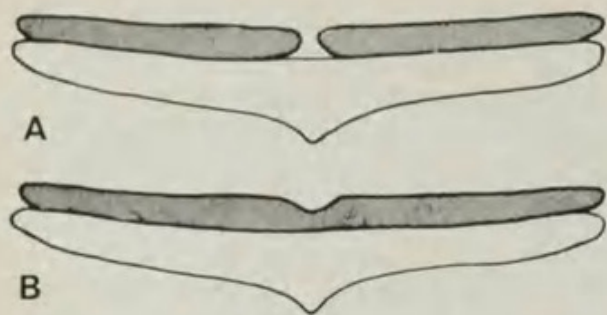


Fig. 4. Diagrammatical transverse sections of *Gehyra* lamellae. A. *G. variegata*. B. *G. australis* and *G. catenata*.

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## Naturalists of Yesteryear

BY R. SIMMONS

An interesting example of the beneficial use that can be obtained from even the most insignificant animal appeared under the title "Flies as Sanitary Inspectors" (3:96). The article describes that "in one of the rooms of a residence in an American city offensive odours were detected, but their exact source could not be located. The carpets were raised, and a carpenter was engaged to take up the entire floor". However it just so happened that an enterprising visitor then suggested "that an appeal be made to the instincts of the fly". Subsequently "two blue bottles were brought from a neighbouring stable, and the doors and windows of the room closed. The flies soon settled upon one of the cracks in the floor, and when the boards were raised at this point a decomposed rat was found". Truly ingenious!

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Despite our modern-day scientific achievements certain things have not changed with time as the following examples hopefully will show. A correspondent living at Murtoa in the Wimmera detailed (3:131) the following problem. "The locusts appear to fly in swarms, in size varying from a few yards wide to over a mile, and of great length, as sometimes the flight continues from

half an hour to an hour without the slightest break". He further recorded that "they did not do much damage to the wheat crops in this district; but the grass paddocks were cleared right off in a day or two" and that "any gardens which happened to be in their line of flight suffered very severely".

Port Phillip Bay is still a haven for many sharks which Captain Mardeville, the Chief Inspector of Fisheries, could also attest to in 1887 (3:143). While compiling a report on the fisheries at Geelong, Captain Mandeville "went out one day fully equipped and prepared" and "the result of the first haul . . . was 3540 sharks. Altogether five boats . . . captured 8310 sharks". Although the sharks were generally "only about a foot long, and quite young" it was obvious "that the bay is a huge spawning ground for sharks and, in consequence, that netting be allowed".

Still on the water A. H. S. Lucas (3:153) relates how "two old pupils of mine Messrs Grove and Nye, while boating recently on the Yarra, just above the Johnston Street Bridge, observed a platypus swimming about. They gave chase and succeeded in effecting a capture . . ." Mr Lucas continues by describing how he tried to maintain



Low, Timothy. 1979. "A new species of gecko, genus *Gehyra* (Reptilia: Gekkonidae) from Queensland." *The Victorian Naturalist* 96, 190–196.

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