

**THE CTENOTUS GRANDIS SPECIES-GROUP
(LACERTILIA: SCINCIDAE)**

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ABSTRACT

This species-group consists of three spinifex-inhabiting taxa from the arid zone of the western half of Australia, viz. *C. g. grandis* Storr, *C. g. titan* nov. and *C. hanloni* nov.

INTRODUCTION

Financed by grants from Mr and Mrs W.H. Butler, the Western Australian Museum engaged two collecting parties in the North West Cape region in December 1978. One of them, comprising G. Harold and G. Barron, collected mammals and reptiles on the North West Cape peninsula. The other, comprising T.M.S. Hanlon and D. Knowles, collected reptiles mainly in the deserts south and south-east of Exmouth Gulf.

Harold and Barron collected a series of *C. grandis* ranging in snout-vent length from 103 to 120 mm. In the same period, but 50-100 km to the south-east, Hanlon and Knowles collected a series of *grandis*-like skinks with SVL 55-63. The second series also differed considerably in coloration from the first, and the field parties not unreasonably believed that two species were involved. In the laboratory, however, I found the second series to be compatible with my description of *C. grandis* and tentatively concluded that the specimens were immature.

Subsequently Andrew Chapman kindly dissected the second series and assured me that on the contrary it was adult. I then compared the second series directly with the first and found it to differ in several additional characters, e.g. the subdigital calli were much narrower, midbody scale rows, supraciliaries and palpebrals were fewer, the nasals were contiguous rather than separated, and the second loreal was narrower and had a high, angular apex.

It was clear now that the second series belonged to a new species, and it was only compatible with my description of *C. grandis* because that description was partly based on the new species. It thus became necessary to redescribe *C. grandis*, which itself proved to be divisible into two subspecies.

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Unless otherwise indicated, all material is lodged in the Western Australian Museum.

SYSTEMATICS

Ctenotus grandis species-group

Moderately small to very large *Ctenotus* with dorsal pattern of five dark stripes and lateral pattern of pale flecks on a dark ground. Three supraoculars in contact with frontal, the second much wider than third and usually wider than first. Fourth to penultimate supraciliaries noticeably smaller than others. Second loreal usually pentagonal with an angular apex in one taxon and occasionally so in others. Presuboculars usually two, rarely three. Upper labials usually 8. Midbody scale rows 30-38. Subdigital lamellae narrowly to widely callose (for description and illustration of this condition see Storr *et al.*, in press).

Ctenotus grandis grandis

Ctenotus grandis Storr, 1968, J. Proc. R. Soc. West. Aust. 51: 100. 39 km ENE of Laverton, W.A.

Diagnosis

A large, stout, reddish brown member of the *C. grandis* group with nasals usually separated, supraciliaries seldom fewer than 8, and subdigital calli narrow to moderately wide.

Distribution

Great Sandy, Gibson and Great Victoria Deserts of Western Australia and the Tanami Desert of the Northern Territory (see Fig. 1).

Description

Snout-vent length (mm): 48-105 (N 25, mean 79.5). Length of appendages (% SVL): foreleg 24-29 (N 19, mean 26.3), hindleg 36-45 (N 19, mean 40.5), tail 163-218 (N 9, mean 195).

Nasals separated (N 24) or in short contact (2). Prefrontals in contact (N 24) or very narrowly separated (2). Supraciliaries 7-9 (N 20, mean 8.0), fourth to penultimate usually much smaller than others. Palpebrals (i.e. upper ciliaries) 10-13 (N 17, mean 11.5). Second loreal 0.9-1.5 times as wide as high (N 23, mean 1.21), top of scale usually bowed upwards. Upper labials 8 (N 22) or 9 (1). Nuchals 1-5 (N 24, mean 2.6). Ear lobules 4-7 (N 20, mean 5.6), usually acute or subacute, third usually (second or fourth occasionally) largest. Midbody

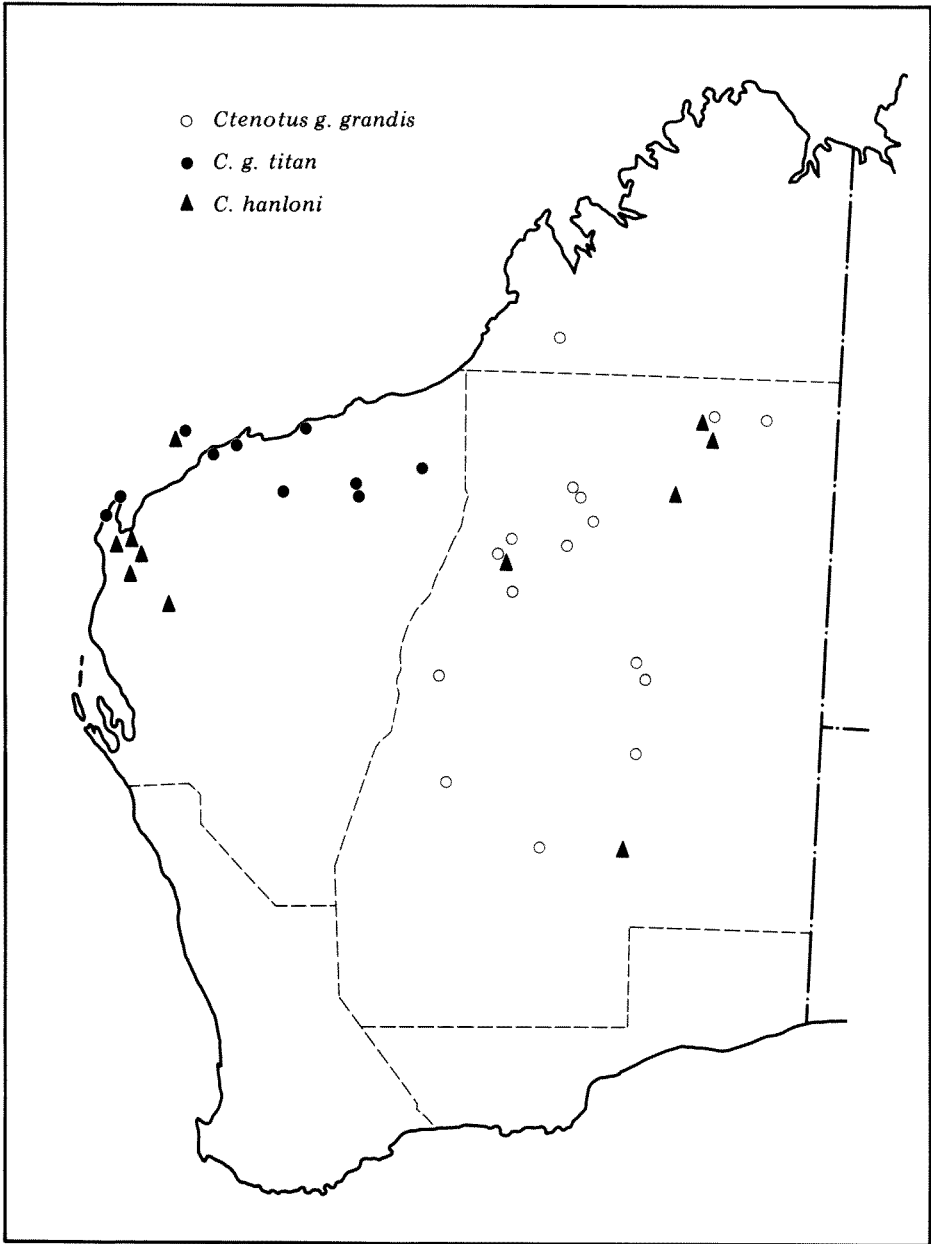


Fig. 1. Map of Western Australia showing location of specimens of *Ctenotus g. grandis*, *C. g. titan* and *C. hanloni*.

scale rows 30-32 (N 21, mean 31.0). Lamellae under fourth toe 21-28 (N 21, mean 23.0).

Head olive brown. Tail greyish brown. Back pale brown (dark chestnut in life) with 5 dark stripes: vertebral blackish brown; dorsal and laterodorsal dark brown, narrower and less prominent than vertebral and sometimes broken and barely discernible. Side of body dark greyish brown flecked with white, flecks tending to cluster and align vertically. Side of tail with irregular white or buff vertical bars edged with dark brown.

Material

Kimberley Division (W.A.): Edgar Ranges (18°55'S, 123°15'E) (54077).

Eastern Division (W.A.): Godfrey Tank (63416); Djalawon Creek (20°20'S, 127°26'E) (64128); Staffords Bore (20°21'S, 127°24'E) (64095); 38 km SSW of McTavish Claypan (20°56'S, 123°15'E) (64293); 50 km S of McTavish Claypan (21°02'S, 123°20'E) (64237); 12 km NNE of Well 29, Canning Stock Route (22°28'S, 123°55'E) (63954-5); 4 km S of Talbot Soak (22°34'S, 122°22'E) (63848); 29 km S of Nooloo Soak (22°52'S, 121°57'E) (63721, 63727, 63762); Well 26, CSR (3901); Durba Springs (23°45'S, 122°31'E) (51930, 51938-9); 8 km S of Charlies Knob (53605); 17 km NW of Mt Beadell (28813); S of Carnarvon Range (53646, 53672); 10 km SW of Manunda Rockhole (25941); 30 km SE of Mt Keith (27°24'S, 120°42'E) (62760); 23 km NE of White Cliffs (51072); 43 km E of Laverton (28830-1).

Northern Territory: 48 km SW of Wauchope (24334).

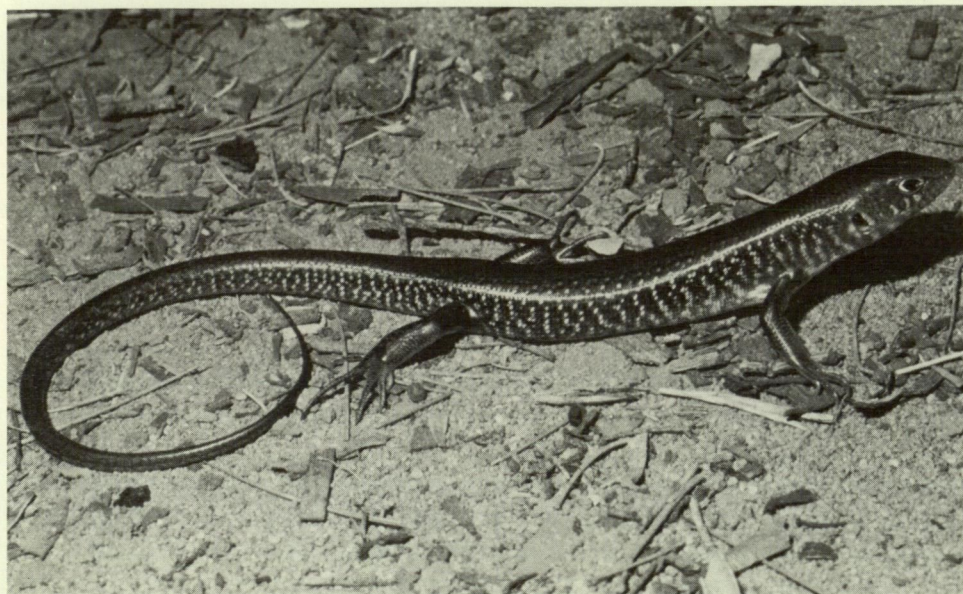


Plate 1. A *Ctenotus grandis titan* from Pannawonica photographed in life by G. Harold.

Ctenotus grandis titan subsp. nov.

Plate 1

Holotype

R61444 in Western Australian Museum collected on 17 December 1978 by G. Harold and G. Barron at 1 km S of Exmouth, Western Australia, in 21°56'S, 114°08'E.

Diagnosis

Differing from *C. g. grandis* in its greater size, paler coloration (in life), wider subdigital calli and more numerous midbody scale rows.

Distribution

Arid north-western Western Australia, i.e. the Pilbara with isolated populations on Barrow Island and the North West Cape peninsula (see **Fig. 1**).

Description

Snout-vent length (mm): 65-120 (N 27, mean 104.1). Length of appendages (% SVL): foreleg 23-29 (N 25, mean 25.2), hindleg 36-44 (N 25, mean 39.4), tail 152-218 (N 15, mean 189).

Nasals separated (N 22) or in short contact (4). Prefrontals in contact (N 22) or very narrowly separated (2). Supraciliaries 8 or 9 (7 on one side of one specimen, N 23, mean 8.3), fourth to penultimate usually much smaller than others. Palpebrals (i.e. upper ciliaries) 10-13 (N 20, mean 11.5). Second loreal 1.0-1.8 times as wide as high (N 25, mean 1.37), top of scale usually bowed upwards. Upper labials 7 (N 1), 8 (20) or 9 (2). Nuchals 1-5 (N 26, mean 3.1). Ear lobules 5-7 (N 23, mean 6.0), usually acute or subacute. Midbody scale rows 32-36 on mainland (N 23, mean 33.4), 38 on Barrow Island (N 3). Lamellae under fourth toe 19-27 (N 25, mean 23.2), widely callose.

Coloration generally as in *C. g. grandis* but paler in life (e.g. dorsal ground colour orange-brown) and with a stronger tendency for pale lateral flecks to cluster and align vertically.

Paratypes

North-west Division (W.A.): Mundabullangana (17293); Myaree Pool, lower Maitland River (60506-7); Balmoral (28727); Meentheena (46176-7); Abydos (10804); Woodstock (13093, 13234, 27860-1, 28725); Tambrey (20006); Barrow Island (28456, 45361, 56706); North West Cape (28726); 3 km SE of Cape Vlaming (31434); 1 km S of Exmouth (62441); Yardie Creek Station (13210); 3-8 km N of Yardie Creek watercourse (61448-9, 61452, 61463, 61485).

Ctenotus hanloni sp. nov.

Plate 2

Holotype

R60952 in Western Australian Museum, collected on 19 December 1978 by T.M.S. Hanlon and D. Knowles on a reddish sandplain 22 km NNW of Giralia, Western Australia, in 22°30'S, 114°19'E.

Diagnosis

A moderately small greenish or reddish brown member of the *C. grandis* group, distinguishable from both subspecies of *C. grandis* by its contiguous nasals, narrower subdigital calli, fewer supraciliaries, higher and apically more angular second loreal, and pale lateral flecks not aligned vertically.

Distribution

Arid north-western Western Australia (Barrow Island and the country south and east of Exmouth Gulf from the Sandalwood Peninsula south-east through Winning to Williambury) and the Great Sandy Desert (see **Fig. 1**). Almost certainly extending to the Tanami Desert of Northern Territory and the Great Victoria Desert of Western Australia (see under Remarks).

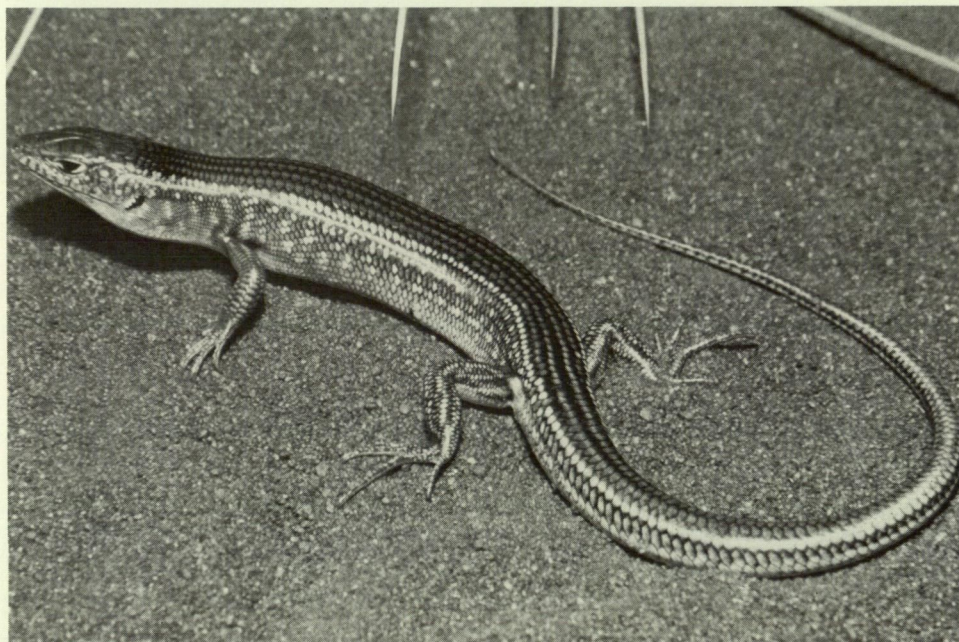


Plate 2. Holotype of *Ctenotus hanloni* photographed in life by T.M.S. Hanlon.

Description

Snout-vent length (mm): 33-71 (N 21, mean 52.5). Length of appendages (% SVL): foreleg 23-31 (N 21, mean 27.8), hindleg 38-50 (N 21, mean 44.6), tail 157-201 (N 11, mean 188).

Nasals in contact. Prefrontals in contact (N 13) or narrowly separated (N 7). Supraciliaries 6-8 (N 21, mean 7.0), fourth to penultimate a little smaller than others. Palpebrals (i.e. upper ciliaries) 9-11 (N 20, mean 10.0). Second loreal 0.9-1.6 times as wide as high (N 21, mean 1.17), usually pentagonal with a high angular apex. Upper labials 8 (N 20) or 9 (1). Nuchals 1-8 (N 21, mean 3.3). Ear lobules 4-7 (N 21, mean 4.9), acute or subacute in adults, obtuse in juveniles, third usually largest. Midbody scale rows 30-32 (N 16, mean 30.9) south-east of Exmouth Gulf; 34 (N 4) at Barrow Island and in the Great Sandy Desert. Lamellae under fourth toe 19-27 (N 21, mean 23.1), each with a dark brown obtuse keel or narrow callus.

Head olive brown. Legs and tail brown. Back rich reddish brown in adults, olive green in juveniles, with 5 dark stripes (dark brown in adults, black or dark grey in juveniles; the most distinct being the vertebral and laterodorsals). Dorsolateral stripe bluish white. Side of body dark olive brown densely flecked with whitish; flecks tending to be longitudinally orientated. Under surface white, the belly suffused with blue in alcohol.

Remarks

This skink is named after T.M.S. Hanlon who, alone or with D. Knowles, collected most of the type series.

Judging from my notes on the paratypes of *C. grandis* I am almost certain that several of those collected by Dr E.R. Pianka in the Great Victoria Desert of Western Australia were in fact *C. hanloni*, e.g. ERP 11075, 11086, 11092, 11094 and 12423 from 13 km W of Neale Junction (28°17'S, 124°50'E). My account of *C. grandis* in the Northern Territory (Storr 1970) was similarly vitiated by the inclusion of specimens that were almost certainly *C. hanloni*, e.g. ERP 11659 and 11672-3 from 11 km SE of The Granites and SAM 5038 from Yuendumu.

Paratypes

North-west Division (W.A.): Barrow I. (28455, 40028); 22 km NNW of Giralia (60953, 60961-4, 61036); 1 km N of Bullara (61007); Giralia HS (60978); 3 km E of Giralia (61151); 17 km S of Giralia (61199); Marrilla (5341); 23 km S of Winning (36153); Williambury (62430) and 5 km S (62420-2).

Eastern Division (W.A.): Godfrey Tank (63420); 16 km S of Mt Romilly (40898); 2 km E of Well 39, Canning Stock Route (64198); 30 km S of Nooloo Soak (22°53'S, 121°58'E) (63176).

REFERENCES

- STORR, G.M. (1970)—The genus *Ctenotus* (Lacertilia, Scincidae) in the Northern Territory. *J. Proc. R. Soc. West. Aust.* **52**: 97-108.
- STORR, G.M., SMITH, L.A., & JOHNSTONE, R.E.—*Lizards of Western Australia. I. Skinks* (in press).