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## HERPETOLOGICAL ASSOCIATION OF AFRICA

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**COVER PHOTOGRAPH:** *Chameleo namaquensis* from the Northern Cape Province, South Africa. Photograph by: Andre Coetzer. Canon EOS 30D (1/125, F20, ISO 400).

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## THE DISTRIBUTION OF *LYGODACTYLUS BRADFIELDI* HEWITT 1932 IN LIMPOPO PROVINCE, SOUTH AFRICA

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### INTRODUCTION & METHODS

Bradfield's Dwarf Gecko *Lygodactylus bradfieldi* Hewitt 1932, has a wide but disjunct distribution in southern Africa having been recorded from south-western Zimbabwe (Broadley 1991, 1992). In the first paper it was suggested that the taxon could occur in the north-western Transvaal as the species had been recorded in the Tuli Circle and along the Shashi River (Broadley 1991, 1992). Accordingly specimens of *Lygodactylus capensis* (A. Smith) 1849 from the former Transvaal, (now Northwest, Mpumalanga and Limpopo Provinces) were re-examined, as well as, for comparative purposes, specimens of *Lygodactylus bradfieldi* from Namibia, housed in the Transvaal Museum (Northern Flagship Institute). From this re-examination of specimens it was established that *L. bradfieldi* is present in Limpopo Province.

### RESULTS

Forty-nine of the specimens examined were considered to be *Lygodactylus bradfieldi* and the distribution of the species in the north-western Limpopo Province is presented in Figure 1 with localities (per degree square) listed below:

**2228**-CA TM 58824 Farm Gwaai 62MR. -CD TM 58630 Farm Bottelang 115MR; TM 58790 Farm Koeberg 52MR; Farm TM 58765 Zoetfontein 154MR. -DB TM 58841 Farm Dardanellen 203MR.

**2229**-AB TM 67926 Farm Greefswald 37MS; TM 41748 Farm Weipe 47MS. -AC TM 50297 Farm Breslau 2MS; TM 58682, 58754 Farm William Porter 90MS. -BC TM 58661, 58843 Farm Belvedere 184MS; TM 58633 Farm Shelton Hall 102MS. -BD TM 58949 Farm Gulliver 237MS; TM 58828 Farm Killaloe 235MS. -CA TM 29892 All-days; TM 58767 Farm Loretto 264MS. -CB TM 58703 Farm Dirleton 276MS. -CC TM 58669, 58792 Farm Greenfield 333MS. -CD TM 14948, 14949, 14950, 14951 Salt Pan. -DA TM 58606 Farm Bordeaux 555MS.

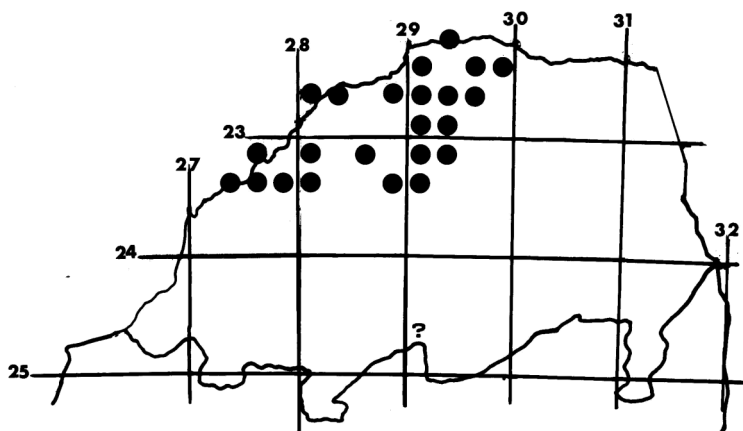
**2327**-AD TM 58789, 58797 Farm Lisbon 19LQ. -BA TM 58688, 58820 Farm Uitspan 65LQ. -BC TM 58702 Farm Wolmunster 108LQ. -BD TM 58730 Farm Paarl 102LQ

**2328**-AA TM 58774, 58808, 58815, 58825 Farm Moonlight 111LR. -AC TM 58806 Farm Melinda 164LR. -BA TM 58748 Farm Glen Alpine 304LR. -BD TM 58665, 58678, 58742 Farm Harriets Wish 393LR

**2329**-AA TM 58698, 58752 Farm Ameland 11LS; TM 58769 Farm Urk 10LS. -AB TM 47203 Vivo area; TM 58718 Farm York 108LS. -AC TM 58585 Farm Bochum 145LS

**2429**-CA TM 58594 Farm Gewensch 562KS; TM 4309, 4310 Brak River

**Figure 1:** The distribution of *Lygodactylus bradfieldi* in Limpopo



Province, South Africa

Namibian Material examined: TM 38288 Waterberg 2017AD; TM 63108, 63109, 63110 Okosongomingo 2017CA; TM 57284 Naukluft 2426AA; TM 41863 Farm Holoog 106 2717AC; TM 28010 Farm Velloor 2019CA; TM 28005 Farm Middelpoos, 11 miles (17,6 km) from Karasberg 2718BA; TM 9529 Waterberg District 2017AD; TM 48615 Farm

Aigamas 471 1917AD; TM 28268 Farm Hobas, 15 miles (24 km) east of Fish River Canyon 2717DA; TM 31171, 39478, 39479, 39480 Gobabeb 2315CA; TM 4558, 7578, 7579 Farm Quickborn, Okahandja 2117AA; TM 3054 Quibis 2616DB; TM 3052, 3053 Narudas Sud 2718BD; TM 44419 Swartbank 2314CD; TM 48452 Farm Omatako 189 2116BA; TM 30468 Kombat 1917DA; TM 47264 Soutrivier, Kuiseb River 2314DB; TM 50137 2 km south of Nomidas 2214DA; TM 3049, 3050 Wasserfall on farm Wittenhorst 2718BA; TM 50807 Sesfontein 1913BA; TM 71354. Specimens considered to be *L. capensis* include: TM 71355 Epupa Falls 1613CD; TM 39250 Linyanti 1823B?; TM 71316 Opuwo; TM 33513 Farm Labora, Gobabis District 2119CD.

## DISCUSSION

The occurrence of *Lygodactylus bradfieldi* in the Limpopo Province was previously overlooked as the taxon was formerly only recorded from the Northern Cape Province, Namibia and eastern Botswana at the southern margin of the Makgadigadi Pans. The subsequent discovery of the species in south-western Zimbabwe resulted in this re-evaluation and confirmation of the taxon in the northwest of the province. The species is very similar to *Lygodactylus capensis* and there is some difficulty in separating the two species morphologically. All of the characters used to separate the two taxa overlap which makes separation difficult, especially when considering that the two species occur sympatrically in some areas.

According to FitzSimons (1943) the main distinguishing character is the number of perinasal scales, which in *L. bradfieldi* number four including the rostral, 1<sup>st</sup> upper labial and two postnasals while *L. capensis* has mostly five including the rostral, 1<sup>st</sup> upper labial and three postnasals. In a sample of 277 *L. capensis* specimens (outside the distribution of *L. bradfieldi*) the postnasals range from two (29,6%, n = 82), two plus a granular scale (6,8%, n = 19) and three (63,5%, n = 176). It was apparent during this assessment that the nasorostral scales of *L. bradfieldi* mostly tended to be small, while those of *L. capensis* were mostly large but there are intermediates, again limiting the usefulness of this character.

Similarly FitzSimons (op cit) mentions that *L. bradfieldi* has five preanal pores in males whereas *L. capensis* ranges from 4-7 (usually 5). Specimens of *L. bradfieldi* examined from Namibia and the Limpopo Province exhibited 4-6 preanal pores mostly five, while *L. capensis* ranged from 3-7 with four and to a lesser extent five predominating (Appendices 1 & 2). In a sample of 28 specimens of the *L. bradfieldi* from Limpopo Province, two (7%) had four, 24 (86%) had five and two (7%) had six. In contrast, in a sample of 252 specimens of *L. capensis*, six (2,4%) exhibited 3 pores, 163 (64,7%) had four, 68 (27%) had five, 14 (5,5%) had six and 1 (0,4%) had seven. Some females of both species exhibited undeveloped preanal pores which were not included in this analysis.

Broadley (1991, in litt) and Branch (1998) also refer to the irregular arrangement of the subcaudals of *L. bradfieldi*. This was also observed in the specimens examined but some individuals exhibited regular arrangement at least on the distal half of the tail where scales were arranged in 2.1.1 or 2.1, 2.1, 2.1.1, 2.1.1 sequences. While this assists

the diagnosis, it is restricted to those individuals with original tails. Many of the specimens examined had tails broken off or were regenerating, obscuring the original arrangement (Table 1, Appendix).

According to Broadley (loc. cit), in the Tuli Circle, Zimbabwe, the two species occur parapatrically, with *L. bradfieldi* on trees away from the Shashi River and *L. capensis* along trees in the riparian zone. Similarly on Sentinel Ranch, most *L. capensis* were taken on live trees and most *L. bradfieldi* were found on dead trees (Broadley in litt). This is in strong contrast to the occurrence of the former elsewhere in its range, inhabiting live and dead trees as well as rotting logs and branches on the ground (FitzSimons 1943, Jacobsen 1982, 1989, Branch 1998). Similarly elsewhere in the distribution of *L. bradfieldi*, it occurs on Acacia trees and also on rocks (FitzSimons op cit).

However in areas of parapatry it is uncertain what happens along the ecotone between the riparian vegetation and the drier woodland where both taxa may be found. *L. capensis* is widespread in areas of open woodland throughout much of the Northwest and Limpopo Provinces, habitat which, where the two species occur, is taken over by *L. bradfieldi*. It is peculiar then that the latter does not have a wider distribution in the north of the Limpopo Province and southern Zimbabwe as mentioned by Broadley (1991).

Although these distribution records are based on a conservative evaluation there remain doubts about some, due to the overlap in characters and the subsequent breakdown in ecological requirements with distance from areas of sympatry. This pertains in particular to females that have fewer discriminating characters. TM 58594, a female with undeveloped precloacal pores, from the Farm Gewensch 562KS, 2429CA appears to be typical *L. bradfieldi* with four perinasals including small nasorostrals but the locality is far removed from the nearest other for the species in the province (Figure 1) and should be viewed with caution as it may be a translocation or an atypical Cape Dwarf Gecko.

No specimens from the Northwest Province adjoining the Northern Cape Province and Botswana in the west could be referred to *L. bradfieldi*. Perhaps a more in depth assessment along the upper Limpopo and Molopo Rivers may provide a link between the current disjunct populations.

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**Appendix 1:** Details of material examined from Limpopo Province, South Africa. (I = irregular; Reg = regular; R = regenerating; B/C = broken on capture; Nas = nasals; I = internasals; PP = precloacal pores; PNR = posterior nasorostrals; Sub = subcaudals).

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
58825	Moonlight 111LR	M	2328AA	2	3	5	small	Reg, 2.1.1
58748	Glen Alpine 304LR	M	2328BA	2	2	6	small	R
4310	Brak River	F	?	2	2	5	moderate	B/C
58754	William Porter 90MS	M	2229AC	2	2	5	small	I
41748	Weipe 47 MS	M	2229AB	2	1	5	small	I
58661	Belvedere 184MS	M	2229BC	2	2	5	small	B/C
58767	Loretto 264MS	M	2229CA	2	2	5	?	B/C
58688	Uitspan 65LQ	M	2327BA	2	3	5	small	R
58824	Gwaai 62MR	F	2228CA	2	3	0	small - moderate	I
58808	Moonlight 111LR	F	2328AA	2	2	0	small	I
58594	Gewensch 562KS	F	2429CA	2	2	5	small	B/C
58843	Belvedere 184MS	F	2229BC	2	1	0	?	R
14949	Salt Pan	F	2229CD	2	1	5	moderate	B/C
58789	Lisbon 19LQ	F	2327AD	2	2	0	moderate	B/C
58606	Bordeaux 55MS	M	2229DA	2	2	5	small	I
67926	Greefswald 37MS	M	2229AB	2	2	5	moderate	B/C
14948	Saltpan	F	2229CD	2	2	0	?	?
14950	Saltpan	M	2229CD	2	2	5	moderate - large	B/C
14950	Saltpan	M	2229CD	2	2	5	moderate	I, R
58774	Moonlight 111LR	F	2328AA	2	3	0	?	?
58949	Gulliver 237MS	M	2229BD	2	1	5	?	?
58678	Harriets Wish 393LR	F	2328BD	2	3	5	?	?
58828	Killaloe 235MS	J	2229BD	2	2	0	?	?
58841	Dardanellen 203MR	M	2228DB	2	2	5	small - moderate	B/C
58769	Urk 10LS	J	2329AA	2	2	0	large	I
58702	Wolmunster 108LQ	F	2327BC	2	1	0	small - moderate	I
50297	Breslau 2MS	M	2229AC	2	3	5	moderate	B/C
58630	Bottelang 115MR	M	2228CD	2	2	5	small - moderate	B/C
58718	York 108LS	F	2329AB	2	1	0	small	B/C
4309	Brak River	M	?	2	1	5	small - moderate	I, Reg
58730	Paarl 102LQ	F	2327BD	2	2	0	small	I
58752	Ameland 11LS	F	2329AA	2	2	0	moderate	I
58675	Zoetfontein 154MR	F	2228CD	2	3	0	small	Reg, 2.1, 2.1
58703	Dirleton 276MS	F	2229CB	2	1	0	small	B/C
58682	William Porter 90MS	M	2229AC	2	2	6	small	B/C

**Appendix 1 (cont.)**

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
58820	Uitspan 65LQ	F	2327BA	2	2	0	small	B/C
47203	Vivo area	F	2329AB	2	3	5	small	I
58806	Melinda 164LR	F	2328AC	2	2	0	moderate - large	I, 2.1, 2.1
58792	Greefswald 333MS	M	2229CC	2	2	5	small	B/C
58665	Harriets Wish 393LR	F	2328BD	2	3	0	small	B/C
58702	Wolmunster 108LQ	F	2327BC	2	2	0	?	?
58790	Koeberg 52MR	F	2228CB	2	1	0	?	Reg, 2.1.1
58756	Greenfield 333MS	F	2229CC	2	2	0	moderate	I, B/C
58742	Harriets Wish 393LR	M	2328BD	2	2	4	small	B/C
29892	Alldays	M	2229CA	2	2	5	moderate	R
14951	Saltpan	M	2229CD	2	2	5	moderate - large	I
58815	Moonlight 111LR	F	2328AA	2	3	0	small	I
58669	Greenfields 333MS	F	2229CC	2	2	0	small	R
58633	Shelton Hall 102MS	F	2229BC	2	3	0	?	?

**Appendix 2:** Details of material examined from Namibia. (Legend as for Appendix 1 above).

TM No.	Locality	Sex	QDS	Nas	Int	PP	PNR	Sub
71355	Epupa Falls	M	1613CD	3	1	5	?	I, 2.1.1
39250	Linyanti	F	?	3	1	0	?	I, Reg
71354	Epupa Falls	F	1613CD	2	1	0	?	Reg, 2.1.1
33513	Farm Labora, Gobabis District	F	2119CD	2	1	0	?	Reg, 2.1.1
38288	Waterberg	F	2017AD	2	2	0	?	I
63110	Okosongomingo	F	2017CA	2	3	0	?	Reg
57284	Naukluft	F	?	2	1	0	?	B/C
41863	Holoog 106	?	2717AC	2	3	?	?	B/C
28010	Farm Velloor	F	2019CA	2	2	0	?	I
28005	Farm Middelpoos, 17,6 km from Karasberg	?	2718BA	2	2	0	?	B/C
9529	Waterberg District	M	2017AD	2	1	4	?	I
48615	Aigamas 471	M	1917AD	2	1	5	?	Reg
28208	Farm Hobas, 24 km E of Fish R. Canyon	F	2717DA	2	2	0	?	R
31171	Gobabeb	M	2315CA	2	2	5	?	B/C
7579	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	2.1.1, B/C
7577	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	IR
3054	Quibis	F	2616DB	2	1	0	?	B/C
3053	Narudas Suid	M	2718BD	2	2	5	?	B/C
39479	Gobabeb	F	2315CA	2	2	0	?	I
39478	Gobabeb	M	2315CA	2	1	5	?	R



**Appendix 2 (cont.)**

TM No.	Locality	Sex	Degree	Nas	Int	PP	PNR	Sub
44419	Swartbank	F	2314CD	2	3	0	?	I, Reg, B/C
48452	Omatoko 189	M	2116BA	2	3	5	?	IR
30468	Kombat	F	1917DA	2	3	0	?	Reg, 2.1.1
71316	Opuwo	F	1813DB	3,2	1	0	?	I
63109	Okosongomingo	M	2017CB	2	2	4	?	IB/C
63108	Okosongomingo	F	2017CB	2	2	0	?	R
47264	Soutrivier, Kuiseb River	M	2314DB	2	3	5	?	R, 2.1.1
39480	Gobabeb	M	2315CA	2	2	4,1	?	B/C, 2.1.1, I
50137	2km south of Nomdas	F	2214DA	2	2	0	?	I, R
4558	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	B/C
3052	Narudas Suid	F	2718BD	2	2	0	?	?
3050	Waterfall of Farm Wittenhorst	M	2718BA	2	2	4	?	B/C
7578	Farm Quickborn, Okahandja	F	2117AA	2	2	0	?	B/C
3049	Waterfall of Farm Wittenhorst	F	2718BA	2	1	0	?	B/C
50807	Sesfontein, Kaokoveld	J	1913BA	2	2	0	?	?

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## THE TERRESTRIAL REPTILES OF SIR BANI YAS ISLAND, UNITED ARAB EMIRATES

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### INTRODUCTION

A survey for animals potentially harmful to man was conducted on Sir Bani Yas Island from 28 March to 26 April 2008 under contract to International Conservation Services for the Tourist Development and Investment Company (TDIC) of the United Arab Emirates. The survey included terrestrial reptiles and took place from 28 March to 26 April 2008. Collected and photographed reptiles were identified by the author and D. Egan, and collected material is at present kept on the island. With the exception of Hardwick's rat snake (Tiedemann 1991), there were no published records of other reptiles from Sir Bani Yas until Soorae (2004) listed three lizards and three snakes from the Island. Thirteen species of terrestrial reptiles were recorded during the March/April 2008 survey, and subsequently an additional two species were reported in an unpublished document to the TDIC by the Dome Oilfield and Engineering Services, 2009.

Nine of the fifteen species recorded here thus represent the first published records for Sir Bani Yas Island, of which seven species were recorded for the first time during this survey, and two species were recorded for the first time subsequent to this survey.