

THE GENUS *CRYPTOBLEPHARUS* (LACERTILIA, SCINCIDAE) IN WESTERN AUSTRALIA

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ABSTRACT

Four taxa are recognized: *C. virgatus clarus* (Storr), *C. carnabyi* nov., *C. plagiocephalus* (Cocteau) and *C. megastictus* nov.

INTRODUCTION

It has become clear in recent years that the *Ablepharus boutonii* of authors, especially Mertens (1931, 1964), far from being a single wide-ranging polytypic species, comprises a genus of many species. The oldest name for this genus is *Cryptoblepharus*. For the osteology of *Cryptoblepharus*, see Fuhn (1969); and for its relationship to other lygosomatine skinks, see Greer (1974).

A big task for future workers is to arrange the numerous 'races of *Ablepharus boutonii*' into species. It is unlikely that any of the four Western Australian members of *Cryptoblepharus* are conspecific with *boutonii* of Mauritius; the two species most like *boutonii* (*plagiocephalus* and *carnabyi*) are still closer to each other.

All the material used in this revision is lodged in the Western Australian Museum. I am grateful to Mrs Ariadna Neumann for translating much of Professor Mertens' work.

Genus *Cryptoblepharus* Wiegmann

Diagnosis (based on Australian species).

Small arboreal or rock-climbing pentadactyl skinks with lower eyelid immovable and bearing a large circular transparent disc, and interparietal and frontoparietals fused into a large quadrilateral shield. Distinguishable from *Morethia* by frontal not much larger than prefrontals, enlargement of uppermost periorcular granules, and absence of supranasal.

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Distribution

From east coast of Africa through the Indian Ocean and Australia to the east Pacific.

Description (based on Australian species)

Nasals widely separated, usually bearing a groove behind nostril. Pre-frontals normally forming a long median suture. Frontal usually in narrow contact with frontoparietal-interparietal, sometimes separated. Loreals two, in horizontal series. Supraoculars 4, second largest, first two in contact with frontal. Supraciliaries normally 5 or 6 with respectively second or third widest. Enlarged periorcular granules (ciliaries) usually 3, occasionally 4, rarely 2 or 5. Labials normally 7, fourth subocular and much the widest. Temporals normally 3, uppermost much the largest. A pair of very large nuchals, sometimes followed by one or more smaller nuchals. Scales smooth, 20-30 rows at midbody. Subdigital lamellae smooth, callose or finely keeled.

KEY

1. Straight-edged black laterodorsal stripe, bordered below by conspicuous white dorso-lateral stripe; supraciliaries normally 5 *virgatus clarus*
No laterodorsal stripe — at most a laterodorsal series of black or dark brown spots; with or without a pale ragged-edged dorsolateral stripe; supraciliaries 5 or 6 2
2. Subdigital lamellae finely keeled and mucronate; plantar scales with sharp white apices; supraciliaries normally 5 *carnabyi*
Subdigital lamellae smooth or callose; plantar scales with rounded brown apices; supraciliaries usually 6 3
3. Dark dorsal spots (if present) much smaller than dorsal scales and largely confined to laterodorsal series; dark upper lateral spots tending to coalesce, forming an irregular blackish stripe; lower labials and lower half of upper labials pale (except in far south of W.A.); abdomen whitish in alcohol; occurring throughout most of W.A. and N.T. *plagiocephalus*
Dark dorsal spots often occupying whole of scale and as often present on two median series as on outer dorsals; no black upper

lateral stripe, lateral pattern tending to be reticulate, i.e. scales dark-edged and pale-centred; upper and lower labials dark; abdomen bluish in alcohol; confined to N.W. Kimberley

... .. *megastictus*

Cryptoblepharus virgatus clarus

Ablepharus boutonii clarus Storr, 1961, W. Aust. Nat. 7: 176. Dalyup River, W.A. (G.M. Storr).

Diagnosis

A small *Cryptoblepharus* with straight-edged black laterodorsal stripe, conspicuous bluish white dorsolateral stripe and 5 supraciliaries.

Distribution

South and south-east coasts of Western Australia from the Pallinup River to Eucla, thence east through the west coast of South Australia presumably to south-east Queensland.

Description

Snout-vent length (mm): 18-40 (N 46, mean 33.8). Tail up to 156% of SVL.

Supraciliaries 5, second usually much the widest. Ciliaries usually 3 (93%), rarely 2 or 4. Upper labials 7 (95%), rarely 6. Nuchals 1-4, mostly 1 or 2 (N 42, mean 1.7). Midbody scale rows 22-28 (N 38, mean 25.3). Subdigital lamellae smooth, 16-21 (N 36, mean 18.8) under fourth toe.

Usually a black vertebral line on anterior quarter of body. Black laterodorsal stripe usually wide, leaving only a narrow median strip of grey ground colour. Narrow whitish dorsolateral stripe. Flanks grey spotted with black and dotted with white, black markings concentrating in upper lateral zone.

Remarks

Until more east Australian material is examined, it will remain uncertain whether *clarus* is conspecific with *C. virgatus* (Garman). Our two south-east Queensland specimens (18270 from Amiens and 18283 from Enoggera) are discoloured with formalin but appear to have much the same colour pattern as in western *clarus*; they also agree in their small size and low number of supraciliaries (5). Our specimens from further north and west in Queensland, viz. 21476-81 and 21489 from Charters Towers and 18269 from Cunnamulla are larger (SVL in 7 of 8 specimens exceeds 40 mm) and 6 of 8 specimens have 6 supraciliaries of which the fourth is considerably higher than adjacent scales; they have 24 or 26 rows of midbody scales; the

snout is relatively short and the head relatively high; though distinct from *clarus*, they do not agree with descriptions of typical *virgatus*.

Material

South-west Division (W.A.): Pallinup River, 16 km NE of Bluff Knoll (47732); Hunter River, 8 km E of Bremer Bay (36200); Fitzgerald River (36782, 36851-2, 36864-5, 36879-80, 36945, 36992-3); Middle Mt Barren (36905-7).

Eucla Division (W.A.): Oldfield River (30145); Munglinup River (36231-3); Jonegatup, Young River (36286); Dalyup River (18228-31); 8 km E of Gibsons Soak (21992); Esperance (13370, 18232); 23 km E of Esperance (18225); Mondrain Island, Archipelago of the Recherche (18226-7); Middle Island, Archipelago of the Recherche (47626); Pine Hill (36214-9); Junana Rock (22523); Toolinna Rock-hole (32° 42'S, 124° 57'E) (45347); Caiguna (31893); Billolee Rock-hole (32° 33'S, 125° 33'E) (45353); 24 km SE of Cocklebiddy (34476); 43 km E of Madura (24646-7); Eucla (294).

South Australia: 6 km E of Wilsons Bluff (28132); 14 km E of Smoky Bay (24537).

Cryptoblepharus plagiocephalus

Scincus plagiocephalus Cocteau, 1836, Etudes sur les Scincoides, p. 7. Tasmania and Shark Bay (Péron) [= Swan River, W.A., *vide* Storr 1961: 176].

Ablepharus peronii Duméril & Bibron, 1839, Erpétologie générale 5: 813. [Swan River, W.A., *vide* Storr 1961: 176].

Tiliqua Buchanani Gray, 1839, Ann. Nat. Hist. 2: 291. New Holland [= Western Australia, *vide* Boulenger 1887: 347].

Ablepharus boutonii var. *metallicus* Boulenger, 1887: 347. North Australian Expedition, J.R. Elsey [presumably Victoria River, N.T.].

Ablepharus boutoni australis Sternfeld, 1918, Abh. Senckb. Naturf. Ges. 36: 424. West Central Australia [= Hermannsburg, N.T.].

Ablepharus boutoni punctatus Sternfeld, 1918, *ibid.* Western Australia.

Diagnosis

A moderately large *Cryptoblepharus* with no black laterodorsal stripe (at most only a laterodorsal series of dark spots, each much smaller than a dorsal scale); pale dorsolateral stripe (when present) never sharp-edged; supraciliaries 6 (occasionally 5); subdigital lamellae smooth or callose; plantars with flattened, smooth, brown apices.

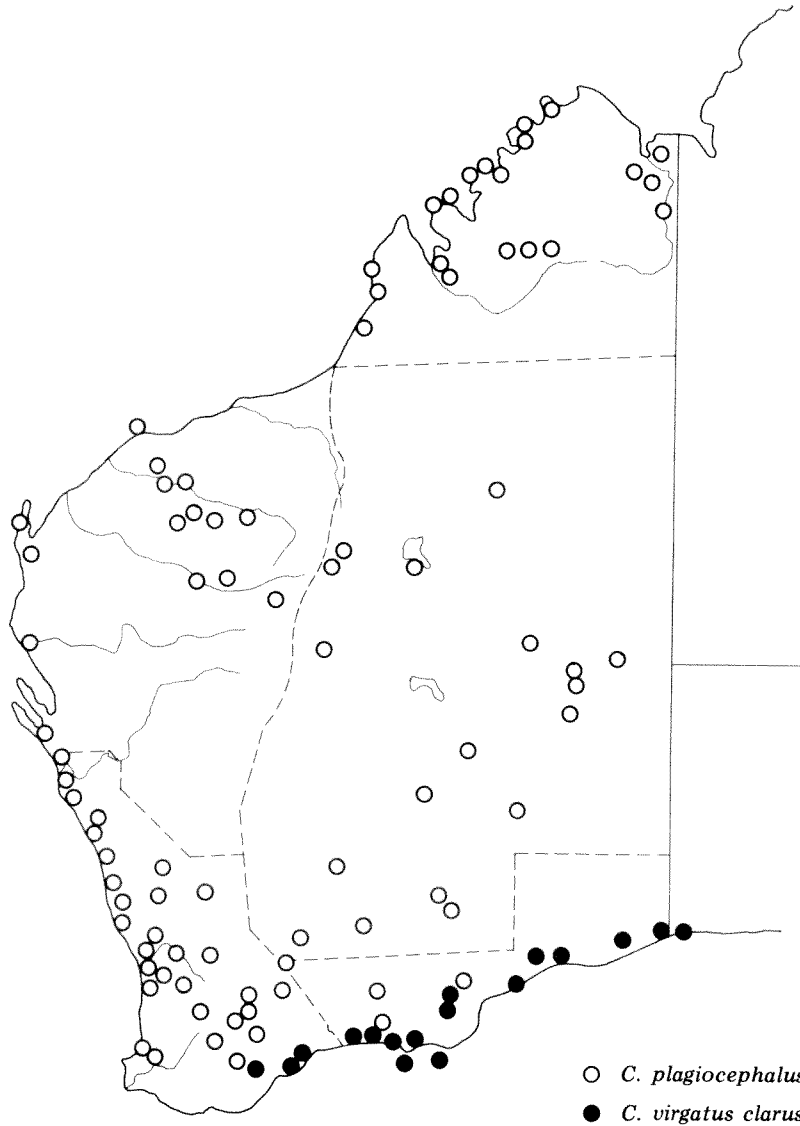


Fig. 1: Map of Western Australia showing location of specimens of *Cryptoblepharus virgatus clarus* and *C. plagiocephalus*.

Distribution

Greater part of Western Australia south to Busselton, Jarrahwood, Gnowangerup, Scaddan and Balladonia. Extralimital in Northern Territory and western South Australia.

Description

Snout-vent length (mm): 16-47 (N 388, mean 36.6). Tail up to 177% of SVL.

Supraciliaries usually 6 with third widest; occasionally 5 with second widest. Ciliaries 3 (94%), occasionally 4, rarely 1, 2 or 5. Upper labials 7 (94%), occasionally 8. Nuchals 1-4 (N 363, mean 1.1). Midbody scale rows 22-30 (N 292, mean 25.2). Subdigital lamellae smooth or with broad to moderately narrow brown calli; 14-22 (N 304, mean 17.9) under fourth toe.

Dorsally coppery or olive brown or olive grey, each scale with several dark brown or black striae; striae merging to form spots, especially on laterodorsal series. Flanks usually spotted with black and dotted with brownish white; black spots tending to coalesce and form an upper lateral stripe.

Geographic variation

Specimens from the South-west Division have more midbody scale rows than specimens from elsewhere (24-30, mean 25.8; *vs* 22-28, mean 24.7) and a smaller proportion of individuals with 8 (rather than 7) upper labials or 4 (rather than 3) ciliaries. They are also darker and less metallic in coloration. The trend towards melanism increases sharply in the southern interior of the Division (i.e. north to the Darling Range and the Narrogin and Lake Grace districts) and is possibly due to past introgression from *C. virgatus clarus*.

Pilbara specimens are the palest. Dark dorsal spots and striae are commonly sparse or absent; hence most specimens have little or no indication of a pale dorsolateral stripe (which is essentially a zone free of spots and striae).

In the Kimberley and Northern Territory almost all specimens have the subdigital lamellae callose, a condition that becomes increasingly uncommon further south. The frequency of 4 ciliaries is highest in the north of the Northern Territory (27%).

Material

Kimberley Division (W.A.): Kalumburu (27957-8, 40505, 43571-6, 47893-4); Borda Island (41489); Crystal Head, Admiralty Gulf (44285-7); Mitchell Plateau (43158-60, 43206, 43518, 44261); Boongaree Island (44091, 44104); Prince Regent River Reserve (46677, 46711-2, 46784, 46791, 46853, 46894, 46928, 46963, 46983-5); Augustus Island (41300); 17 km ESE of Kuri Bay (40393-5, 40398); Wood Islands (44169-73); Wotjulum (11218); Inglis Gap (27953-6); Mt Bell (32271); Lake Gladstone (32310-3); Ninbing (27948); Wyndham (32360-01); Parrys Creek (27949); 40 km ESE of Wyndham (23104); 50 km SE of Wyndham (23089); Lake Argyle (42758, 42774, 42785, 42905, 42915); Derby (20271, 45031-2); 24 km SE of Derby (32190); Coulomb Point (40264); Broome (14065, 14093); Injudinah Swamp (46494); Lagrange (27936-45).

North-west Division (W.A.): Dolphin Island (14289, 14296-7); Angel Island (37262); Mt Herbert (20023-4); Millstream (20025, 34735); Tambrey (20022); Hancock Gorge, 25 km S of Wittenoom (37075, 37485); Hamersley Gorge (34730); Yampire Gorge (18539); Weeli Wolli Creek, W of Marrillana (22640); near Tom Price (31015); Yardie Creek (47773); 13 km NE of Cardabia (16967); 'Bernier Island' [probably in error for Carnarvon] (11251-2); Tunnel Creek, 40 km N of Mt Vernon (22807-14); gorge *ca* 30 km W of Mt Vernon (22815-8); 37 km NW of Mt Vernon (25242); Kumarina (23979-81); 8 km S of Tamala (23854).

Eastern Division (W.A.): Well 37, Canning Stock Route (3974); 32 km E of Jiggalong (25202); 19 km SE of Jiggalong (42294); Durba Hills, S of Lake Disappointment (40350-3); Windich Spring, Canning Stock Route (27951-2); dunes N of Lake Breaden (21038); Walter James Range (34223); Warburton Range (22109); Ainslie Gorge, 18 km S of Warburton Range (18284-5); Skipper Knob, 116 km S of Warburton Range (22116); Lake Throssell (18238); White Cliffs (20664); 220 km N of Seemore Downs (24864); Zanthus (26521); 24 km N of Coonana (30264); 5 km NW of Callion (22535); Higginsville (7088); 24 km S of Yellowdine (37931, 37938); Split Rocks (37828).

South-west Division (W.A.): 48 km NNW of Murchison House (33925); 26 km NE of Kalbarri (33491-3); Murchison House (29927); Kalbarri (9615, 18262, 29628) and 8 km SE (33881) and 42 km ESE (33809); Hutt River (11133-4); 32 km E of Geraldton (18261); Ellendale Pool (18268); Greenough River (11137); Lake Arrowsmith (22250-1); Lake Arramel (22254); 40 km SW of Enneabba (25289-92); Buntine Reserve (43601-5, 44905); 3 km N of Mt Lesueur (25288); Cockleshell Gully (22232); mouth of Moore River (18254); 47 km NNE of Beacon (44243-4); 23 km NE of Wialki (18237); Miling (47767); Bindi Bindi (22839); Yewadabby Spring (18271-6); Wookawooka (18255-7); 11 km SE of Bindoon Hill (18258-60); Culham (22459); Toodyay (29291-6); Chittering East (12833); Muchea (461); Bullsbrook (13121); Gngangara East (34369); Noble Falls (21803, 31130); Northam (31448); 32 km SE of Kellerberrin (18235); 16 km SE of Sawyers Valley (22673); Mundaring Weir (15204, 19249, 19747); Zamia (21342-4); Darlington (2806); Boya (21747); Middle Swan (4935); Perth and suburbs (4184, 18247-53, 21607, 21882, 22999, 25367, 26440, 26583, 28933, 32372, 33379, 34119, 40012-3, 47361); Gooseberry Hill (4678); 10 km E of Kalamunda (16915); Lesmurdie (18242-6); Karragullen (18236); Kenwick (18241); Kelmscott (12898-9); Jandakot (28313-4, 36560); Garden Island (28478-9); W of Byford (15821); Bedfordale (18240); York (39104, 43818-20); Boyagin Reserve (41008-11, 43991); Pingelly (1937) and 26 km E (18234); Bending Flora Reserve (43677-8); East Kulin (8108); Dragon Rocks (42978-9, 42981); North Bannister (36322); Narrogin (5968); Lake Grace (42601-3, 43822, 44204, 44208-11, 44227-8); Lake Varley (19805); North Tarin Rock Reserve (40074-5, 40085, 44418); Tarin Rock Reserve

(40037-8, 40058, 44397-8, 44454); Chinocup Reserve (41099); Cairlocup Reserve (41116-8); 10 km E of Woodanilling (23351-2); Busselton (42592); Jarrahwood (45748); Gnowangerup (33411-2).

Eucla Division (W.A.): 32 km N of Salmon Gums (18233); 51 km N of Esperance (19922); 19 km SW of Balladonia (17423).

Northern Territory: Yirrkala (13510); near Oenpelli (32247-8, 37165-70); Port Essington (31178); near Darwin (23500, 32239-41); ca 30 km NW of Mt Roper (32058); Red Lily Lagoon, Daly River (34605-11); 26 km NE of Pine Creek (23206); Edith River, 51 km NW of Katherine (23175); Katherine (13948-9, 13957, 19894-5, 23173); 35 km N of Daly Waters (24148); Elliott (24189); near Tennant Creek (21471-3, 21475); 35 km NNE of Wauchope (24274); Owen Springs (20850); 32 km W of Hermannsburg (37085); Mt Olga (34159-60).

South Australia: 11 km NE of Musgrave Park (20947); Pidinga (25425-7).

Cryptoblepharus carnabyi nov. sp.

Holotype

R21182 in Western Australian Museum, collected by D.L. Serventy and G.M. Storr on evening of 29 July 1963 under bark of dead standing mulga (*Acacia aneura*) at 11 km WSW of Youanmi, Western Australia, in 28° 37'S, 118° 43'E.

Diagnosis

A small *Cryptoblepharus* much the same as *C. plagiocephalus* in coloration but with each subdigital lamella bearing a fine weak keel terminating in a mucron, palmar and plantar scales white and sharp-pointed, and supraciliaries normally 5.

Distribution

Sporadically in Western Australia from southern Kimberley south to the Houtman Abrolhos, northern Wheat Belt and Eastern Goldfields. Extralimital in Northern Territory (Sir Edward Pellew Group in Gulf of Carpentaria).

Description

Snout-vent length (mm): 18-40 (N 91, mean 32.7). Tail up to 186% of SVL.

Supraciliaries normally 5, second much the widest. Ciliaries usually 3 (87%), occasionally 4. Upper labials usually 7 (87%), occasionally 8, rarely 6. Nuchals 0-3, mostly 1 (N 82, mean 1.1). Midbody scale rows 22-28 (N 82, mean 25.1). Lamellae under fourth toe 14-22 (N 85, mean 18.6).

Coloration varying as in *plagiocephalus*, i.e. more coppery in north, more spotted in south; where they are sympatric *carnabyi* is usually the more strongly spotted and striate.

Remarks

This species is dedicated to the memory of naturalist Ivan C. Carnaby (1908-1974), who donated many specimens of reptiles and birds to the Western Australian Museum.

It seems that *C. carnabyi* is being replaced by its slightly larger sibling, *C. plagiocephalus*. *C. carnabyi* survives mainly on islands and peninsulas.

Paratypes

Kimberley Division (W.A.): Derby (20267-70, 20272-3, 20338-41, 22331, 23004, 45033-4); 8 km S of Derby (23006-8); Beagle Bay Mission (46481); Coulomb Point (40258-9, 40261-3); 24 km SSW of Christmas Creek HS (46117).

North-west Division (W.A.): 24 km E of Mundabullangana (17070); Depuch Island (14563); Barrow Island (27946-7, 28458-9, 47666-9); 27 km NE of Marrillana (18277-9); Bernier Island (13182*a-b*, 20512-5); Dorre Island (13194*a-b*); Dirk Hartog Island (12471-3, 42368-70, 44545); Wilds Island, Freycinet Estuary (25778); Three Bays Island, Freycinet Estuary (25749); south end of Bellefin Prong (39031); Hamelin Pool (18263-7); Mullewa-Gascoyne Junction road, near Talling Peak (47711).

Eastern Division (W.A.): Coondra Coondra Spring, 40 km NE of Jiggalong (42291); 11 km WSW of Youanmi (21183-4); Cowarna Downs (14239).

South-west Division (W.A.): Lockwood Spring, Kalbarri National Park (37563, 37568); East Wallabi Island (18283, 22781, 25833-4); West Wallabi Island (18280-1); Rat Island (30440-3, 37534-6); Gun Island (27193-4, 30437); Shark Island (37507); 35 km NE of Mingenew (31386); Koorda (22836).

Northern Territory: islet east of Centre Island, Sir Edward Pellew Group (40311).

Cryptoblepharus megastictus sp. nov.

Holotype

R43245 in Western Australian Museum, collected on 24 January 1973 by L.A. Smith and R.E. Johnstone on the Mitchell Plateau, Western Australia, in 14° 52' S, 125° 50' E.

Diagnosis

A *Cryptoblepharus* with low head and long snout, large dark dorsal spots, and no pale dorsolateral stripe. Further distinguishable from sympatric

plagiocephalus by dark lips, smooth (rather than callose) subdigital lamellae, and bluish abdomen in alcohol.

Distribution

North-west Kimberley, including the Osborne Islands.

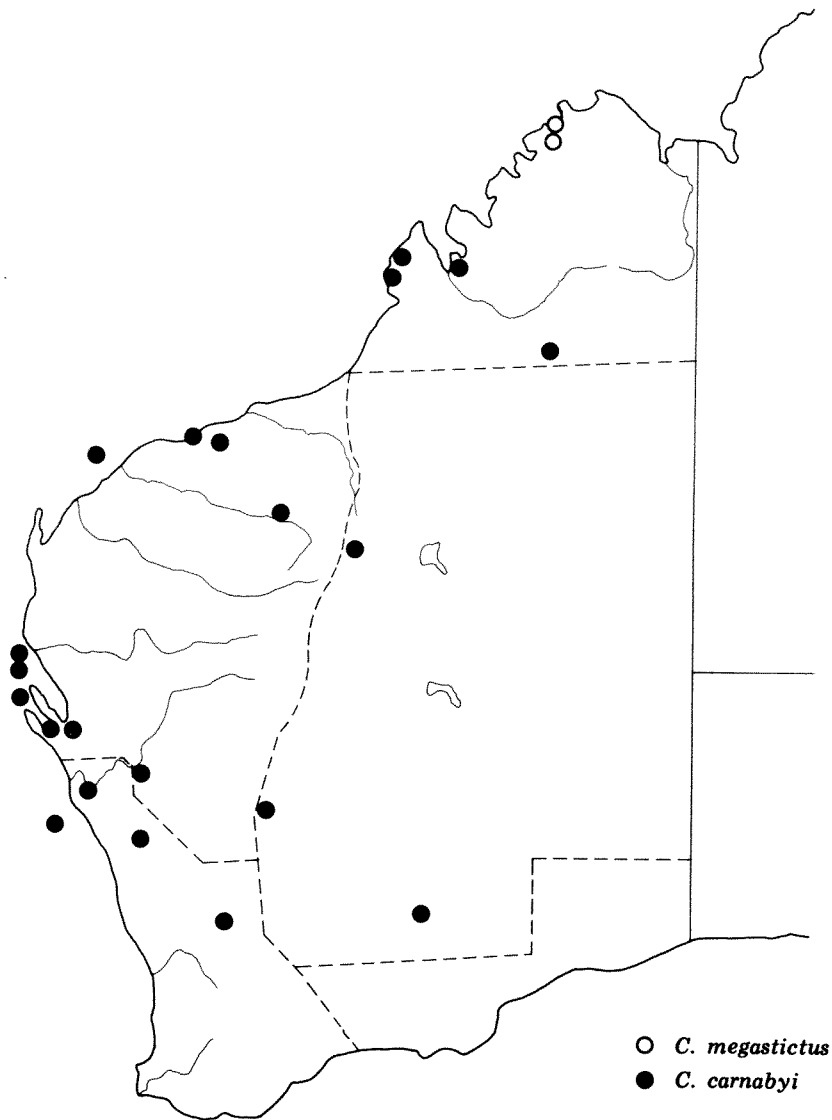


Fig. 2: Map of Western Australia showing location of specimens of *Cryptoblepharus carnabyi* and *C. megastictus*.

Description

Snout-vent length (mm): 26-38 (N 9, mean 34.6).

Supraciliaries usually 6, occasionally 5. Ciliaries 3. Upper labials usually 7, occasionally 8. Nuchal 1. Midbody scale rows 24-28 (N 6, mean 26.2). Lamellae under fourth toe 17-20 (N 8, mean 18.4).

Dorsally coppery brown in life (*vide* L.A. Smith), becoming olive green, olive brown, olive grey or bluish grey in alcohol, spotted and striated with black or dark brown. Lateral scales dark-edged, pale-centred. Limbs coppery brown in life, variegated with black.

Remarks

These skinks are confined to black basalt rocks on the coast or on near-coastal plateaux and, unlike sympatric *plagiocephalus*, were never found in trees (L.A. Smith, pers. comm.). On the coast of Middle Osborne Island they actually live in the splash zone. *C. megastictus* is thus ecologically similar to *C. litoralis* (Mertens) of north-east Queensland.

This is yet another lizard endemic to the sub-humid zone of north-west Kimberley.

Paratypes

Kimberley Division (W.A.): Mitchell Plateau (43246); Middle Osborne Island (41493-8); South-west Osborne Island (44114).

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