

## THE GENUS *RAMPHOTYPHLOPS* (SERPENTES: TYPHLOPIDAE) IN WESTERN AUSTRALIA

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### ABSTRACT

The 18 species and subspecies of blind-snakes inhabiting Western Australia are described and keyed out. They are *R. australis* (Gray), *R. bituberculatus* (Peters), *R. diversus ammodytes* (Montague), *R. diversus diversus* (Waite), *R. endoterus* (Waite), *R. grypus* (Waite), *R. guentheri* (Peters), *R. hamatus* sp. nov., *R. kimberleyensis* sp. nov., *R. leptosoma* Robb, *R. ligatus* (Peters), *R. margaretae* sp. nov., *R. micromma* sp. nov., *R. pinguis* (Waite), *R. troglodytes* sp. nov., *R. unguirostris* (Peters), *R. waitii* (Boulenger) and *R. yampiensis* sp. nov.

### INTRODUCTION

In 1918 E.R. Waite revised the blind-snakes of Australia. His material was scanty and often poorly or wrongly localised. Nevertheless his achievement was remarkable, and he set new standards for systematic herpetology in Australia.

In his revision of the blind-snakes of the New Guinea region, McDowell (1974) placed all the species in species-groups, which were based on anatomic as well as scale characters. Because little or nothing is known of the anatomy of Australian blind-snakes, I have not attempted to locate the Western Australian species in species-groups but have dealt with them in alphabetic sequence. However, most of our blind-snakes can be grouped into clusters of superficially similar species. For example *R. unguirostris*, *R. australis*, *R. hamatus* and *R. endoterus* make up a close-knit group. *R. bituberculatus* and *R. margaretae* constitute a vicariant pair. *R. waitii*, *R. grypus* and *R. leptosoma* are much alike and largely replace each other geographically. *R. diversus* and *R. yampiensis* (and *R. tovelli* of the Northern Territory) form another group, in which it may prove possible to include *R. braminus*. *R. kimberleyensis* is perhaps nearest to a group of extra-limital species including *R. polygrammicus*, *R. torresianus* and *R. nigrescens*. The remaining western species, *R. guentheri*, *R. ligatus*, *R. micromma*, *R. pinguis* and *R. troglodytes*, seem to have no close allies, at least in Western Australia.

The present revision is based on the collections (R series) of the Western Australian Museum (registered numbers cited without prefix) and selected specimens in the National Museum of Victoria (specimens prefixed with NMV), South Australian Museum (SAM), British Museum (Natural History) (BMNH), Rijksmuseum van Natuurlijke Historie (RMNH) and Museum für

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Naturkunde der Humboldt-Universität, Berlin (ZMB). Ventrals are construed as all the scales between the mental and the anals. Subcaudal counts do not include the terminal spine-bearing scale. The prefrontal and frontal are respectively the first and second median dorsal scales behind the rostral.

Five blind-snakes, viz. *Ramphotyphlops affinis* (Boulenger), *R. broomi* (Boulenger), *R. polygrammicus* (Schlegel), *R. wiedii* (Peters) and *Typhlops labialis* Waite (= *T. diardi* Schlegel, fide McDowell 1974) have been erroneously reported from Western Australia. A description of *Ramphotyphlops braminus* (Daudin) is given in the Appendix; this vagile snake may well become established in Western Australia, where it could easily be mistaken for *R. diversus*.

I am grateful to Mr A.J. Coventry (NMV), Dr T.D. Schwaner (SAM), Mr A.F. Stimson (BMNH), Dr M.S. Hoogmoed (RMNH) and Dr G. Peters (ZMB) for the loan of specimens in their care.

## SYSTEMATICS

### Genus *Ramphotyphlops*

*Typhlina* Wagler, 1830, *Natürliches System der Amphibien* . . . p. 196. Not available for this genus (Stimson *et al.*, 1977: 204).

*Pseudotyphlops* Fitzinger, 1843, *Systema reptilium*, p. 24. Type-species (by original designation): *Typhlops polygrammicus* Schlegel. Not *Pseudo-Typhlops* Schlegel, 1839.

*Ramphotyphlops* Fitzinger, *ibid.* Type-species (by original designation): *Typhlops multilineatus* Schlegel.

*Pilidion* Duméril and Bibron, 1844, *Erpétologie générale* 6: 257. Type-species (by original designation): *P. lineatum* Duméril and Bibron [= *Typhlops lineatus* Boie].

*Typhlinalis* Gray, 1845, *Catalogue of the specimens of lizards in the collection of the British Museum*, p. 134. Type-species (by monotypy): *T. lineatum* (Boie).

### Diagnosis

Blind-snakes of the family Typhlopidae (as restricted by McDowell 1974), differing from *Typhlops* only in characters of the male genitalia (Robb 1966).

### Distribution

From Malaya and the Philippines south-east to Australia and the Loyalty Islands (excluding the range of the widespread parthenogenetic species *braminus*, which does not certainly belong to *Ramphotyphlops*).

### Key to Western Species

- 1 Midbody scale rows 24 . . . . . 2
- Midbody scale rows fewer . . . . . 3
- 2 Snout rounded in profile . . . . . *ligatus*
- Snout tipped with a transverse cutting edge . . . . . *unguirostris*

3	Midbody scale rows 22 .....	4
	Midbody scale rows fewer .....	8
4	Snout rounded in profile .....	5
	Snout tipped with a transverse cutting edge .....	7
5	Rostral (from above) a little longer than wide; nostrils inferior; ventrals fewer than 400; inhabit- ing south of W.A. ....	<i>australis</i>
	Rostral (from above) much longer than wide; nostrils lateral; ventrals more than 400; inhabit- ing far north of W.A. ....	6
6	Nasal cleft extending upwards and slightly back- wards to about midway between nostril and top of nasal scale; nostril a little nearer to rostral than preocular; ventrals fewer than 550 .....	<i>kimberleyensis</i>
	Nasal cleft extending upwards and forwards from nostril to rostral; nostril much nearer to rostral than preocular; ventrals more than 600 .....	<i>troglydites</i>
7	Rostral (from above) a little longer than wide; nasal cleft usually proceeding from second labial (rarely from preocular); ventrals fewer than 400 .....	<i>hamatus</i>
	Rostral (from above) not longer than wide; nasal cleft proceeding from preocular; ventrals more than 400 .....	<i>endoterus</i>
8	Midbody scale rows 20 .....	9
	Midbody scale rows fewer .....	12
9	Snout tipped with a transverse cutting edge .....	<i>waitii</i>
	Snout without a cutting edge .....	10
10	Nasal cleft proceeding from second labial; snout obtusely angular in profile .....	11
	Nasal cleft proceeding from preocular; snout rounded in profile .....	<i>diversus</i>
11	Snout (from above) rounded in outline; body stout; ventrals fewer than 350 .....	<i>pinguis</i>
	Snout (from above) trilobed in outline; body slender; ventrals more than 400 .....	<i>bituberculatus</i>
12	Midbody scale rows 18 .....	13
	Midbody scale rows 16 .....	<i>leptosoma</i> (part)
13	Snout tipped with a transverse cutting edge .....	14
	Snout not tipped with a cutting edge .....	15

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- 14 Tail black . . . . . *grypus*  
 Tail not black . . . . . *leptosoma* (part)
- 15 Tail black . . . . . *guentheri*  
 Tail not black . . . . . 16
- 16 Snout weakly trilobed from above and angular  
 in profile . . . . . *margaretae*  
 Snout rounded from above and in profile . . . . . 17
- 17 Nasal cleft proceeding from preocular; eye larger  
 than nostril . . . . . *yampiensis*  
 Nasal cleft proceeding from second labial; eye not  
 larger than nostril . . . . . *micromma*

*Ramphotyphlops australis* (Gray, 1845)

Figs 1 and 2

*Anilius australis* Gray, 1845, Catalogue of the specimens of lizards in the collection of the British Museum, p. 135. Western Australia.

*Onychocephalus verticalis* Smith, 1846, Illustrations of the zoology of South Africa, pl. 54. 'Interior of South Africa'. (Synonymy *vide* D.G. Broadley, *in litt.*).

*Typhlops preissi* Jan, 1860, Iconographie générale des ophidiens 1 (1): 1; Pl. 5, Fig. 2. Australia.

**Diagnosis**

A dark, moderately large, stout blind-snake with snout rounded in profile, 22 midbody scale rows, nasal cleft usually proceeding from second labial and extending up to about midway between nostril and rostral, the top of cleft curving forwards.

**Description**

Total length (mm): 86-417 (N 312, mean 196.6). Length of tail (% of total length): 1.6-5.2 (N 79, mean 3.4).

Rostral (from above) elliptic, a little longer than wide, about two-thirds as wide as head and extending back to well short of level of eyes. Nasals narrowly separated behind rostral. Frontal smaller than prefrontal. Snout usually rounded in profile (very slightly angular in a few specimens). Nostrils inferior, slightly to much nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 248), junction of first and second (14), junction of second and preocular (5) or preocular (5), and extending vertically from nostril and terminating about midway between nostril and rostral after curving forwards for a short distance.

Midbody scale rows 22 (N 282). Ventrals 278-357 (N 50, mean 311.5). Subcaudals 10-18 (N 50, mean 14.1).

Dorsal and dorsolateral surfaces purplish-black in adults (purplish-pink in juveniles), lower surfaces whitish; boundary between dark and pale coloration jagged, owing to lateral scales being either wholly dark or wholly pale.

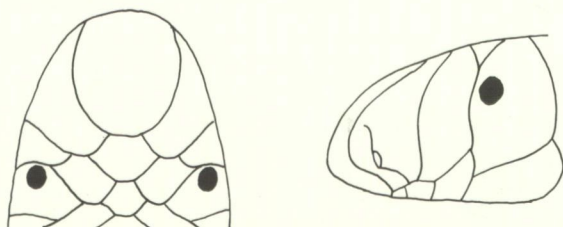


Fig. 1: Head of *Ramphotyphlops australis*.



Fig. 2: A *Ramphotyphlops australis* from Wongan Hills, W.A., photographed by R.E. Johnstone.

#### Distribution

Southern Western Australia north generally to Irwin, Badgingarra, Wialki, the Eastern Goldfields and Madura, and south to Augusta, Bridgetown,

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Narrikup and Esperance. An apparently isolated population considerably further north in Edel Land (Shark Bay). See Fig. 3.

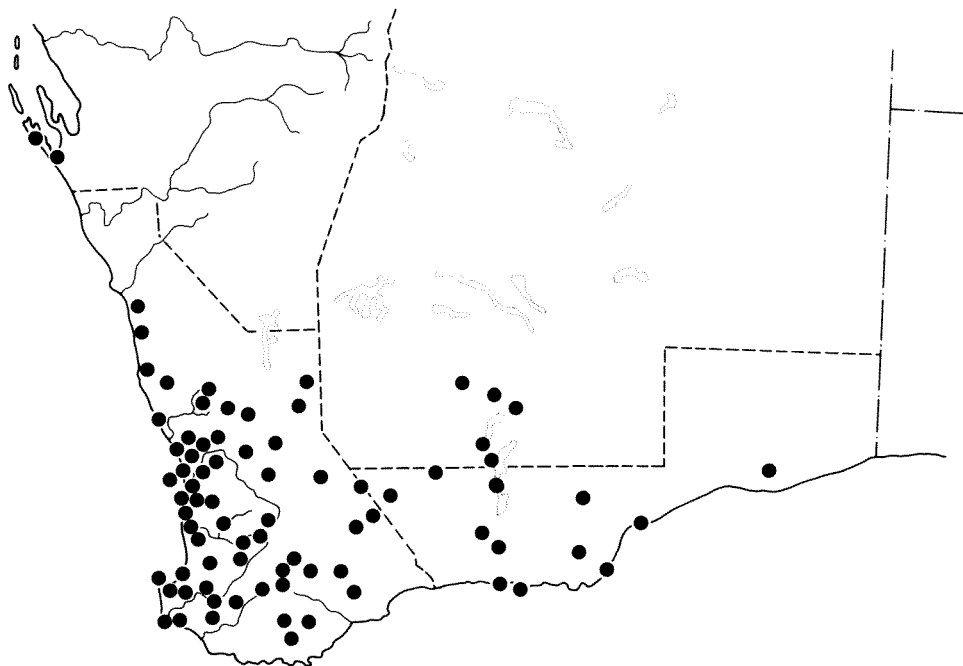


Fig. 3: Map of southern Western Australia showing location of specimens of *Ramphotyphlops australis*.

### Geographic Variation

The specimens from Edel Land are notable for their low ventral counts (278, 283).

### Material

*North-West Division (W.A.):* False Entrance Well (66216); 1 km S of Tamala (64351).

*South-West Division (W.A.):* Irwin House (29°13'S, 115°06'E) (5688); Arrowsmith (21856); 5 km W of Padbury (49111); 5 km E of Mt Peron (49164); 9 km NE of Jurien Bay (46596-8) and 16 km SE (46589); Badgingarra (34274); Badgingarra National Park (68932-9); Wialki (6819); Bindi Bindi (31478); Gabalong (21599); Mukinbudin (4669); 29 km N of New Norcia (31529) and 11 km N (26056-7); Wongan Hills (50989); Lancelin (15114) and 6 km N (61772-3) and 3 km S (49972-3); Ejanding (2374); Culham (3872, 15115); Gingin (2257, 8460); proposed reserve south of Gingin (59222); 17 km N of Yanchepe (59219); 17 km NW of Kellerberrin (52373); Muchea (456); Neerabup (31557); Bullsbrook (34344); Twin Swamps Reserve (59505-6); Meckering (212); Wanneroo (32031); 3 km NE of Upper Swan (69876); Wundowie (26409) and 3 km W (33433); Woorooloo (21337); Gidgiegannup (29053); Herne Hill (861); Mussel Pool (51565); Sawyers Valley (3072); Stoneville (40313, 46243); Mundaring (507); Mahogany

Creek (4886); Glen Forrest (52135, 61616); Darlington (16497, 29306, 47844); West Midland (36122); Guildford (1252, 22859); Beechboro (620); Morley (54222); Hamersley (51297); Doubleview (21877); Wembley Downs (36313); City Beach (40963); Reabold Hill (28395); Wembley (29785); Rottnest Island (3758, 47778); Quairading (34118); 13 km SSE of Chidlow (57258; NMV R7181); Mundaring Weir (49957-8, 60475); 10 km E of Kalamunda (14541-2, 22774-7); Kalamunda (770, 13230, 31997, 31997a, 39699, 48178, 56100); Gooseberry Hill (28346, 28419, 30933, 45620-1); High Wycombe (37976); Maylands (1524, 3405, 4162); Perth (792, 1369, 2317, 2605, 5249, 8973, 69477-8); Swan River (BMNH 1946.1.10.61 holotype); Shenton Park (5912); Hollywood (3844); Nedlands (4404-5); Mt Claremont (39985); South Perth (3335, 10136); Como (2775, 26754); Forrestfield (66277); Bickley (3829); Lesmurdie (40971-2, 56098); Kenwick (13426, 20565); Beckenham (47750); Cannington (10068-9); Wilson (42970); Riverton (13557, 13824, 52136); Karawara (52088); Attadale (40967, 40974); Bicton (14243); Coolbellup (39071); Gosnells (47783); Roleystone (5895); Karragullen (9425); Narembeen (1161); North Jandakot (410a-g); Thompson Reserve (36561); Jandakot (62717); 24 km E of Armadale (57043); Naval Base (50021); Rockingham (47360); Karnup, Peel Estate (6959); Mundijong (25615); Jarrahdale (34405, 68242); Mt Randall (40208-9); 3 km SE of Mt Vincent (68122, 68131-4); Huntly (4397-9, 4631); Mandurah (49852-3); South Mandurah (26721); Miami, 8 km S of Mandurah (34545-6); Yundurup (36997, 37467); 8 km NE of Bending (52603); 40 km NE of Hyden (31669); Lake Varley (29576); 16 km WSW of Holt Rock (58741-7); Dragon Rocks (43727, 43757-62); 25 km E of Yornaning (50181-3, 51312, 51319-26, 51373, 51383, 56184); Coolup (31676-7); Boddington (4938); Waroona (3863-4); Yarloop (2601); Williams (4706, 34329); Narrogin (12634, 25995) and 34 km ESE (56002); Wedin (5343); Darkan (1543, 13131); Collie (13481, 15124) and 8 km SW (15116); Dongolocking Reserve (49640a-b); 10 km E of Woodanilling (23354-6); Nyabing (56874); 27 km E of Pingrup (39836, 39845); mouth of Capel River (26558); Capel (46252); Cape Naturaliste (47788); Busselton (26060-1, 26614, 26690); 2 km NE of Yallingup (68243); Boscabel (33°40'S, 117°03'E) (5345); Katanning (6916); Kojonup (1280); Balingup (5772); Greenbushes (10229); Jarrahwood (39125); 13 km N Margaret River (64890); Nannup (26631, 47745, 52236, 56764-6); Bridgetown (7022, 31956); Jerramungup (15125); Tambellup (2427, 4289, 4986, 6777); Manjimup (37716); Kudardup (40734-5); Cranbrook (6562); Tenterden (1356); Stirling Range National Park (40117, 40130); Unicup Lake (40968); Perup (46609); between upper reaches of Perup and Tone Rivers (42577); near Mammoth Cave (47757-8); Scott River (36043, 49688); Augusta (11284, 21611); Mt Barker (36567); Narrikup (11583).

*Eastern Division (W.A.):* Grants Patch (30°27'S, 121°07'E) (7064); Bulong (3329, 3747, 34320); 'the Goldfields' (27); 67 km E of Kalgoorlie (43591); Widgiemooltha (318); 48 km N of Norseman (47256).

*Eucla Division (W.A.):* Madura (31171); McDermid Rock (65362); Norseman (9398; NMV R7066); Lake Cronin (65293); 17 km NE of Charlina Rock (58040); W of Point Culver (44968); 16 km W of Salmon Gums (33380); East Grass Patch (4968); Pine Hill (36230); Israelite Bay (66873-4, 66883); Mt LeGrand (42480); Esperance (27269, 47744).

### *Ramphotyphlops bituberculatus* (Peters, 1863)

#### Fig. 4

*Onychocephalus bituberculatus* Peters, 1863, Monatsb. K. Preuss. Akad. Wiss. Berlin 1863: 233 and (for illustration) 1867: 708. Buchsfeld near Adelaide, South Australia.

#### Diagnosis

A moderately dark, moderately small, slender, long-snouted blind-snake with snout strongly trilobed (as seen from above) and slightly angular in

profile, 20 midbody scale rows and nasal cleft proceeding from second labial.

### Description

Total length (mm): 111-349 (N 31, mean 229.7). Tail (% total length): 1.5-3.3 (N 17, mean 2.3).

Rostral (from above) elliptic, very much longer than wide, almost two-thirds as wide as head and extending back nearly to level of eyes (occasionally to front edge of eyes). Nasals narrowly separated behind rostral. Frontal much smaller than prefrontal. Nostrils inferior, markedly swollen, much nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 24) to nostril, thence obliquely upwards and forwards to midway between nostril and rostral or a little further.

Midbody scale rows 20 (N 30). Ventrals 414-485 (N 14, mean 447.7). Subcaudals 11-18 (N 10, mean 14.1).

Dorsal and upper lateral surfaces dark purplish-brown, gradually merging with whitish lower surfaces.

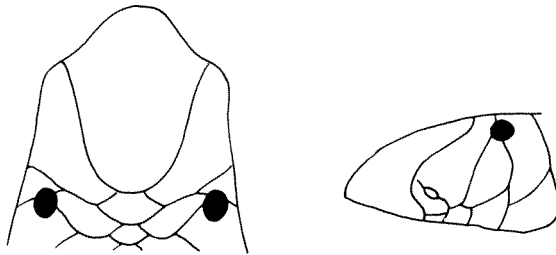


Fig. 4: Head of *Ramphotyphlops bituberculatus*.

### Distribution

Southern interior of Western Australia, north to latitude 28°30'S, west to the north-eastern Wheat Belt (Mukinbudin), and south to Norseman and Cocklebiddy (Fig. 5). Also eastern Australia.

### Material

*South-West Division (W.A.):* Mukinbudin (5078, 10442, 32038); 'Parkerville' (5952); 'Karragullen' (6002); 'Narrogin' (509); 'Highbury' (7008).

*Eastern Division (W.A.):* Yuinmery (69111); Menzies (4811); Broad Arrow (5317); Kurrawang (4721); 'the Goldfields' (26); Kanandah (39779-80); Coolgardie (NMV D4626); Woolgangie (21575); 29 km S of Yellowdine (37932); Buningonia Spring (65555).

*Eucla Division (W.A.):* 80 km N of Rawlinna (41230); Forrest (16914) and 5 km S (36471); Cocklebiddy (37048); Frazer Range (41630); Norseman (8219).

*South Australia:* Fowlers Bay (NMV D4687-8); Buchsfeld (syntypes ZMB 4723, 4724a-b).

*Victoria:* Cohuna (9862).



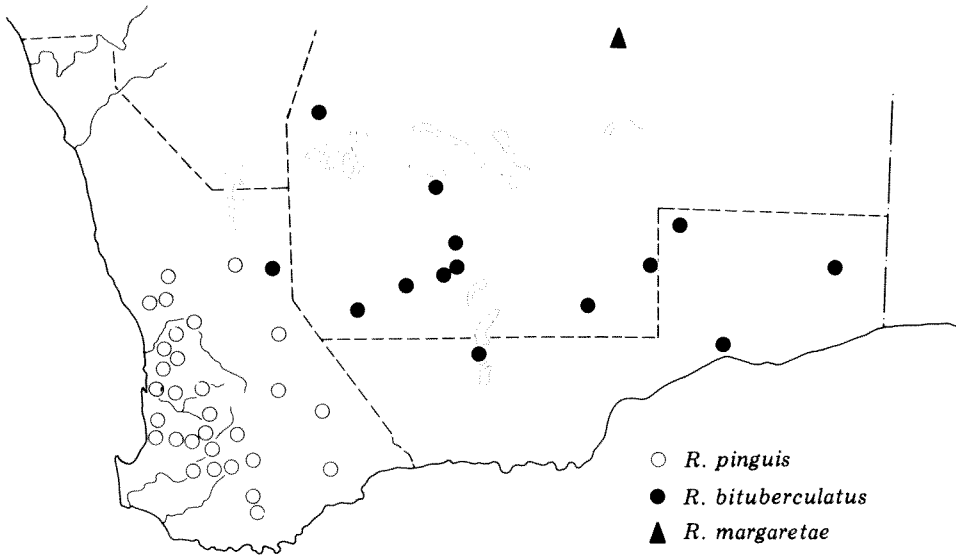


Fig. 5: Map of southern Western Australia showing location of specimens of *Ramphotyphlops bituberculatus*, *R. margaretae* and *R. pinguis*.

*Ramphotyphlops diversus ammodytes* (Montague, 1914)

Figs 6 and 7

*Typhlops ammodytes* Montague, 1914, Proc. zool. Soc. Lond. 1914: 642. Hermite Island, Western Australia.

**Diagnosis**

A small, pale, moderately slender blind-snake with rounded snout, 20 mid-body scale rows and nasal cleft proceeding from preocular and usually dividing nasal scale. Differing from *R. d. diversus* mainly by narrower rostral (usually less than 0.4 times as wide as head, v. usually more than 0.4) and nasal cleft extending higher on to top of head.

**Description**

Total length (mm): 97-252 (N 14, mean 173.6). Length of tail (% total length): 1.6-5.1 (N 14, mean 2.8).

Rostral (from above) slightly to moderately constricted anteriorly so that sides are concave, about twice as long as wide, and extending back nearly to level of eyes. Nasals narrowly separated (N 11) or in point contact (2) behind rostral. Frontal smaller than prefrontal. Snout rounded in profile. Nostrils lateral or slightly superior, usually a little nearer to preocular than rostral. Nasal cleft proceeding from preocular (N 14) to nostril, thence upwards and slightly forwards to rostral or almost so.

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Midbody scale rows 20 (N 14). Ventrals 387-416 (N 5, mean 401.2).  
Subcaudals 10-16 (N 8, mean 13.4).

Dorsal surfaces pinkish-purple, gradually becoming paler ventrally.

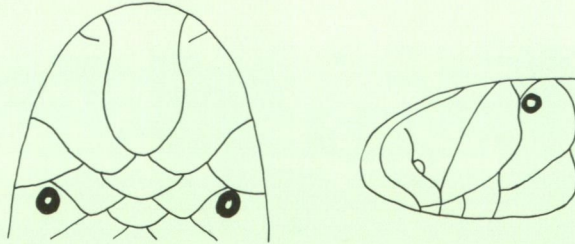


Fig. 6: Head of *Ramphotyphlops diversus ammodytes*.

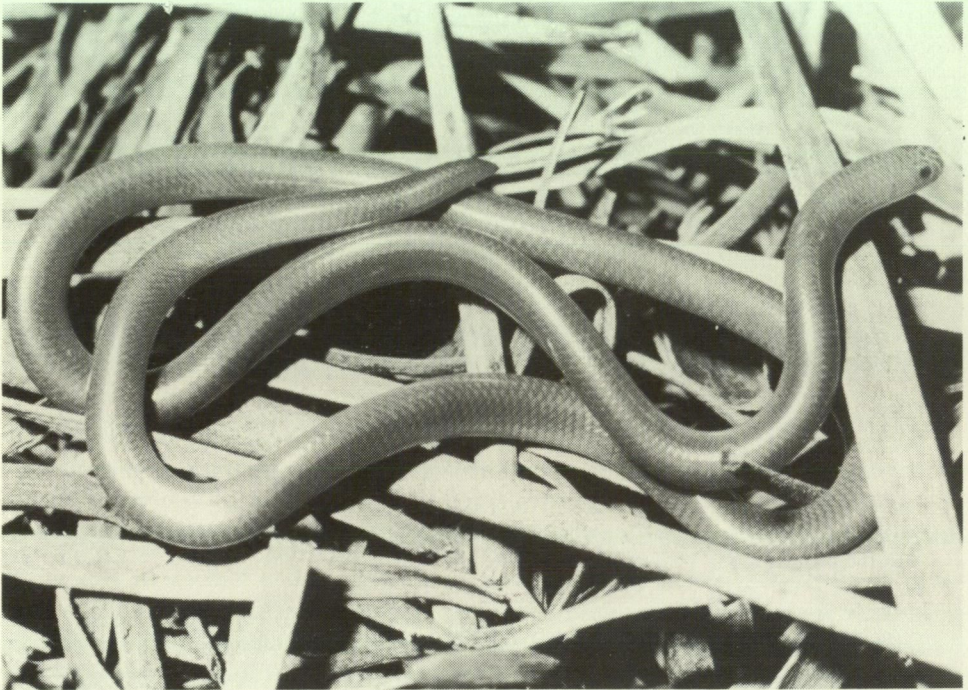


Fig. 7: A *Ramphotyphlops diversus ammodytes* from Yardie Creek, W.A., photographed by G. Harold.

**Distribution**

Pilbara region of Western Australia (including the Montebello and other islands off north-west coast), from the De Grey River south to the North West Cape peninsula and the Hamersley Range (Fig. 8).

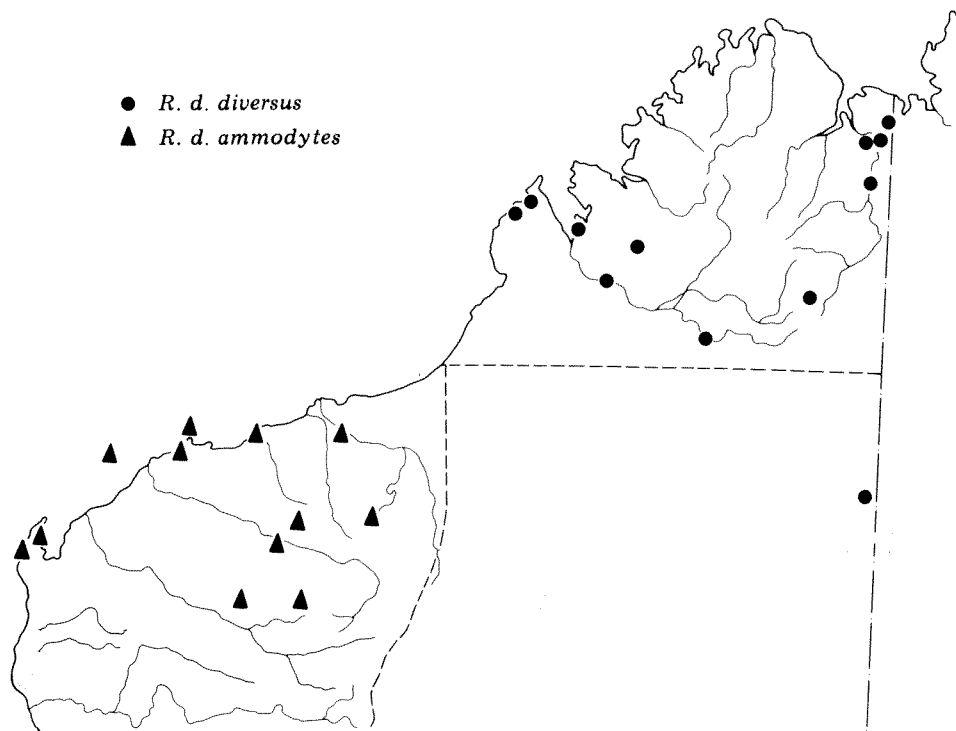


Fig. 8: Map of northern Western Australia showing location of specimens of *Ramphotyphlops d. diversus* and *R. d. ammodytes*.

**Material**

*North-West Division (W.A.):* Legendre I. (37327-8); Mulyie (62370); Mundabullangana (15117); Karratha (60317); Barrow I. (28039); Nullagine (29499); Cockeraga River (37065); 27 km S of Exmouth (61472); 2-4 km N of mouth of Yardie Creek (61120, 61493); Hancock Gorge, Wittenoom (39740); 31 km SE of Mt Meharry (67903); Paraburdoo (67336).

***Ramphotyphlops diversus diversus* (Waite, 1894)**

**Fig. 9**

*Typhlops diversus* Waite, 1894, Proc. Linn. Soc. N.S.W. (2) 9: 10. 'Mowen' [= Morven], Queensland.

**Diagnosis**

A small, pale, moderately slender blind-snake with rounded snout, 20 midbody scale rows and nasal cleft proceeding from the preocular and usually dividing nasal. Distinguishable from *R. towelli* (Loveridge) from far

north of Northern Territory by shorter and wider rostral and more numerous ventrals (more than 380 v. fewer than 300).

### Description

Total length (mm): 97-352 (N 22, mean 205.9). Length of tail (% total length): 1.4-3.5 (N 22, mean 2.2).

Rostral (from above) usually elliptic, occasionally constricted anteriorly so that sides are slightly concave, about one and one-half times as long as wide, about half as wide as head and not extending back to level of eyes. Nasals narrowly separated behind rostral. Frontal much smaller than prefrontal. Snout rounded in profile. Nostrils lateral or slightly inferior, a little nearer to rostral than preocular. Nasal cleft proceeding from preocular (N 21) to nostril, thence curving forwards to rostral or nearly so.

Midbody scale rows 20 (N 22). Ventrals 389-457 (N 10, mean 419.0). Subcaudals 8-18 (N 15, mean 13.5).

Dorsal surfaces purplish brown, becoming darker on head and gradually paler ventrally.



Fig. 9: Head of *Ramphotyphlops d. diversus*.

### Distribution

East and south Kimberley and Tanami Desert, northern Western Australia (Fig. 8). Also Northern Territory and Queensland.

### Material

*Kimberley Division (W.A.):* Point Springs, Weaber Range (28485); Kimberley Research Station (15 km N of Kununurra) (12111, 22353, 22356); Ivanhoe (10305); Lake Argyle (61350-1); Lombadina (46419); Beagle Bay (46482); Derby (41269, 60606); 7 km W of Mt North (17°29'S, 125°45'E) (70680); Liveringa (10363); Halls Creek (26636, 29575); Edgar Range in 18°21'S, 122°53'E (54027); Christmas Creek (63244).

*Eastern Division (W.A.):* Labbi-labbi Rock-hole (21°34'S, 128°49'E) (NMV DT-D1324).

*Northern Territory:* Timber Creek (24862); 6 km S of Coolibah (23141); Peko (12 km E of Tennant Creek) (21495-7).

*Ramphotyphlops endoterus* (Waite, 1918)

Fig. 10

*Typhlops endoterus* Waite, 1918, Rec. S. Aust. Mus. 1: 32. Hermannsburg, Northern Territory.

*Typhlops leonhardii* Sternfeld, 1919, Senckenbergiana 1: 77. Hermannsburg, Northern Territory.

**Diagnosis**

A dark, medium-sized, moderately slender blind-snake with snout angular in profile, 22 midbody scale rows and nasal cleft proceeding from preocular. Most like *R. hamatus* but with wider rostral and more numerous ventrals (more than 400 v. fewer than 400).

**Description**

Total length (mm): 109-376 (N 10, mean 227.7). Length of tail (% total length): 1.5-2.9 (N 10, mean 2.1).

Rostral (from above) as wide as long or a little wider, three-quarters as wide as head and extending back to well short of level of eyes. Nasals narrowly separated behind rostral. Frontal smaller than prefrontal. Snout angular in profile, with a weak transverse cutting edge. Nostrils inferior, slightly swollen and much nearer to rostral than preocular. Nasal cleft proceeding from preocular (N 10) to nostril, thence forwards and slightly upwards or slightly downwards to rostral or for various distances towards it; cleft not crossing slight ridge above nostril and thus not visible from above.

Midbody scale rows 22 (N 10). Ventrals 406-438 (N 7, mean 419.4). Subcaudals 9-16 (N 9, mean 12.7).

Snout pale; rest of dorsal and upper lateral surfaces dark purplish-brown, junction between upper surfaces and pale lower surfaces jagged (as in *R. australis* and *R. hamatus*).

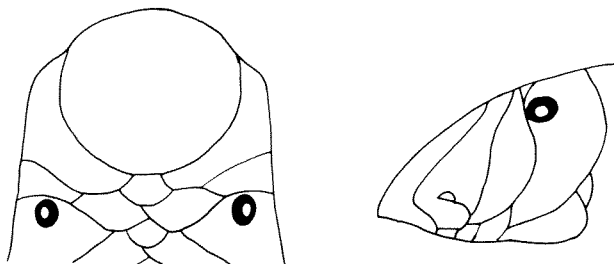


Fig. 10: Head of *Ramphotyphlops endoterus*.

**Distribution**

Arid eastern interior of Western Australia, west to Cosmo Newbery (Fig. 17). Also Northern Territory.

**Material**

*Eastern Division (W.A.):* between Wells 39 and 51 (SAM R1769); Warburton Range (15147, 17782, 22026, 22096-7, 22226); Skipper Knob (116 km S of Warburton Range) (22118); Cosmo Newbery (13855a-b).

***Ramphotyphlops grypus* (Waite, 1918)****Figs 11 and 12**

*Typhlops grypus* Waite, 1918, Rec. S. Aust. Mus. 1: 17.

*Typhlops nigroterminatus* Parker, 1931, Ann. Mag. nat. Hist. (10) 8: 604. Roebuck Bay, Western Australia.

**Diagnosis**

A moderately large, very slender, black-tailed blind-snake with snout beaked in profile, 18 midbody scale rows and nasal cleft usually proceeding from second labial.

**Description**

Total length (mm): 124-415 (N 53, mean 271.2). Length of tail (% total length): 1.1-4.4 (N 49, mean 2.4).

Rostral (from above) much longer than wide, about three-quarters as wide as head and extending back to level of eyes or nearly so. Nasals narrowly separated behind rostral. Frontal smaller than prefrontal. Snout angular from above, weakly or strongly beaked in profile. Nostrils inferior, very slightly or not swollen and much nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 36), preocular (4), junction between preocular and second labial (1) or first labial (2) to nostril, where it occasionally (N 7) terminates, but mostly it proceeds for varying distances obliquely upwards and forwards towards rostral (N 16) or reaches it (N 16).

Midbody scale rows 18 (N 51). Ventrals 525-677 (N 9, mean 614.2). Subcaudals 13-36 (N 20, mean 22.6).

Snout white; rest of head and neck blackish. Tail (sometimes wholly, but usually only distal 30-90%) blackish. Rest of dorsal and lateral surfaces pinkish-brown to moderately dark brown, gradually merging with greyish-white ventral surfaces.



Fig. 11: Head of *Ramphotyphlops grypus*.



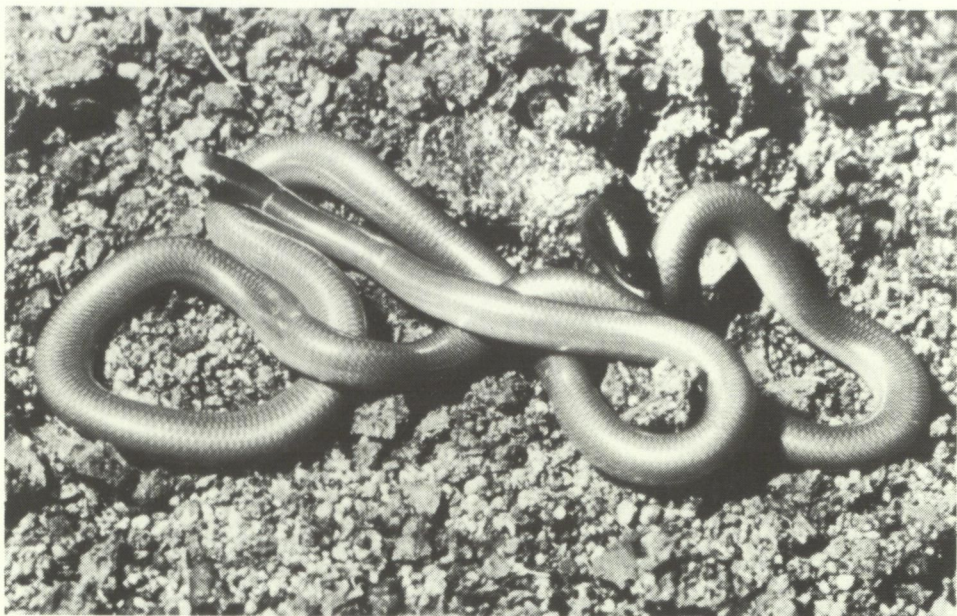


Fig. 12: A *Ramphotyphlops grypus* from Mt Herbert, W.A., photographed by G. Harold.

### Distribution

Arid zone of Western Australia, from far south of Kimberley Division south to latitude 26°S (Fig. 21).

### Remarks

The holotype of *grypus* has not been used in drawing up the above description. In view of its extremely high ventral count (790), it possibly comes from eastern Australia and represents a different subspecies.

### Material

*Kimberley Division* (W.A.): Derby (145, 46660); Broome (29156; NMV R7187); near Wolf Creek meteorite crater (64035, 64054).

*North-West Division* (W.A.): Wallal (6582); DeGrey (5103-4); Point Samson (45631); Dampier (47781, 54385); Muccan (6582, 10981); Whim Creek (51041); Marble Bar (22887; paratype NMV D12358, formerly R7200); Mt Edgar (15121); 12 km SW of Woodstock (31227, 73520); Cane River (56105); North West Cape (28038); Vlaming Head (22506); Exmouth (31413, 31430, 50283); 2 km N of Cape Range No. 2 Well (25101); Learmonth (36677); Tambrey (2250, 6476, 7195, 8102); Wittenoom Gorge (13432); Marandoo (58753); Tom Price (44820); 27 km SE of Mt Meharry (66335) and 37 km SE (67904); Newman (28931); Middalya (NMV D4812); Callagiddy (36324); Karalundi (42662-71); Ejah Camp, Mileura (15122, 47631).

*Eastern Division* (W.A.): 34 km S of Boundary Hill (63262); Anketell Ridge in 20°22'S, 122°03'E (69523); Well 40 (64185); Well 39 (4073); Paterson Range (47784); Durba Hills (40368).

*No locality*: holotype (NMV D12351, formerly R7102).



*Ramphotyphlops guentheri* (Peters, 1865)

Figs 13 and 14

*Typhlops (Onychocephalus) Güntheri* Peters, 1865, Monatsb. k. Preuss. Akad. Wiss. Berlin 1865: 259. Northern Australia.

*Typhlops nigricauda* Boulenger, 1895, Proc. zool. Soc. Lond. 1895: 867. Daly River, Northern Territory.

**Diagnosis**

A small, very slender, black-tailed blind-snake with 18 midbody scale rows and nasal cleft proceeding from second labial. Distinguishable from *R. grypus* by snout rounded (rather than beaked) in profile.

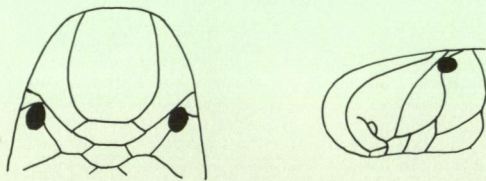


Fig. 13: Head of *Ramphotyphlops guentheri*.

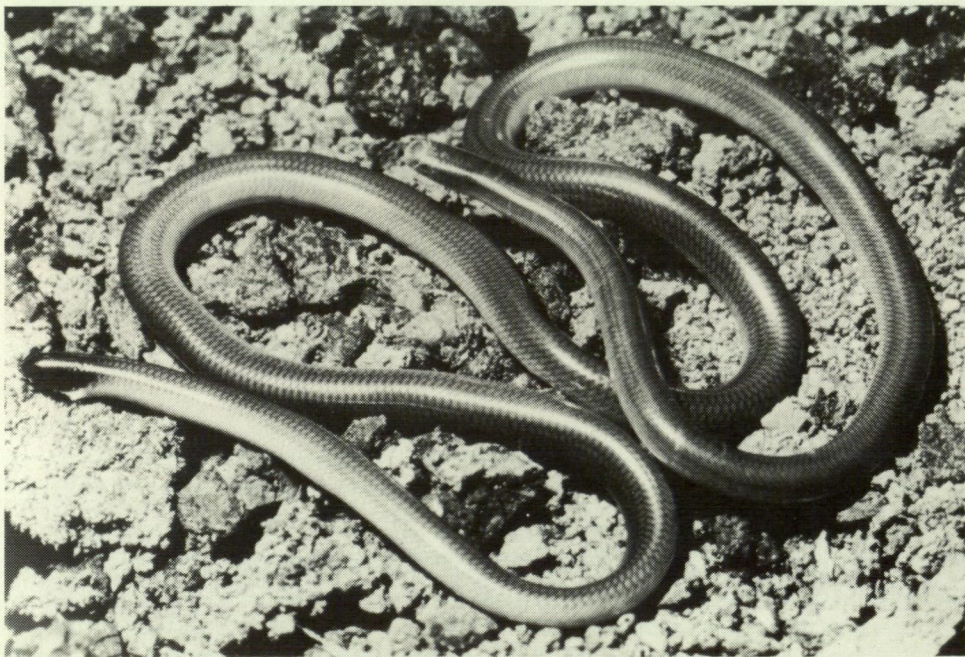


Fig. 14: A *Ramphotyphlops guentheri* from 13 km NW of Lissadell, W.A., photographed by G. Harold.



### Description

Total length (mm): 120-288 (N 10, mean 210.8). Length of tail (% total length): 1.1-2.7 (N 9, mean 1.6).

Rostral (from above) truncate oval, a little longer than wide, a little more than half as wide as head and extending back to level of eyes or almost so. Nasals widely separated behind rostral. Frontal much smaller than pre-frontal. Snout short, rounded in profile. Nostrils inferior, much nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 8) to nostril, thence curving upwards and forwards for one-quarter to three-quarters of distance between nostril and rostral.

Midbody scale rows 18 (N 9). Ventrals 525-580 (N 5, mean 560.0). Subcaudals 10-15 (N 7, mean 13.7).

Tip of snout usually pale brown; rest of head and neck dark purplish-brown. Caudal spine and around vent whitish or pale grey; rest of tail (and often last few scale rows of body) brownish-black. Remaining dorsal surfaces purplish-brown, gradually becoming paler on lateral and ventral surfaces.

### Distribution

East Kimberley (far north-east of Western Australia), south to Halls Creek and west to Fitzroy Crossing (Fig. 19). Also Northern Territory.

### Material

*Kimberley Division (W.A.)*: Wyndham (31520); Lake Argyle (61352-3); 13 km NW of [new] Lissadell (70361, 70368) and 12 km WSW (70322); Turkey Creek (NMV D4715); Elgie Cliffs (32283); near Halls Creek (26635); Fitzroy Crossing (28234).

*Northern Territory*: 12 km N of Adelaide River (24006); Katherine (21935).

## *Ramphotyphlops hamatus* sp. nov.

Figs 15 and 16

### Holotype

R69572 in Western Australian Museum, caught by Mr R.E. Johnstone on evening of 6 May 1980 in a garden at Marandoo, Western Australia, in 22°38'S, 118°06'E.

### Paratypes

For details of 40 specimens from the North-West, South-West and Eastern Divisions of Western Australia, see Material.

### Diagnosis

A moderately large, moderately stout, dark blind-snake with beaked snout, 22 midbody scale rows and nasal cleft usually proceeding from second labial. Distinguishable from *R. australis* by transverse cutting edge on tip of snout, nasal cleft not extending on to top of head and more numerous ventrals (usually more than 340 v. usually fewer than 340).

**Description**

Total length (mm): 113-418 (N 40, mean 246.5). Length of tail (% total length): 1.8-4.1 (N 33, mean 2.7).

Rostral (from above) elliptic, much longer than wide, about two-thirds as wide as head and extending back to well short of level of eyes. Nasals narrowly separated behind rostral. Frontal usually as large as prefrontal. Tip of snout with a weak to moderately strong, transverse cutting edge. Nostrils inferior, slightly swollen, slightly to much nearer to rostral than preocular. Nasal cleft proceeding from the preocular (N 2), second labial

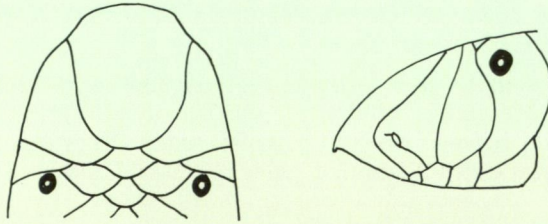


Fig. 15: Head of *Ramphotyphlops hamatus*.

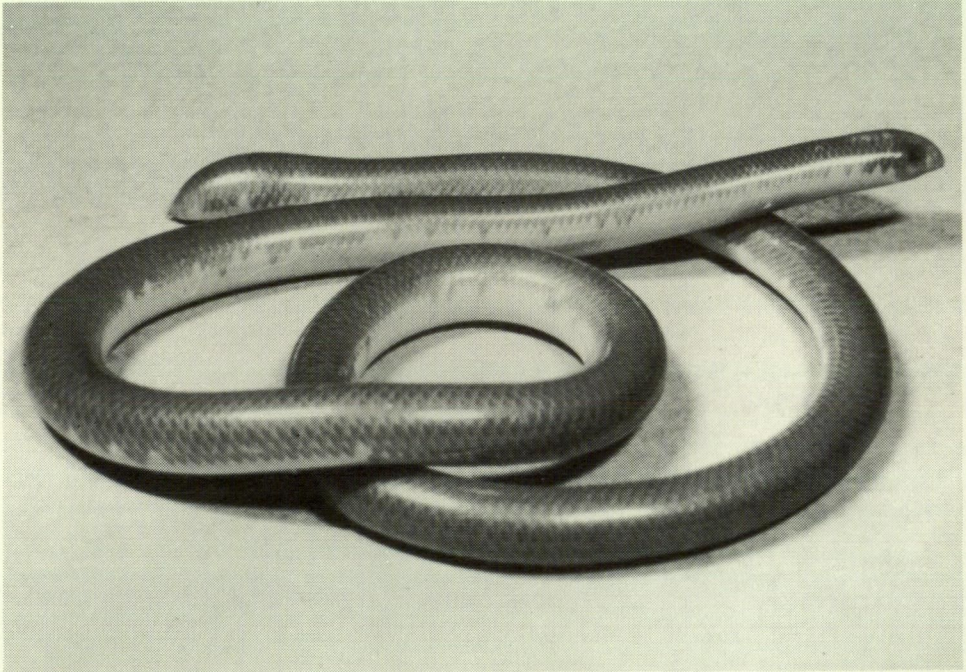


Fig. 16: A *Ramphotyphlops hamatus* from 40 km NNE of Yuin, W.A., photographed by P. Griffin.

(24), junction between first and second labials (5) or first labial (2) to nostril or a little forwards past it but never crossing obtuse ridge above nostril.

Midbody scale rows 22 (N 39). Ventrals 338-394 (N 32, mean 364.1). Subcaudals 11-22 (N 32, mean 14.4).

Dorsal and upper lateral surfaces brownish-black (paler in juveniles), lower surfaces whitish; boundary between dark and pale coloration jagged, owing to lateral scales being wholly dark or wholly pale (as in *R. australis*).

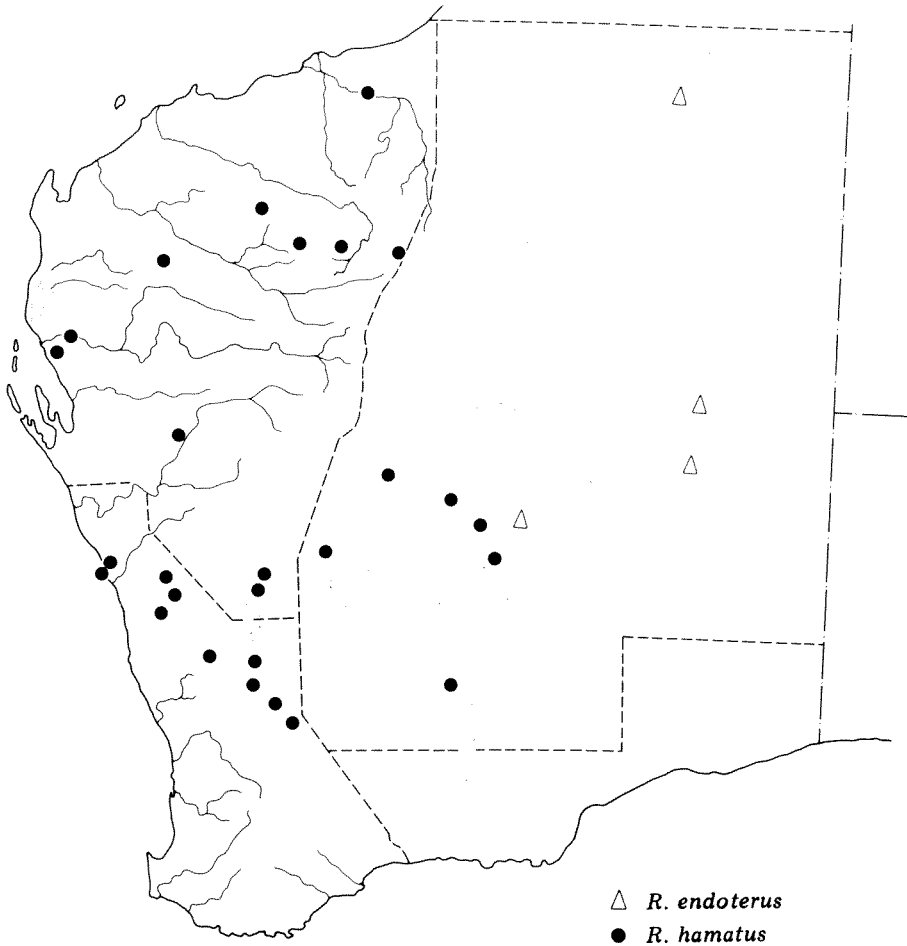


Fig. 17: Map of southern and central Western Australia showing location of specimens of *Ramphotyphlops endoterus* and *R. hamatus*.

**Distribution**

Western arid and semi-arid zones of Western Australia from the DeGrey south to the central Wheat Belt (Merredin), west to the lower Gascoyne, Geraldton and Three Springs, and east to Jiggalong, Banjawarn and Yuinmery (Fig. 17).

**Material**

*North-West Division (W.A.):* Muccan (10897); Woodstock (13055-6, 73521); Marandoo (58925, 56072); 27 km SE of Mt Meharry (65322-3) and 31 km SE (67920) and 36 km SE (67919); Newman (26304); Jiggalong (13359); Ullawarra (15113); 50 km E of Carnarvon (34570); Callagiddy (37049); Mt Narryer (62373); 7 km E of Oudabunna (34684); Paynes Find (12653).

*South-West Division (W.A.):* Newmarracarra (1733); Geraldton (32368); Cannara (28312); Morawa (13686); Three Springs (45699); Caron (24789); Pithara (10044); Mollerin (24984); Koorda (3774); Kununoppin (13146); Merredin (21568).

*Eastern Division (W.A.):* Albion Downs (28291, 30979); Kathleen Valley (62870); Banjawarn (69226, 69242, 69294, 69306, 69329); 10 km NW of Erlistoun (62871); Yuinmery (69193); Laverton (12068); Boulder (7025).

**Derivation of Name**

Latin for 'hooked', in reference to tip of snout.

*Ramphotyphlops kimberleyensis* sp. nov.**Fig. 18****Holotype**

R41456 in Western Australian Museum, collected by Mr J. VanRoon on 5 June 1972 on Bigge Island, Western Australia, in 14°32'S, 125°08'E.

**Paratype**

*Kimberley Division (W.A.):* Napier Broome Bay (69476).

**Diagnosis**

A slender, flat-headed blind-snake with rounded snout, 22 midbody scale rows and nasal cleft proceeding from second labial to high up on nasal scale.

**Description**

Total length (mm): 220-296 (N 2). Length of tail (% total length): 1.7-2.2 (N 2).

Rostral (from above) much longer than wide, about half as wide as head, widest anteriorly and not reaching back to level of eyes. Nasals narrowly separated. Frontal smaller than prefrontal. Snout rounded in profile. Nostrils lateral, a little nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 2) to nostril, thence upwards and slightly backwards to about midway between nostril and top of nasal.

Midbody scale rows 22 (N 2). Ventrals 488-504 (N 2). Subcaudals 12-20 (N 2).

Snout pale, almost back to level of eyes. Dark upper surfaces gradually merging with pale lower surfaces.

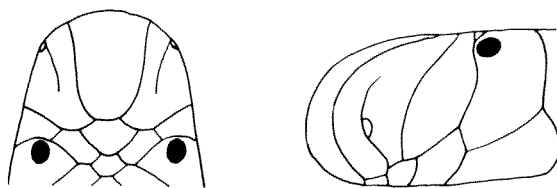


Fig. 18: Head of *Ramphotyphlops kimberleyensis*.

### Distribution

Subhumid north-west Kimberley (far northern Western Australia). See Fig. 19.

- ▼ *R. guentheri*
- ▽ *R. ligatus*
- ▲ *R. kimberleyensis*
- △ *R. micromma*
- *R. yampiensis*
- *R. troglodytes*

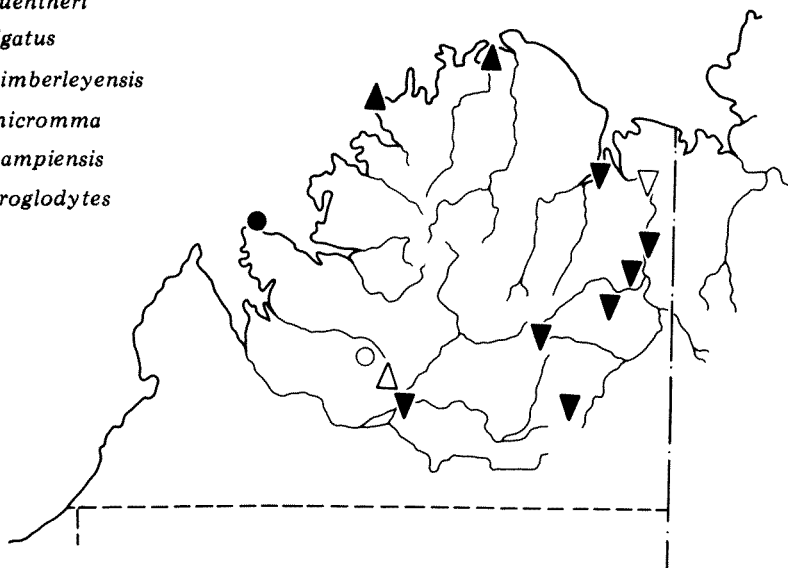


Fig. 19: Map of northern and central Western Australia showing location of specimens of *Ramphotyphlops guentheri*, *R. kimberleyensis*, *R. ligatus*, *R. micromma*, *R. troglodytes* and *R. yampiensis*.

### Remarks

This species has been confused with *R. polygrammicus* (Schlegel) of the Lesser Sundas. After examining the holotype of *R. polygrammicus* (RMNH

3712; 1) and another specimen from Timor (RMNH 6895; 1) and two topotypes of *Typhlops soensis* de Jong (BMNH 1926.8.20.139-140) I find *R. kimberleyensis* to be quite distinct. *R. polygrammicus* is much darker and not flat-headed; its rostral is narrower and narrows (not widens) anteriorly; the nasal cleft proceeds vertically from the nostril and, after curving sharply forwards, terminates about one quarter of the way from nostril to top of nasal; and there are fewer ventrals (421-450).

In *R. torresianus* (Boulenger) of north Queensland and southern New Guinea the rostral similarly narrows anteriorly, but the ventrals are still fewer (c. 350).

### *Ramphotyphlops leptosoma* Robb, 1972

#### Fig. 20

*Ramphotyphlops leptosoma* Robb, 1972, J. Proc. R. Soc. West. Aust. 55: 39. The Loop, lower Murchison River, Western Australia.

#### Diagnosis

A medium-sized, very slender, beaked blind-snake with 16 or 18 midbody scale rows and nasal cleft proceeding from second labial and often dividing nasal scale. Further distinguishable from *R. grypus* by its non-black tail, and from *R. waitii* by its unswollen nostrils.

#### Description

Total length (mm): 125-375 (N 18, mean 238.5). Length of tail (% total length): 1.5-3.8 (N 18, mean 2.3).

Rostral (from above) elliptic, about one and three-quarters times as long as wide, about three-quarters as wide as head and usually extending back to level of eyes. Nasals narrowly separated behind rostral. Frontal much smaller than prefrontal. Snout with a dark, weak to moderately strong transverse cutting edge. Nostrils inferior, very close to rostral. Nasal cleft proceeding from second labial (N 17) to nostril, thence obliquely upwards and forwards to rostral or nearly so. Eye small, not much larger than nostril.

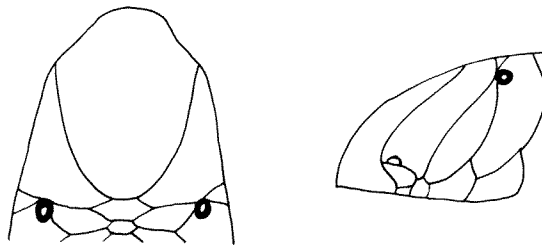


Fig. 20: Head of *Ramphotyphlops leptosoma*.

Midbody scale rows 16 (N 17) or 18 (1). Ventrals 558-720 (N 10, mean 617.3). Subcaudals 16-25 (N 13, mean 18.2).

Snout horn-coloured. Remaining dorsal surfaces purplish-brown, gradually becoming paler ventrally.

**Distribution**

Mid-west coast of Western Australia from Wooramel south to Geraldton and inland to Meeberrie (Fig. 21).

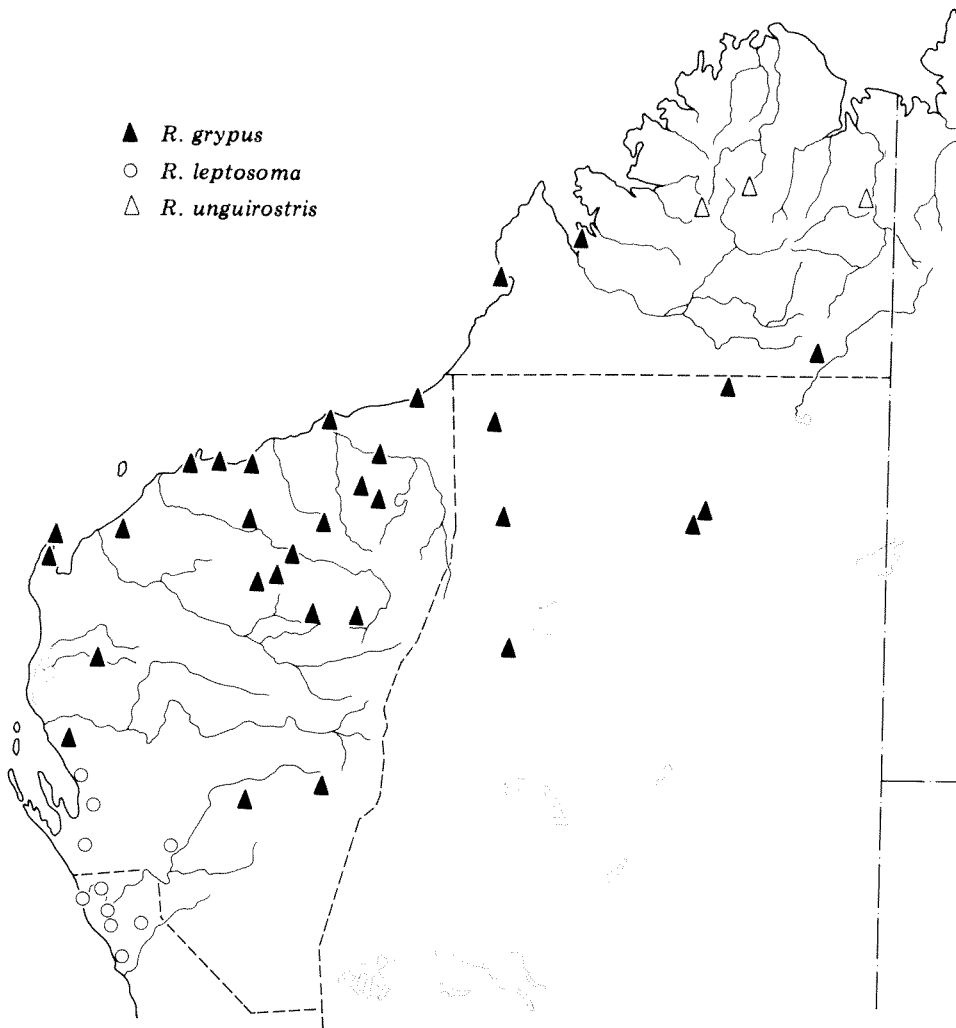


Fig. 21: Map of northern and central Western Australia showing location of specimens of *Ramphotyphlops unguirostris*, *R. grypus* and *R. leptosoma*.

**Geographic Variation**

Only the southernmost specimen (1734) has more than 16 midbody scale rows.

**Material**

*North-West Division (W.A.):* Wooramel (55038-9); Woodleigh (57392); 15 km WNW of Cooloomia (66343); Meeberrie (51097).

*South-West Division (W.A.):* The Loop, lower Murchison River (29624); Kalbarri (34580-1, 34649); Ajana (26012-3); Binnu (26014); 40 km NE of Yuna (57545); Bowes Station, Northampton (13642a-d); Newmarracarra (1734).

***Ramphotyphlops ligatus* (Peters, 1879)****Fig. 22**

*Typhlops ligatus* Peters, 1879, Monatsb. k. Preuss. Akad. Wiss. Berlin 1879: 775. Mackay, Queensland.

*Typhlops curtus* Ogilby, 1892, Rec. Aust. Mus. 2: 23. Walsh River, Queensland.

**Diagnosis**

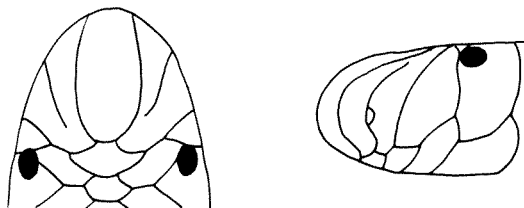
A moderately stout blind-snake with 24 midbody scale rows and nasal cleft proceeding from first labial well on to top of head. Further distinguishable from *R. unguirostris* by snout rounded in profile and much narrower rostral.

**Description**

Total length (mm): 111-319 (N 5, mean 198.0). Length of tail (% total length): 2.7-3.9 (N 5, mean 3.2).

Rostral (from above) about twice as long as wide, one-third or less as wide as head, widest posteriorly and not extending back to level of eyes. Nasals narrowly separated behind rostral. Frontal much smaller than prefrontal. Snout rounded in profile. Nostrils inferior, about equidistant from rostral and preocular. Nasal cleft proceeding from first labial (N 5) to nostril, thence upwards and slightly backwards and terminating after briefly curving forwards midway between nostril and top of nasal scale or higher.

Midbody scale rows 24 (N 5). Ventrals 335-435 (N 5, mean 397.4). Subcaudals 11-17 (N 5, mean 13.4).



**Fig. 22:** Head of *Ramphotyphlops ligatus*.



Snout and around eye pale. Remaining dorsal and upper lateral surfaces dark purplish-brown, sharply demarcated from whitish lower surfaces.

### Distribution

East Kimberley (far north-eastern Western Australia). Also Northern Territory and Queensland. See Fig. 19.

### Material

*Kimberley Division (W.A.)*: Kimberley Research Station (15 km N of Kununurra) (12110, 22357); 13 km NW of [new] Lissadell (75510).

*Northern Territory*: Katherine (24936). [For locality of specimens in Northern Territory Museum, Darwin, see Wells (1979).]

*Queensland*: Brisbane (11554).

### *Ramphotyphlops margaretae* sp. nov.

#### Fig. 23

### Holotype

R15710 in Western Australian Museum, collected by Mr W.H. Butler on 25 August 1962 at Lake Throssell, Western Australia, in 27°25'S, 124°18'E.

### Diagnosis

A very slender blind-snake with 18 midbody scale rows and nasal cleft proceeding from second labial; most like *R. bituberculatus* but body more elongate and snout not so strongly trilobed.

### Description (of holotype, the only available specimen)

Total length (mm): 306. Length of tail (% total length): 1.1.

Rostral (from above) one and three-quarters times as long as wide, two-thirds as wide as head and extending back to level of front of eyes. Nasals separated behind rostral. Frontal much smaller than greatly enlarged pre-frontal. Snout angular in profile. Nostrils inferior, swollen, and nearer to rostral than preocular.

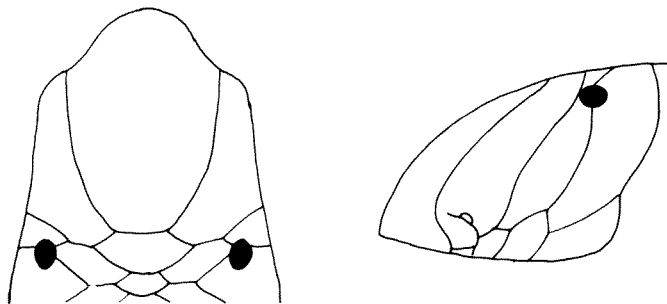


Fig. 23: Head of *Ramphotyphlops margaretae*.

Midbody scale rows 18. Ventrals 559. Subcaudals 12.

Snout pale horn. Remaining dorsal surfaces pinkish to purplish-grey. Ventral surfaces pale grey.

**Distribution**

Known from only one locality in the arid interior of Western Australia (Fig. 5).

**Remarks**

Named after Margaret Butler, wife of the collector of the holotype.

*Ramphotyphlops micromma* sp. nov.

Fig. 24

**Holotype**

R1341 in Western Australian Museum, collected in October 1924 by W.R. Richardson at Leopold Downs, Western Australia, in 17°52'S, 125°26'E.

**Diagnosis**

A slender, short-snouted blind-snake with very small eyes, 18 midbody scale rows and nasal cleft proceeding from second labial and completely dividing nasal scale. Further distinguishable from *guentheri* and *grypus* by non-black tail and less numerous ventrals (fewer than 500 v. more than 500).

**Description** (of holotype, the only available specimen)

Total length (mm): 205. Length of tail (% total length): 2.4.

Rostral (from above) widest posteriorly, one and three-quarters times as long as wide, a little more than half as wide as head and extending back to level of front edge of eyes. Nasals moderately widely separated behind rostral. Frontal much smaller than prefrontal. Snout very short, rounded in profile. Nostrils inferior, nearer to rostral than preocular. Nasal cleft proceeding from second labial to nostril, thence extending vertically well on to top of head and reaching rostral after curving forwards. Eye very small (no larger than nostril) and barely discernible.

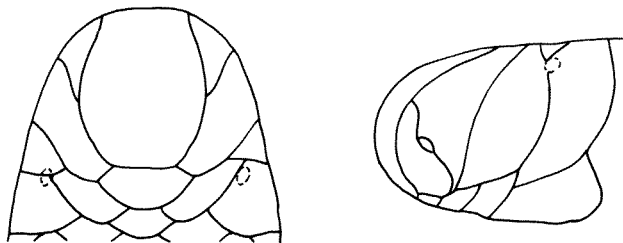


Fig. 24: Head of *Ramphotyphlops micromma*.

Midbody scale rows 18. Ventrals 478. Subcaudals 15.

No details of coloration remain.

### Distribution

Only known from one locality in southern interior of Kimberley Division (far northern Western Australia). See Fig. 19.

### Derivation of Name

Greek for 'small eye'.

### *Ramphotyphlops pinguis* (Waite, 1897)

Figs 25 and 26

*Typhlops pinguis* Waite, 1897, Trans. R. Soc. S. Aust. 21: 25. 'South Australia'.

*Typhlops opisthopachys* Werner, 1917, Mitt. zool. Mus. Hamb. 34: 35. 'Tanga, German East Africa'.

### Diagnosis

A large, very stout, moderately dark blind-snake with 20 midbody scale rows, snout slightly angular in profile and nasal cleft proceeding from second labial.

### Description

Total length (mm): 131-445 (N 48, mean 335.4). Length of tail (% total length): 2.6-5.7 (N 46, mean 3.8).

Rostral (from above) urn-shaped, much longer than wide, about half as wide as head and not extending back to level of eyes. Nasals narrowly separated behind rostral. Frontal usually much smaller than prefrontal. Snout slightly angular in profile. Nostrils inferior, slightly swollen, equidistant from rostral and preocular. Nasal cleft proceeding from second labial (N 42) to nostril, thence curving upwards and forwards for one-fifth to one-half of distance to rostral.

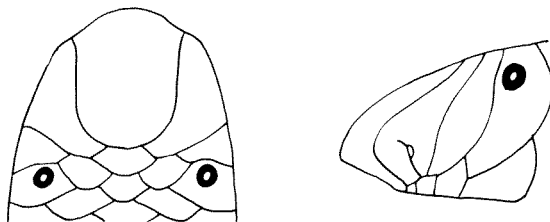


Fig. 25: Head of *Ramphotyphlops pinguis*.

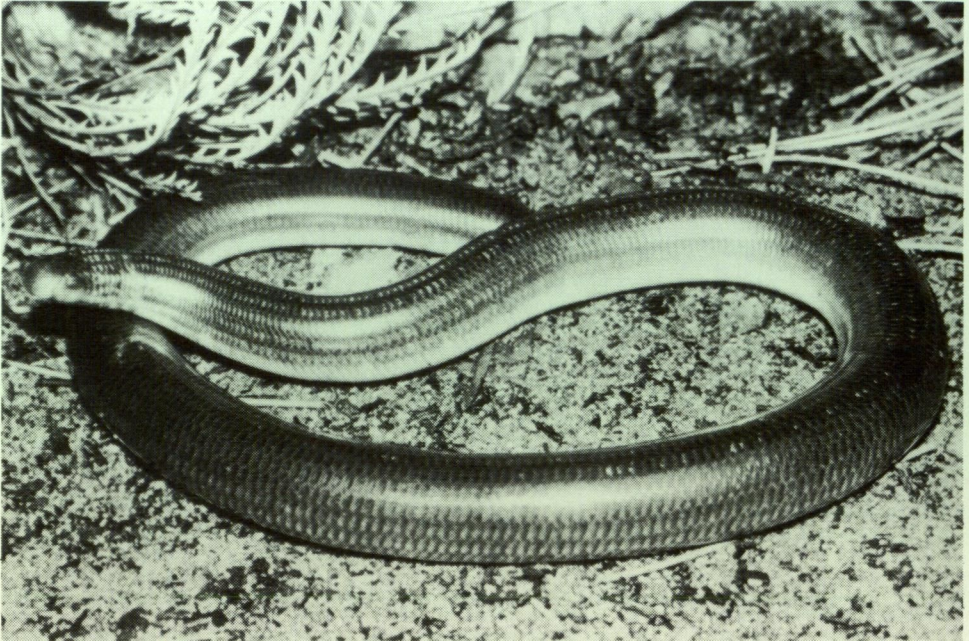


Fig. 26: A *Ramphotyphlops pinguis* from Canning Dam, W.A., photographed by T.M.S. Hanlon.

Midbody scale rows 20 (N 47). Ventrals 277-331 (N 41, mean 301.5). Subcaudals 12-19 (N 41, mean 14.8).

Dorsal and upper lateral surfaces dark brown, either merging gradually with or fairly sharply demarcated from whitish lower surfaces.

### Distribution

South-western Western Australia, north to New Norcia, east to Koorda, Bruce Rock and Jerramungup, and south to Bunbury, Boyup Brook and Tenterden (Fig. 5).

### Material

*South-West Division* (W.A.): 'Geraldton' (14204); Koorda (3774); New Norcia (28396); Gingin (3364); Bindoon (37465); Northam (4545); Muresk (22423); Bakers Hill (12920); Chidlow (2109, 26865); Bruce Rock (3401); Darlington (11326); Boya (55917); Kalamunda (26343, 29754); Karragullen (2591); Mt Dale (19133); Jarrahdale (64626); Pinjarra (747, 7078); head of South Dandalup River (31222); Wandering (4367); Kulin (34028); Yarloop (2602); Williams (17310); Lake Bidy (2779); Harvey (6373); Wokalup (NMV R7173); West Tarwongup (5347); Wagin (15123); Darkan (4391); Boolading (4951); Buckingham (1365); Burekup (854); Capercup (5207); Katanning (473, 859); Kojonup (590, 653, 28630); Narlungup (805); Boyup Brook (5352); Jerramungup (21879); Cranbrook (783, 5122); Tenterden (8231); no locality (291, 69519); holotype (SAM R803).

*Ramphotyphlops troglodytes* sp. nov.

Fig. 27

**Holotype**

R51043 in Western Australian Museum, collected on 1 September 1975 by Dr B.R. Wilson and Mrs S.M. Slack-Smith at Tunnel Cave, Napier Range, Western Australia, in 17°37'S, 125°14'E.

**Diagnosis**

A very slender, flat-headed, white-snouted blind-snake with snout rounded in profile, 22 midbody scale rows and nasal cleft proceeding from second labial and completely dividing nasal.

**Description** (based on holotype, the only available specimen)

Total length (mm): 402. Tail length (% total length): 1.3.

Rostral (from above) oval, widest anteriorly, nearly one and one-half times as long as wide, nearly three-quarters as wide as head and extending back to well short of level of eyes.

Head depressed. Snout rounded in profile. Nostrils lateral, much nearer to rostral than preocular. Nasal cleft proceeding from second labial to nostril, thence curving upwards and forwards to rostral. Eyes indistinct.

Midbody scale rows 22. Ventrals 641. Subcaudals 14.

*Coloration in spirits.* Snout whitish, back nearly to level of eyes. Tip of tail whitish. Remaining dorsal and upper lateral surfaces brown, gradually merging with pale lower surfaces.

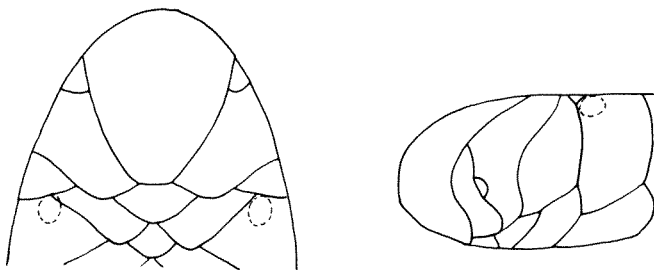


Fig. 27: Head of *Ramphotyphlops troglodytes*.

**Distribution**

Only known from one locality in the interior of the Kimberley Division, far northern Western Australia (Fig. 19).

*Ramphotyphlops unguirostris* (Peters, 1867)

Fig. 28

*Typhlops (Onychocephalus) unguirostris* Peters, 1867, Monatsb. K. Preuss. Akad. Wiss. 1867: 708. Rockhampton, Queensland.

*Typhlops curvirostris* Peters, 1879, Monatsb. K. Preuss. Akad. Wiss. Berlin 1879: 776. Port Bowen, Queensland.

**Diagnosis**

A moderately slender blind-snake with 24 midbody scale rows, nasal cleft proceeding from first labial, and snout tipped with cutting edge. Further distinguishable from *R. ligatus* by much wider rostral.

**Description**

Total length (mm): 268-490 (N 7, mean 357.0). Length of tail (% total length): 1.2-2.7 (N 7, mean 2.0).

Rostral (from above) elliptic, longer than wide, about two-thirds as wide as head, and extending back to well short of eyes. Nasals in short contact behind rostral or narrowly separated. Frontal smaller than prefrontal. Cutting edge at tip of snout extending back through nasal scale as a ridge. Nostrils inferior, much nearer to rostral than preocular. Nasal cleft proceeding from first labial to nostril, thence curving upwards and forwards to or towards rostral.

Midbody scale rows 24 (N 7). Ventrals 387-474 (N 5, mean 426.6). Subcaudals 11-16 (N 7, mean 13.1).

Dorsal and upper lateral surfaces dark olive-brown, fairly sharply demarcated from whitish lower surfaces.

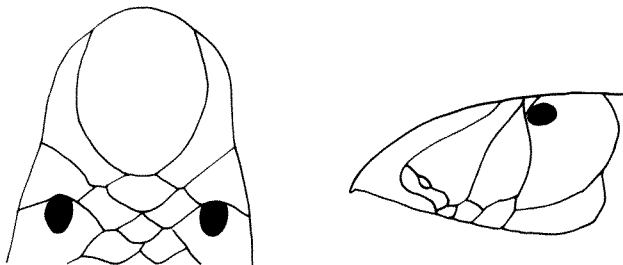


Fig. 28: Head of *Ramphotyphlops unguirostris*.

**Distribution**

Kimberley Division, far northern Western Australia (Fig. 21). Also Northern Territory and eastern Australia.



**Remarks**

Our first Western Australian specimen was obtained when Mr W.H. Butler saw one of two Pied Butcherbirds (*Cracticus nigrogularis*) with a snake in its bill. A well-aimed stone persuaded the bird to release the snake.

The five species of blind-snake recorded from north-west Kimberley, viz. *R. kimberleyensis*, *micromma*, *troglydytes*, *unguirostris* and *yampiensis*, are represented in our collection by only eight specimens. This and Mr Butler's experience demonstrate the difficulty of collecting blind-snakes in this rugged region and indicate the probability that several more species remain to be discovered there.

**Material**

*Kimberley Division (W.A.):* Gibb River HS (73513, 73538); Manning Creek in 16°38'S, 125°55'E (70725); 13 km NW of [new] Lissadell (75342, 75461, 75518).

*Northern Territory:* Katherine (13891).

***Ramphotyphlops waitii* (Boulenger, 1895)****Figs 29 and 30**

*Typhlops waitii* Boulenger, 1895, Proc. Linn. Soc. N.S.W. (2) 9: 718. N.W. Australia.

**Diagnosis**

A large, very slender, strongly beaked blind-snake with 20 midbody scale rows and nasal cleft usually proceeding from second labial. Further distinguishable from *R. bituberculatus* by more numerous ventrals (more than 500 v. fewer than 500) and snout not strongly trilobed.

**Description**

Total length (mm): 127-614 (N 155, mean 341.2). Length of tail (% total length): 1.0-3.1 (N 76, mean 2.0).

Rostral (from above) elliptic, much longer than wide, about three-quarters as wide as head and usually extending back not as far as eyes (occasionally to level of front edge of eyes). Nasals narrowly separated behind rostral. Frontal smaller than prefrontal. Tip of snout with a strong, dark transverse cutting edge. Nostrils inferior, swollen, much nearer to rostral than preocular. Nasal cleft proceeding from second labial (N 121) or from junction between second labial and preocular (1) to nostril, thence obliquely upwards and forwards to about midway between nostril and rostral.

Midbody scale rows 20 (N 110). Ventrals 535-667 (N 30, mean 599.4). Subcaudals 13-26 (N 31, mean 18.6).

Dorsal and upper lateral surfaces moderately dark purplish-brown, gradually merging with whitish lower surfaces.

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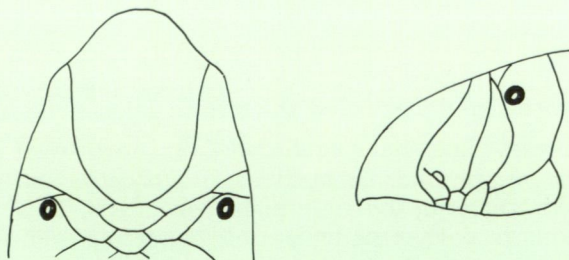


Fig. 29: Head of *Ramphotyphlops waitii*.

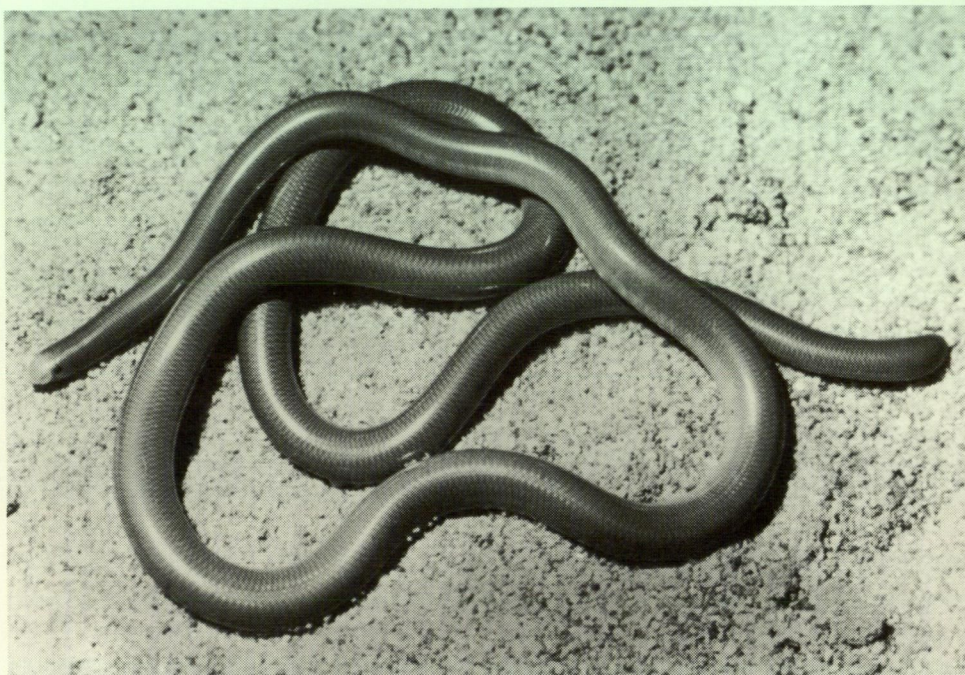


Fig. 30: A *Ramphotyphlops waitii* from 10 km S of Coorow, photographed by T.M.S. Hanlon.

**Distribution**

Western Australia from the Hamersley and Warburton Ranges south to Armadale, Dumbleyung, Holt Rock, the Eastern Goldfields and Cundeleele (Fig. 31).

**Material**

North-West Division (W.A.): 'N.W. Australia' (holotype BMNH 1946.1.11.74); Marandoo (52687-8, 68951); Marillana (31906); Roy Hill (13998); Kumarina (25214); 19 km S of Tamala (64382); Yalgoo (1743); Warriedar (1404).



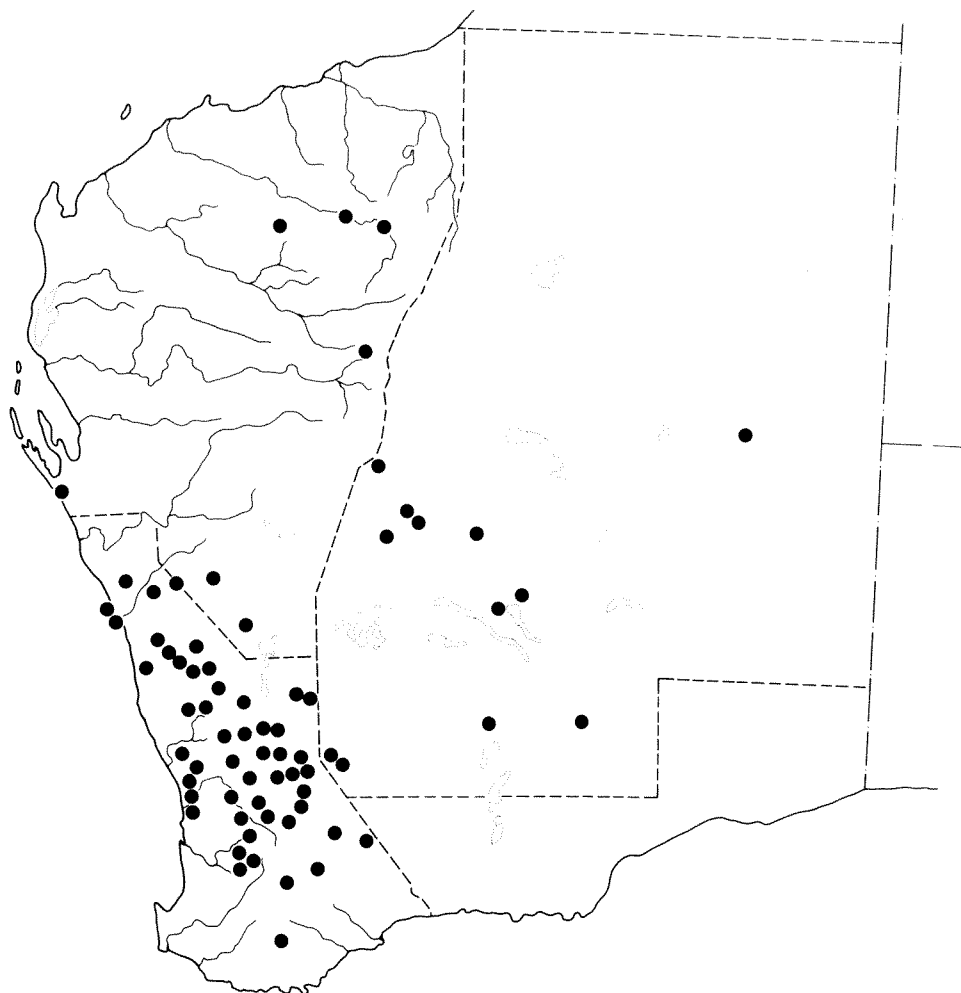


Fig. 31: Map of southern and central Western Australia showing location of specimens of *Ramphotyphlops waitii*.

*South-West Division (W.A.):* Yuna (26048); Mullewa (8447) and 32 km E (22769); Geraldton (8703-4, 34550) and 4 km S (41665); Greenough (7924); 13 km S of Mingenerew (33382-3); Perenjori (24796); Three Springs (5192); Carnamah (403); Eneabba Spring (26761); Waddi Forest (8064); Maya (26407, 56106); 10 km S of Coorow (54485, 57801-7); Wubin (30913); Dalwallinu (9241, 28145); 30 km NE of Beacon (48403); 29 km NE of Wialki (47782); Kalannie (69497); Coomberdale (31157); Miling (48017-8); Bindi Bindi (12020); Moora (22864-5); Gabbin (13990); Koorda (19659-65); Wongan Hills (10057); Moonijin (32032, 37490); Ejanding (7105); Nalkain (4992); Korrelocking (26410); 14 km S of Trayning (25595); Nukarni (6312); Goomalling (12769); Beer-mullah (8613); Lower Chittering (24742); Merredin (1368); Doodlakine (5787); Kellerberrin (24093, 27266); Cunderdin (3854, 29305); East Bullsbrook (13865); Bullsbrook

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(NMV R7199); Upper Swan (15118); Herne Hill (68275); Midland (2443); Guildford (31994); York (4246-9, 8973-8); Helena Valley (31992); Maida Vale (1554-5); Bruce Rock (29598) and 18 km S (22937-8); Shackleton (15119); Balkuling (5129); Quairading (2484-8, 14827, 52636); Dangin (4265); Gosnells (1381-2); Armadale (67334); Mt Kokeby (3794); Lake Mears (4319); Corrigin (12652); Pingelly (9175, 12633, 62504); Karlgarin (31055); 5 and 9 km NW of Holt Rock (54412-6); Congelin (39070); Contine (69528); Narrogin (25901); Williams (421); Lake Grace Reserve (44219-21); Dumbleyung (28948); 'Cranbrook' (NMV R7172, 7193); no locality (643, 1198, 4832, 7297, 8937, 29708-13).

*Eastern Division (W.A.):* Warburton Range (14659, 17780-1, 22004, 22027, 22095, 31358-9); Yandil (2228); Albion Downs (30978, 30980); Kathleen Valley (15120, 19778); Booylgoo Spring (1121, 1745); Banjarn (69197, 69219); Laverton (21336, 23913); 8 km SW of Mt Morgans (69527); Cundeelee (32676); Bulong (4205); 'Goldfields' (448); Westonia (4988); Bodallin (22885).

*Ramphotyphlops yampiensis* sp. nov.

Fig. 32

**Holotype**

R26839 in Western Australian Museum, collected in March 1966 by Mr F.C. VanIngen on Koolan Island, Western Australia, in 16°08'S, 123°45'E.

**Diagnosis**

A slender blind-snake with rounded snout, 18 midbody scale rows and nasal cleft proceeding from preocular and completely dividing nasal scale. Further distinguishable from *R. diversus* by more numerous ventrals.

**Description** (based on holotype, the only available specimen)

Total length (mm): 128. Tail (% total length): 1.8.

Rostral (from above) elliptic, one and three-quarters times as long as wide, two-thirds as wide as head and extending back nearly to level of eyes. Nasals narrowly separated behind rostral. Frontal smaller than prefrontal. Snout rounded in profile. Nostrils slightly inferior (i.e. almost lateral), nearer to rostral than preocular. Nasal cleft proceeding from preocular to nostril, thence obliquely upwards and forwards to rostral.

Midbody scale rows 18. Ventrals 480. Subcaudals 11.

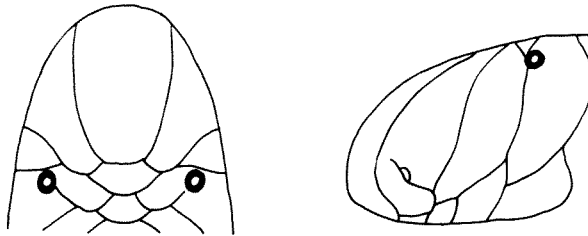


Fig. 32: Head of *Ramphotyphlops yampiensis*.

*Coloration in spirits.* Snout pale, rest of upper surface brown, becoming darker on head, neck and tail and paler on lower surfaces.

### Distribution

Only known from one island in Yampi Sound, north-west Kimberley (far north of Western Australia). See **Fig. 19**.

### REFERENCES

- McDOWELL, S.B. (1974). A catalogue of the snakes of New Guinea and the Solomons, with special reference to those in the Bernice P. Bishop Museum, Part 1, Scolecophidia. *J. Herpet.* 8: 1-57.
- ROBB, J. (1966). The generic status of the Australasian typhlopids (Reptilia: Squamata). *Ann. Mag. nat. Hist.* (13) 9: 675-679.
- STIMSON, A.F., ROBB, J. and UNDERWOOD, G. (1977). *Leptotyphlops* and *Ramphotyphlops* Fitzinger, 1843 (Reptilia, Serpentes): proposed conservation under the plenary powers. *Bull. zool. Nomencl.* 33: 204-207.
- WAITE, E.R. (1918). Review of the Australian blind snakes (family Typhlopidae). *Rec. S. Aust. Mus.* 1: 1-34.
- WELLS, R. (1979). New reptile records for the Northern Territory. *Northern Territory Naturalist* 1 (2): 3-4.

## APPENDIX

*Ramphotyphlops braminus* (Daudin, 1803)

## Fig. 34

*Eryx braminus* Daudin, 1803, Histoire naturelle, générale et particulière des reptiles 7: 279. Vizagapatam, India.

## Diagnosis

A very small, dark blind-snake with rounded snout, 20 midbody scale rows, and nasal cleft proceeding from preocular and completely dividing nasal scale. Distinguishable from all Australian blind-snakes by ventrals dark and often only in point contact with adjacent scales of same longitudinal row (Fig. 33).



Fig. 33: Sketch showing ventral scales in Western Australian species of *Ramphotyphlops* (right) and in *R. braminus* (left).

## Description

Total length (mm): 64-150 (N 9, mean 107.9). Length of tail (% total length): 1.5-2.7 (N 9, mean 2.1).

Rostral (from above) twice as long as wide, about one-third as wide as head, narrowing anteriorly, and usually not extending back to level of eyes. Nasals narrowly separated behind rostral. Frontal about as large as prefrontal. Snout short and rounded in profile. Nostrils lateral, usually just visible from above, equidistant from rostral and preocular or a little nearer to rostral. Nasal cleft proceeding from preocular (N 9) to nostril, thence upwards and curving forwards before joining rostral at its widest point.

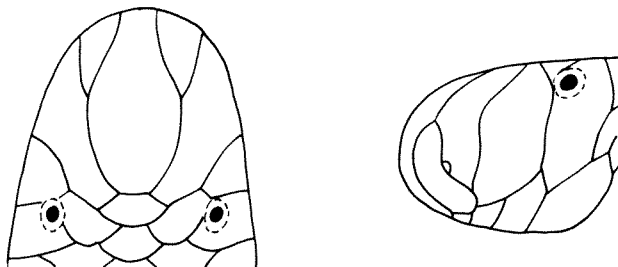


Fig. 34: Head of *Ramphotyphlops braminus*.

Midbody scale rows 20 (N 6). Ventrals 300-318 (N 4, mean 308.2). Subcaudals 8-12 (N 4, mean 10.2).

Tip of snout, lips and tip of lower jaw pale brown. Vent and tip of tail white. Rest of upper surface dark purplish-brown, gradually becoming paler on lower surfaces, anterior angle of all scales purplish-black.

### Distribution

Original habitat presumably South-East Asia; now established in many parts of the world.

### Remarks

At present *Ramphotyplops* and *Typhlops* can only be distinguished on characters of the male genitalia, which makes it impossible to place the parthenogenetic *braminus* with any certainty. I therefore follow McDowell (1974) in placing it in *Typhlina* [= *Ramphotyphlops*] to which it seems closer in details of head scalation.

### Material

Malaya (6096-7); Christmas I. (37046); Cocos Keeling Is (26234); Darwin, Northern Territory (28735, 28413, 30946-8).