

WHIP SNAKES (*DEMANSIA*, ELAPIDAE)
OF WESTERN AUSTRALIA

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ABSTRACT

The eight taxa inhabiting Western Australia are described and keyed, viz. *Demansia simplex* nov., *D. olivacea olivacea* (Gray), *D. olivacea rufescens* nov., *D. olivacea calodera* nov., *D. reticulata reticulata* (Gray), *D. reticulata cupreiceps* nov., *D. atra* (Macleay) and *D. papuensis melaena* nov. A lectotype is designated for *D. reticulata* (Gray).

INTRODUCTION

McDowell (1967) restricted the genus *Demansia* to the whip snakes after transferring the brown snakes and their allies to *Pseudonaja*. This return to a pre-Boulengerian concept of *Demansia* has probably been delayed by Loveridge's contention (1934:277) that the whip snakes comprised a single polytypic species, *Demansia psammophis*. Loveridge rightly questioned the reliance placed by Boulenger and other workers on such variable characters as relative height of rostral and relative length of internasal, but his series were too short for revealing the small but constant differences between species in coloration, body size and number of ventrals and subcaudals.

This revision is based on material lodged in the Western Australian Museum.

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GENUS *DEMANSIA* GRAY

Demansia Gray, 1842, The zoological miscellany, p.54. Type species: *Lycodon reticulatus* Gray.

Diemansia Günther, 1858, Catalogue of colubrine snakes in the collection of the British Museum, p.254. Emendation of *Demansia* Gray.

Diemenia Günther, 1863, Ann. Mag. nat. Hist. (3)12: 350. Emendation of *Demansia* Gray.

Elapocephalus Macleay, 1878, Proc. Linn. Soc. N.S.W. 2: 221. Type species: *Elapocephalus ornaticeps* Macleay [= *Demansia olivacea olivacea* Gray].

Elapocranium Macleay, 1885, Proc. Linn. Soc. N.S.W. 9: 560. New name for *Elapocephalus* Macleay, not *Elapocephalus* Gray.

Diagnosis

Small to moderately large, slender, long-tailed, large-eyed elapid snakes with anal and subcaudals divided; dorsal scales smooth, in 15 rows at mid-body, reducing to 13 well before level of cloaca; canthus rostralis sharp; temporals 2 + 2.

Distribution

Greater part of Western Australia but not far south or sandy deserts. Extralimital in eastern Australia and southern New Guinea.

Description (based on western taxa)

Snout-vent length 136-1143mm. Tail 24-36% of SVL.

Rostral triangular, about as high as wide. Internasals 0.3-0.6 times as long as prefrontals. Frontal long and narrow (in *D. atra* 2.0-2.4 times as long as wide, sides straight and strongly oblique so that scale much wider anteriorly than posteriorly; in *D. o. olivacea* 2.5-3.5 times as long as wide, sides usually concave so that scale not or only a little wider anteriorly than posteriorly; condition intermediate in other taxa). Nasal long and narrow, completely divided by nostril (except in *D. simplex*), almost always in short or point contact with preocular, which is almost always separated from frontal. Postoculars normally two, lower larger. Lower primary temporal much the largest and descending between last two labials almost to lip; secondary temporals subequally smallest and usually smaller than scale ('upper tertiary temporal') immediately behind upper secondary. Upper labials 6. Ventrals

142-220 (fewer than 171 only in *D. simplex*). Subcaudals 51-105 (fewer than 63 only in *D. simplex*). Ventrals plus subcaudals 197-322 (fewer than 241 only in *D. simplex*).

Dorsal coloration varying from coppery red through reddish brown, yellowish brown, greyish brown, leaden grey, olive grey, pale green to blackish brown and black; concealed skin between dorsals white. Pattern simple to very complex; several taxa sharing a pale-edged dark rostral line running transversely from nostril to nostril, a pale-edged dark comma-like mark around eye (consisting of a narrow circumorbital ring, extending infero-posteriorly as a narrowing tail to or towards angle of mouth), and a dark longitudinal streak on each side of chin. Ventrally white, yellowish or grey.

KEY

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| 1. Dorsals not black; ventrals yellowish or white 2 | 2 |
| Dorsals black; ventrals mostly dark grey 7 | 7 |
| 2. Dorsals green, brown, reddish or grey, usually margined or spotted with black or dark brown; ventrals yellowish or white, more than 160; transrostral and circumorbital markings usually well developed 3 | 3 |
| Dorsal coloration dark grey, ventral coloration uniformly white, the two colours sharply demarcated; no transrostral or chin markings; circumorbital markings variable; ventrals fewer than 160 <i>D. simplex</i> | |
| 3. Dorsals brownish, greyish or reddish (dark pigment concentrated at base of scale); snout and temples often spotted with dark brown 4 | 4 |
| Dorsals bright pale green, edged with black (dark pigment concentrated at apex of scale); snout, anterior labials and temples seldom or never spotted 6 | 6 |
| 4. No dark nuchal bar (or if present, not white-edged); dark transrostral line seldom reaching back to orbit; anterior labials usually spotted with dark brown (spots irregular in shape and often pale-edged) 5 | 5 |

	Pale-edged dark nuchal bar (barely discernible in largest specimens); transrostral line usually reaching back to orbit; anterior labials washed with greyish brown	<i>D. olivacea calodera</i>
5.	Dorsals reddish or reddish brown	<i>D. olivacea rufescens</i>
	Dorsals brownish or greyish	<i>D. olivacea olivacea</i>
6.	Head pale coppery brown	<i>D. reticulata cupreiceps</i>
	Head olive green	<i>D. reticulata reticulata</i>
7.	Free edge of anterior ventrals margined with black; head dark brown, usually not spotted; ventrals plus subcaudals fewer than 275	<i>D. atra</i>
	Free edge of anterior ventrals not margined with black; head brown, spotted with dark brown; ventrals plus subcaudals more than 275		<i>D. papuensis melaena</i>

SPECIES AND SUBSPECIES

DEMANSIA SIMPLEX SP. NOV.

Holotype

R13841 in Western Australian Museum, collected by Mr A.M. Douglas and Dr G.F. Mees in July 1960 at Kalumburu, Western Australia, in 14° 17' S, 126° 40' E.

Diagnosis

A small dark grey *Demansia* with relatively short, thick body; little or no pattern apart from circumorbital markings; low number of ventrals and subcaudals; and nostril not dividing nasal.

Distribution

North-west Kimberley.

Description

Snout-vent length (mm): 156-430 (N 5, mean 270.6). Length of tail (% SVL): 24.3-33.2 (N 4, mean 27.5). Ventrals 141-149 (N 5, mean 144.0).

Subcaudals 51-65 (N 4, mean 59.5). Ventrals plus subcaudals 197-207 (N 4, mean 202.7).

Upper surface dark brownish grey, sharply demarcated from white lower surface. Usually some indication of circumorbital markings (dark brown 'comma' with short tail, broadly margined with yellow).

Paratypes

Kimberley Division (W.A.): Kalumburu (28074); Mitchell Plateau in 14° 40' S, 125° 46' E (56143) and in 14° 42' S, 125° 50' E (56367); Drysdale River National Park in 14° 48' S, 126° 57' E (50508).

DEMANSIA OLIVACEA OLIVACEA

Lycodon olivaceus Gray, 1842, The zoological miscellany, p.54. Port Essington, N.T. (J. Gilbert). [For clarification of type locality, see Cogger & Lindner (1974: 90).]

Elapocephalus ornaticeps Macleay, 1878, Proc. Linn. Soc. N.S.W. 2: 221. Darwin, N.T. (E. Spalding).

Diemenia angusticeps Macleay, 1888, Proc. Linn. Soc. N.S.W. (2) 3: 417. King Sound, W.A. (W.W. Froggatt).

Diagnosis

A moderately small, greyish or brownish *Demansia*, usually with snout, temples and anterior labials spotted and transrostral, circumorbital and chin markings well developed; distinguishable from *D. o. rufescens* by non-reddish coloration of body, and from *D. o. calodera* by absence of white-edged dark bar on nape. All subspecies of *D. olivacea* distinguishable from all subspecies of *D. reticulata* by absence of pale green coloration on body, concentration of dark pigment at base (not apex) of dorsals, and tail of comma long and usually reaching lip or nearly so.

Distribution

Kimberley Division, south to Anna Plains and the Gardiner Range; also Koolan I. Extralimital in Northern Territory.

Description

Snout-vent length (mm): 178-658 (N 27, mean 396.8). Length of tail (% SVL): 26.3-35.4 (N 23, mean 30.4). Ventrals 171-210 (N 22, mean

188.2). Subcaudals 71-102 (N 22, mean 83.5). Ventrals plus subcaudals 251-303 (N 19, mean 271.8).

Yellowish brown, dark brown, greyish brown or olive brown above, sometimes darker and reddish on neck; dorsals with or without a dark spot at base (which may spread over most of scale) and a black anterolateral edge. Dark brown spots and other marks on snout and anterior labials usually white-edged. Dark circumorbital markings broadly edged with white. Temples and sides of throat usually spotted with blackish brown. Usually a grey longitudinal streak on each side of chin; rest of under surface white, yellowish white, buffy white or greyish white.

Material

Kimberley Division (W.A.): Kalumburu (13649); Old Theda (55867); Mitchell Plateau (29687); Careening Bay (44007); 18 km E of Kuri Bay (40419); Koolan I. (28071); Ivanhoe (8794); Lake Argyle (42809, 55900-1); Mt House (45688); Derby (13829, 20297); Mowanjum (13842); 37 km SSE of Derby (20357); Liveringa (10565); Halls Creek (28072); Granny Soak, Gardiner Range (51236); Lagrange (28068); Frazier Downs (28067, 28069); Anna Plains (47729).

Northern Territory: Casuarina, Darwin (47589); Darwin (40834) and 56 km SE (23287); Katherine (21937, 24928); Kildurk (31054).

DEMANSIA OLIVACEA RUFESCENS SUBSP. NOV.

Holotype

R52747 in Western Australian Museum, collected by Mr W.H. Butler on 2 May 1976 at Marandoo minesite, near Mt Bruce, Western Australia, in 22° 40' S, 118° 10' E.

Diagnosis

A small, short-tailed subspecies of *D. olivacea*, distinguishable from *D. o. olivacea* by reddish body, and from *D. o. calodera* by absence of white-edged nuchal bar.

Distribution

Pilbara region, including Dolphin and Barrow Is.

Description

Snout-vent length (mm): 162-520 (N 13, mean 311.4). Length of tail

(% SVL): 24.7-32.3 (N 12, mean 27.0). Ventrals 182-198 (N 11, mean 191.3). Subcaudals 70-83 (N 10, mean 75.7). Ventrals plus subcaudals 256-275 (N 9, mean 267.4).

Dorsals reddish or reddish brown, dark basal spot often spreading over much of scale. Head and neck dark grey or olive grey; snout paler, with or without dark spots. Transrostral line, circumorbital markings and grey mental streaks variably developed but usually weaker than in other subspecies of *D. olivacea*. Lower surface white, except where red of dorsal surface extends briefly on to free edge of ventrals.

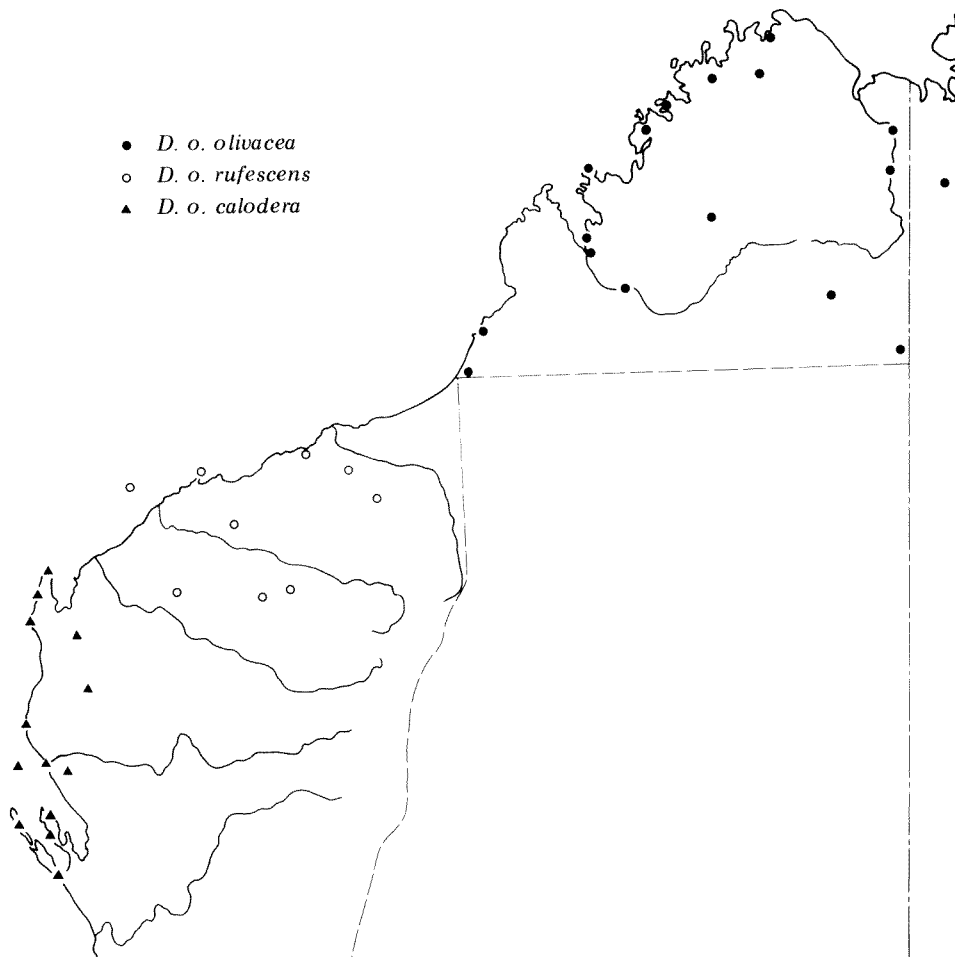


Fig. 1: Map of northern Western Australia showing location of specimens of three subspecies of *Demansia olivacea*.

Paratypes

North-west Division (W.A.): Barrow I. (28070, 51634); Dolphin I., Dampier Archipelago (14279); Roebourne (15064); Port Hedland (16504); Shaw River (15058); Marble Bar (536); Python Pool, Mt Herbert (26154); Mt Stuart (45088); Tom Price (42992); Marandoo (55965); Mt Newman (28929).

DEMANSIA OLIVACEA CALODERA SUBSP. NOV.



Fig. 2: Holotype of *Demansia olivacea calodera* photographed in life by G. Harold.

Holotype

R54992 in Western Australian Museum, collected by Messrs G. Harold and M. Peterson on 29 August 1976 at Tamala, Western Australia, in 26° 42' S, 113° 42' E.

Diagnosis

A small subspecies of *D. olivacea* with a pale-edged dark bar on neck.

Distribution

Upper west coast and hinterland from North West Cape south to Carnarvon, inland to Marilla, Wandagee and Callagiddy. Mid-west coast: Edel Land, Peron Peninsula and Bernier and Dirk Hartog Is.

Description

Snout-vent length (mm): 136-476 (N 29, mean 358.2). Length of tail (% SVL): 23.8-34.2 (N 23, mean 30.2). Ventrals 174-193 (N 25, mean 181.2). Subcaudals 65-87 (N 24, mean 75.2). Ventrals plus subcaudals 241-272 (N 22, mean 257.0).

Upper surface olive grey or olive brown, dorsals usually spotted basally with black, and snout occasionally spotted with blackish brown. Blackish brown transrostral line extending back through nostril to narrow blackish brown circumorbital ring whose tail extends to or towards angle of mouth; dark markings broadly edged with creamy white. Bottom of rostral and greater part of first three labials dark greyish brown. Temporal blotch dark greyish brown. Nuchal bar black, dark grey or dark brown, narrowing as it descends side of neck, edged with white or brownish white. Occasionally indication of longitudinal streak on each side of chin; rest of lower surface creamy white.

Geographic variation

The northern population differs from those of the Shark Bay islands and peninsulas mainly in its greater size (SVL 199-476, N 14, mean 393; *vs* 136-439, 15, 326) and more numerous ventrals and subcaudals (sum 255-272, N 9, mean 264.3; *vs* 241-260, 13, 252.0).

Paratypes

North-west Division (W.A.): Vlaming Head (22510-11); 3 km N of Yardie HS (55888); Yardie Creek (51027); Ningaloo (32027-8); Cardabia (16966); Marilla (4751, 5322); Wandagee (14055); Quobba Point (17320-1); Carnarvon (22830); Callagiddy (45650); Bernier I. (11241, 13283); Dirk Hartog I. (42378, 44237, 44546); Tamala (6530, 54991); Monkey Mia (54831); Peron HS (54817-8); Denham (22433) and 25 km S (54587); Eagle Bluff (22432, 55098).

DEMANSIA RETICULATA CUPREICEPS SUBSP. NOV.

Holotype

R34555 in Western Australian Museum, collected by Mr J. Bywater in

September 1969 at Callagiddy, Western Australia, in 25° 02' S, 114° 01' E.

Diagnosis

A moderately large green *Demansia* with reticulate dorsal pattern, coppery tail, and well-developed transrostral and circumorbital markings; distinguishable from *D. r. reticulata* by coppery rather than olive head.

Distribution

West Kimberley from Yampi Sound and Manning Creek south to Derby. Western arid zone from Mundabullangana and Marble Bar south to Wooramel, Karalundi and Cosmo Newbery. Far eastern arid zone from Warburton Range south nearly to the Nullarbor Plain (and adjacent parts of Northern Territory and South Australia).

Description

Snout-vent length (mm): 186-764 (N 49, mean 550.4). Length of tail (% SVL): 23.3-33.5 (N 44, mean 28.9). Ventrals 179-205 (N 45, mean 191.3). Subcaudals 63-91 (N 42, mean 77.2). Ventrals plus subcaudals 250-288 (N 40, mean 269.1).

Head, hind part of body and tail coppery brown, except for occasional specimens with head and nape blackish. Rest of back and sides bright pale green, posterolateral edges of scales black (margin widest at apex). Transrostral line dark brown, margined with yellow. Narrow dark brown circumorbital ring with short grey tail, broadly margined with yellow. Faint longitudinal streak occasionally discernible on each side of chin. Throat yellow; rest of under surface yellowish white, except where black of dorsal reticulation extends briefly on to free edge of ventrals.

Paratypes

Kimberley Division (W.A.): Wotjulum (12359); Manning Creek (32067); Derby (144, 13751).

North-west Division (W.A.): Mundabullangana (15059); Spearhill, Shaw River (30957); Marble Bar (42); Mt Edgar (15057); Woodstock (13059, 55898); north end of Chichester Range (31145); Onslow (8283-4); Wittenoom (47728); Hamersley Iron (41913); Marandoo minesite (52714); 32 km W of Roy Hill (45888); Mundiwindi (45089); North West Cape (14023); Exmouth (31421-2, 34705); Learmonth district (8659, 11491); Marilla (5039); Winning Pool (14164); Manberry (22948); Wandagee (9412-3); Booloogooro (55899); Carnarvon (24018-9) and 16 km E (13309); Callagiddy (37644,

39778, 40676, 40681-2); Wooramel (54599); Yinnietharra (40656-7); Kumarina (22704-5); 32 km N of Beyonde (23941); Karalundi (42651).

Eastern Division (W.A.): Yandil (2227); Warburton Range (15156, 22072); Cosmo Newbery (13850); Maloora Rockhole (15066).

Northern Territory: 2 km E of Docker River Settlement (34303).

South Australia: 37 km NE of Maralinga (36637).

DEMANSIA RETICULATA RETICULATA

Lycodon reticulatus Gray, 1842, The zoological miscellany, p.54. Australia.

Lectotypes

Mr A.F. Stimson of the British Museum (Natural History) kindly sent me two of Gray's syntypes, one of which (1946. 1. 19. 79) I designate holotype. It and the paralectotype (1946. 1. 19. 78) were purchased by the British Museum from G. Krefft in 1838. Both specimens have an olive head.

Diagnosis

A moderately large green *Demansia*, distinguishable from *D. r. cupreiceps* by olive rather than coppery head.

Distribution

West coast and hinterland from Dirk Hartog I. south to Harvey, inland to Yuna, Morawa and Beacon.

Description

Snout-vent length (mm): 219-700 (N 60, mean 545.4). Length of tail (% SVL): 24.2-36.1 (N 58, mean 29.4). Ventrals 172-201 (N 50, mean 187.8). Subcaudals 67-88 (N 55, mean 75.1). Ventrals plus subcaudals 244-279 (N 48, mean 262.7).

Head pale to moderately dark olive green, except for occasional specimens with blackish head and nape. Rest of coloration as in *D. r. cupreiceps*.

Material

North-west Division (W.A.): Dirk Hartog I. (42377, 44238, 45839); 10 km S of Carrarang (54725); 5 km SW of Tamala (37576).

South-west Division (W.A.): Kalbarri (24195, 34141) and 6 km E (33527)

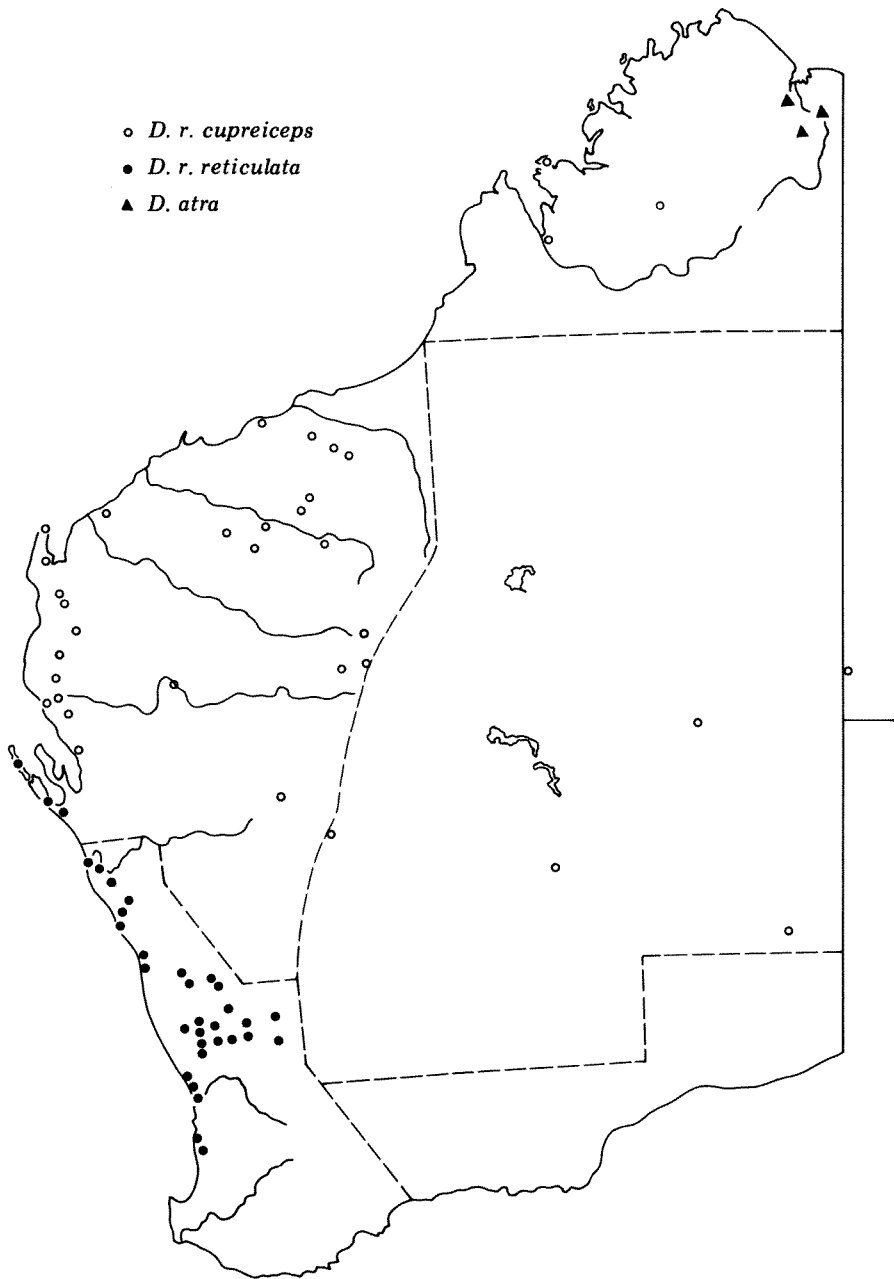


Fig. 3: Map of Western Australia showing location of specimens of *Demansia atra* and two subspecies of *D. reticulata*.

and 23 km ESE (33836) and 5 km S (33931); Binu (25222); Yuna (28269); East Chapman (4524); Geraldton (22863); Bookara (26610); Port Denison (23331); 21 km E of Yandanooka (29577); 18 km W of Morawa (29715); Three Springs (7546-7); Caron (28885); Bunjil (15063, 22990); Coorow (9244); Wubin (13769); Watheroo (2084); 14 km NNE of Badgingarra (26167, 32084); Coomberdale (5704, 9992, 21717); Miling (5733); Burakin (26514); Kulja (26515); Beacon (29403); Bencubbin (31154); Cadoux (31641); Wongan Hills (47343); Piawaning (23332-3); Moora (1602, 37959-60); Mogumber (5203); Yanchep (1960); 16 km N of Wanneroo (26074); Whitfords Beach (21724); Sorrento (24022); Scarborough (6145); Midland Junction (797); Perth (791); Kings Park (579, 593); Hollywood (4479); Nedlands (6671); Melville (6379); Applecross (4599, 4887, 6043); Carlisle (15065); Queens Park (4956); Cannington (7468); Forrestdale (5177); Mandurah (57233); 17 km NW of Harvey (57774).

DEMANSIA ATRA

Diemenia atra Macleay, 1885, Proc. Linn. Soc. N.S.W. 9: 549. Ingham, Qld (J.A. Boyd).

Diagnosis

A large blackish *Demansia*, distinguishable from *D. papuensis melaena* by its black-edged anterior ventrals, unspotted head, dark-sutured temporals, lesser size and fewer ventrals and subcaudals.

Distribution

East Kimberley, about the lower Ord. Extralimital in far north of Northern Territory, northern and eastern Queensland and southern New Guinea.

Description

Snout-vent length (mm): 530-863 (N 8, mean 723.1). Length of tail (% SVL): 24.2-33.0 (N 7, mean 29.7). Ventrals 176-197 (N 8, mean 184.1). Subcaudals 70-88 (N 7, mean 79.1). Ventrals plus subcaudals 257-270 (N 7, mean 263.0).

Head moderately dark coppery brown, not spotted but sometimes blotched posteriorly with dark brown. Back black, becoming blackish brown or dark reddish brown posteriorly. Tail dark reddish brown, becoming paler distally. No transrostral line. Occasionally a trace of circumorbital markings. Lips, chin, throat and subcaudals pinkish or buffy white. Rest of under surface pale grey, dark grey or brownish grey, darkest at sides.

Geographic variation

The above description is based on the Northern Territory-Kimberley population, which is probably separable subspecifically from that of Queensland. The western population has more ventrals and subcaudals, lacks yellow pigment ventrally and seems to be larger.

Material

Kimberley Division (W.A.): Wyndham (13448) and 60 km SSE (25089); Kimberley Research Station, N of Kununurra (22347-8, 29914).

Northern Territory: Milingimbi (13532-3); Yirrkala (13509).

Queensland: 30 km E of Georgetown (55849); Townsville (55615); near Laura (57865).

DEMANSIA PAPUENSIS MELAENA SUBSP. NOV.

Holotype

R47590 in Western Australian Museum, collected by Mr G.F. Gow on 18 July 1974 at Katherine, Northern Territory, in 14° 28' S, 132° 16' E.

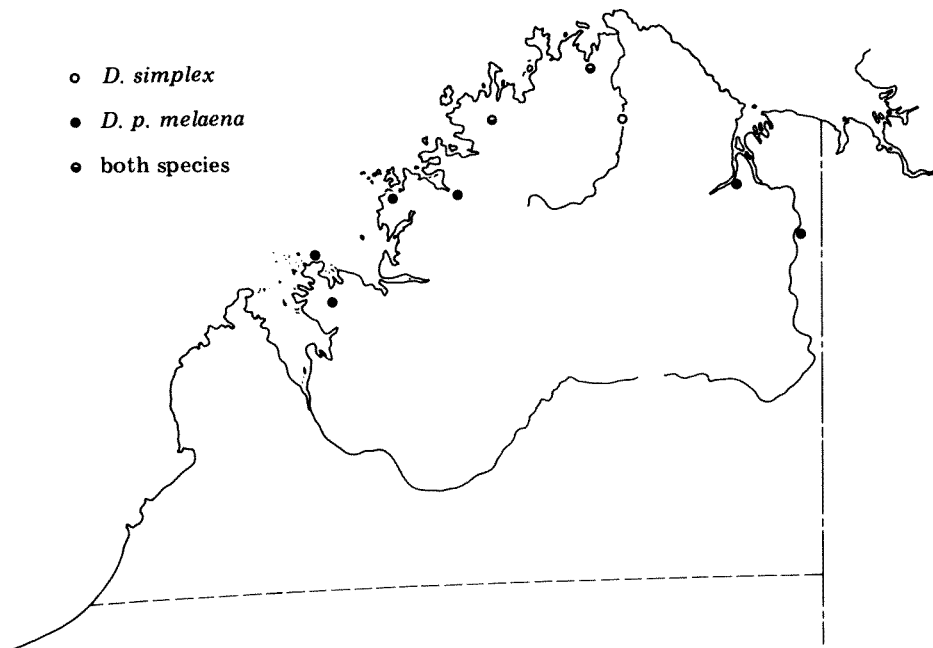


Fig. 4: Map of Kimberley Division showing location of specimens of *Demansia simplex* and *D. papuensis melaena*.

Diagnosis

A very large blackish *Demansia*, distinguishable from *D. p. papuensis* (Macleay) of southern New Guinea by its darker coloration, fewer ventrals and lesser size, and from *D. atra* by its greater size, more numerous ventrals and subcaudals, head paler and spotted, and anterior ventrals and temporals not dark-edged.

Distribution

North Kimberley, south to the Yampi Peninsula and Lake Argyle; also Koolan I. Extralimital in far north of Northern Territory.

Description

Snout-vent length (mm): 501-1143 (N 19, mean 894.7). Length of tail (% SVL): 25.8-32.6 (N 17, mean 28.6). Ventrals 192-220 (N 19, mean 208.0). Subcaudals 78-105 (N 18, mean 87.9). Ventrals plus subcaudals 281-322 (N 17, mean 295.7).

Head pale to moderately dark coppery brown, dotted or spotted with dark brown or blackish brown. Back black, blackish grey or blackish brown, becoming paler on hind back and tail. No transrostral or circumorbital markings. Lips, chin, throat and under tail white. Rest of under surface grey, except occasionally for a ragged median strip of greyish white.

Paratypes

Kimberley Division (W.A.): Kalumburu (13286-8, 22425, 28073); Mitchell Plateau (53714); Prince Regent River Reserve (46834); Kuri Bay (22923); Koolan I. (47684); Kimbolton Spring (51202); Wyndham (13648); Lake Argyle (55865-6).

Northern Territory: Cape Don (26673); Katherine (16509, 23893-4, 26347).

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