

Genus Pseudocordylus A. Smith, 1838

Pseudocordylus A. Smith, 1838, Ann. Mag. nat. Hist., (2) 2, p. 32. Type by subsequent designation by Loveridge (1944). P. montanus A. Smith = Cordylus microlepidotus Cuvier, 1829.

Head and body depressed; limbs well developed, digits slightly keeled inferiorly. Head shields regular; nostril pierced between the nasal and first upper labial; ear-opening large. Dorsal scales more or less heterogeneous, small, roundish, intermixed with small granules; no underlying bony plates. Ventrals large, square or quadrangular; smooth, juxtaposed, in regular longitudinal and transverse series; a collar fold present, attached mesially. Tail spinose. Femoral pores present.

An endemic South African genus represented by five species with eight subspecies of which only one species with two subspecies is found in the Transvaal. This is a complex group with considerable overlap between species and subspecies and even its generic status is questionable, overlapping with the genus Cordylus (Branch 1981). FitzSimons (1943), Loveridge (1944), Broadley (1964) and De Waal (1978) have all held divergent views as a result of the loss of A. Smith's types of melanotus and subviridis and the significance of the elongate temporal scales. A polyphyletic origin for the genus cannot be ruled out particularly when viewing Transvaal material of the subspecies transvaalensis, which exhibits a colour pattern and also partially the temporal squamation of microlepidotus. It is therefore difficult without an analysis of the morphology of the genus as whole, to define relationships. It is therefore intended here to follow De Waal (1978) in the use of nomenclature and morphology.

Key to the Transvaal species.

1. A broad black band extends from the head onto the tail in males; laterally yellow to orange; frontonasal usually split (rarely entire); dorsals in 32-47 longitudinal rows; lateral temporals mostly in 1, rarely 2 or in indeterminate scale rows; range highveld regions south of the Olifants river P. melanotus melanotus
Males olive to olive-yellow above, mostly with 8-9 regular to stepped blackish to black crossbars which become indistinct in very mature males; frontonasal split (63,4%) or entire (36,58%); dorsals in 39-58 (mostly 43-50) longitudinal rows; lateral temporals mostly in 2, 3 or indeterminate scale rows (rarely 1); range Wolkberg, Woodbush through to the Waterberg P. melanotus transvaalensis

Pseudocordylus melanotus melanotus (A. Smith, 1838)

Cordylus (Pseudocordylus) melanotus A. Smith, 1838, Ann. Mag. nat. Hist. (2), 2, p. 32. Type locality: Designated as hills between the main branches of the Orange river, east of Philippolis, Orange Free State (Smith 1843), restricted by De Waal (1978) to the Ficksburg district, eastern Orange Free State. De Waal 1978, p. 59.

Pseudocordylus subviridis subviridis A. Smith. FitzSimons 1943, p. 467, figs. 373 & 374; Broadley 1964, p. 99.

Pseudocordylus microlepidotus melanotus (Smith). Loveridge 1944, p. 75 (part); Welch 1982, p. 116.

Pseudocordylus melanotus melanotus (Smith). De Waal 1978, p. 59; Branch 1988a, p. 170, pl. 73, 1988b, p. 10.

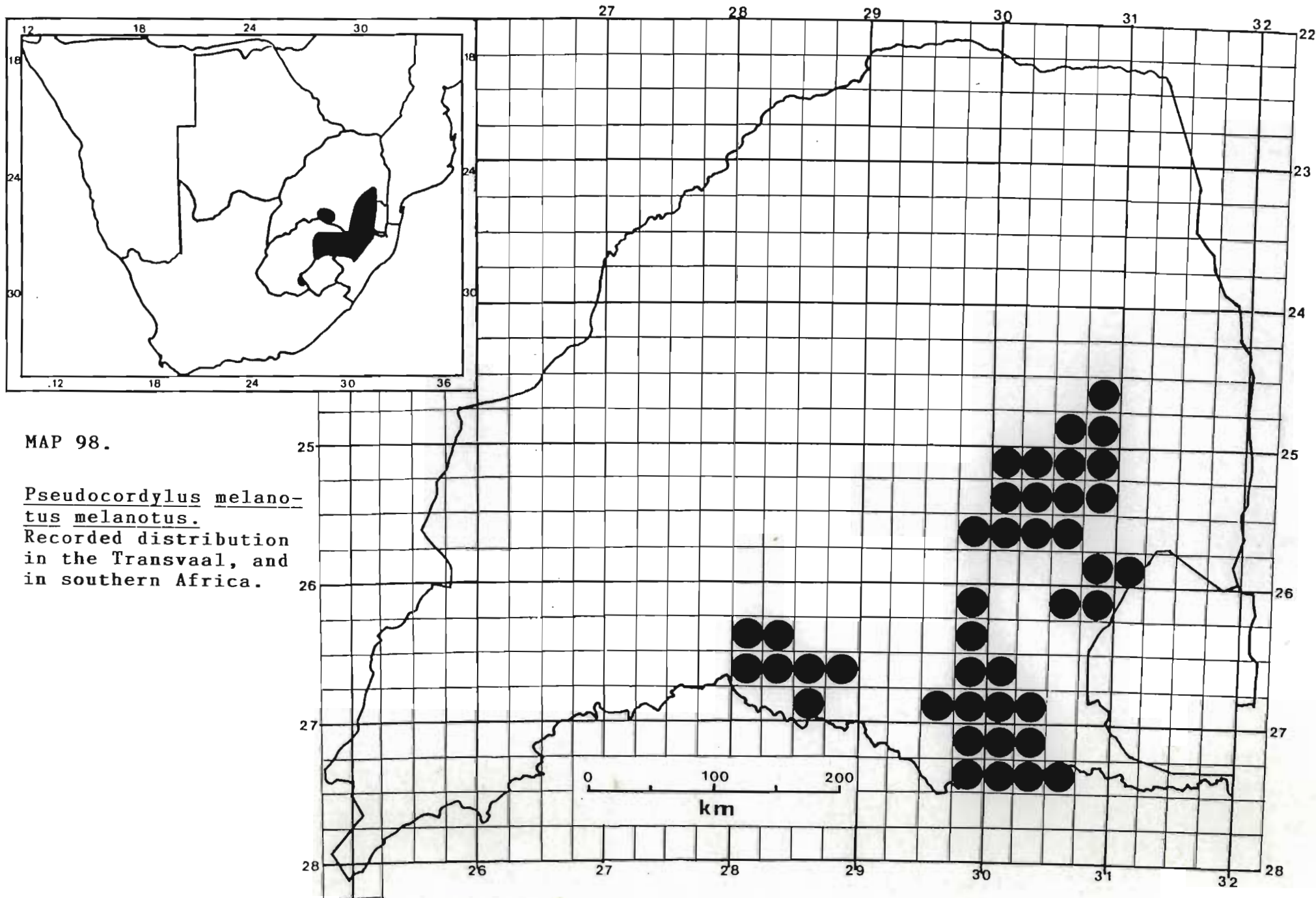
Description. 165 Specimens examined.

Colour: Sexual dimorphism pronounced. Males with a broad blackish dorsal band extending from nasals across the top of the head down the back to merge on the base of the tail. Laterally, temporals blackish; upper and lower labials reddish. Sides of neck and body yellow to orange or reddish-orange with or without dark and light spots or blotches. Two black spots are present on the neck. Limbs orange and black. Sides of tail orange to reddish bands alternating with black proximally becoming less brightly coloured and distinct distally. Ventrally white with or without infusions of reddish orange particularly ventrolaterally. Gular greyish black medianly, fading slightly laterally. Females grey to olive green dorsally with black streaks and stripes extending down the back to the base of the tail. Several interrupted rows of paler spots or blotches extend from behind the head to the base of the tail. Two indistinct rows of dark paravertebral blotches extend from the nuchals to the tail where they coalesce to form bars at regular intervals. Head blackish above. Limbs dark, spotted or flecked with olive; Laterally olive-grey becoming off-white ventrally, two black spots on neck. Gular with dark blackish markings.

Lepidosis: Large depressed lizards with broad triangular heads moderately distinct from the neck. Body broadening posteriorly, broadest near the hind limbs. Limbs well developed and pentadactyle. Tail longer than SVL and tapering, being between 53,69 - 60,93% of total length. Rostral roughly pentagonal, broader than deep; nostril pierced near posterior margin of nasal near suture with 1st upper labial; nasals in narrow to broad contact (rarely separated by rostral) behind rostral; frontonasal split, rarely entire, broader than deep, in contact with loreal, posterior portion of frontonasal

rarely split off into small quadrangular accessory scales; Prefrontals in narrow to broad median contact, and in contact with preoculars and loreals; frontal longer than broad with variable anterior projection; frontoparietals small in broad median contact; anterior parietals squarish, in broad contact with a notch posteriorly; interparietal small, quadrangular to droplet shaped fitting into notch between anterior and posterior parietals. Posterior parietals large, in very broad contact, a narrow occipital scale rarely present between posterior parietals but not totally separating them. 1st upper labial may rarely bud off a small postnasal scale; loreal 1; preocular 1; suboculars 3 rarely 4, median in contact with lip; Temporals variable ranging from irregularly arranged to one or two (exceptionally three) scale rows; the upper usually being dorsoventrally elongate; UL4 (rarely 3 or 5) anterior to subocular; Mental large, as broad as deep; LL6; sublabials five pairs, anteriormost in broad contact behind mental. Dorsal scales juxtaposed, separated by granular interstices, rounded and smooth becoming larger dorsolaterally and laterally, in 32-47 longitudinal rows. Ventrals smooth, rectangular, in 12 (rarely 10,14 or 16) longitudinal rows. Femurs covered with small keeled, scales becoming keeled, spinose on the lower leg; digits well developed with 17-23 subdigital lamellae under the 4th toe. Tail covered dorsally with small keeled scales, laterally with large keeled spinose scales and ventrally with obtusely keeled non-spinose scales. Caudal scales arranged in whorls. Femoral pores in males ranging from 6-10 (mostly 7 or 8). Caudal autotomy present with 48/112 (42,86%) of tails regenerated.

Size: Largest male SVL = 143,0 mm (P10310 - The Brook 196IT) mass = 93,0 g (P10310); Largest female SVL =



136,0 mm (J6628 - Boschhoek 36JT), mass = 63,0 g (N7795 - Dycedale 368JU). Mean male SVL (75,0 mm) = 114,76 mm \pm 15,80 (1SD) n = 44, mass = 42,85 g \pm 17,46 (1SD) n = 44; Mean female SVL (70,0 mm) = 103,09 mm \pm 13,23 (1SD) n = 45, mass = 29,00 g \pm 11,64 (1SD) n = 45.

Distribution

South-eastern and eastern Transvaal and north-eastern Orange Free State. Possibly also adjacent Natal.

Distribution in Transvaal (Map 98)

Blesboklaagte 181IR; Boschhoek 36JT; Buitenzorg 114HT; De Kuilen 205JT; De Roodepoort 435IS; Desire 563KT; Doornhoek 545KT; Doornhoek 677IR; Dycedale 368JU; Eendracht; Elandsfontein 322JT; Gods Window, Blyde River Nature Reserve; Goedemoed 373IT; Goedgevonden 134HT; Greylingstad; Hartebeestvlakte 163JT; Hexrivier 634IR; Kalkoenkrans 366IT; Kastrol Nek; Keyterskloof, Suikerbosrand Nature Reserve; Klipfontein 241JS; Knapdaar 92JT; Koningstein 625JT; Kranskloof 554KT; Kranspoort 248IS; La Belle Esperance 191HT; Langfontein 84HT; Langkloof 356JT; Leiden 340IT; Lisbon Falls; Lisbon State Forest; Lochiel 192IT; Long Tom Pass; Loopfontein 198JT; Magalieskop; Mariepskop 420KT; Mavieriestad; Mount Anderson; Nederhorst Station; Olifantsgeraamte 198JT; Paardeplaats 101HT; Pilgrims Pass; Pittville 197IR; Rietvlei 375JT; Rolfontein 536IS; Smalkloof 122HS; Suikerbosrand Nature Reserve; Tafelkop 26HT; The Brook 196IT; The Brook 196IT; Vaalkop 490IS; Valsfontein 183IR; Verkyk 88HS; Wakkerstroom; Wanhoop 78JT; Welgedacht 82HS; Welgemeend 206IS; Zandkraal 99HT.

Literature Records

24 km E of Lydenburg; Spitskop, Sabie (NMZB). Doornkop 356LS (Loveridge, 1944).

Habitat and Ecology

An exclusively rupicolous species inhabiting large rocky outcrops and cliffs at altitudes ranging from 1400-2300 m a.s.l. in veld types 8, 9, 18, 19, 48, 52, 54, 57, 61, 62, 63 and 64. The males in particular are normally observed sitting on the tops of boulders with head up but when approached, slip down on the far side of the boulder taking refuge in crevices. Here they wedge themselves by inflating with air and arching the head to obtain maximum resistance against removal. Usually found singly but occasionally two and rarely three individuals may inhabit the same crevices. However an outcrop may have many crevices and family groups with a single dominant male on an outcrop are the rule. De Waal (1978) records Coleoptera, Neuroptera larvae, Hymenoptera and Araneida in the diet of these lizards. This is in keeping with their foraging strategy and relatively clumsiness. Live bearing these lizards produce from one to four young during midsummer measuring 46,0 - 48,0 mm SVL, tail = 64,0 - 65,0 mm with a mass of 2,3 g.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. It occurs in six provincial nature reserves widespread within its distribution range. Coupled with its habitat this species can be considered secure.

Remarks

De Waal (1978) discussed in detail the validity of the specific name melanotus, basing it on page priority of the original descriptions of melanotus and subviridis by A. Smith (1838). Various authors (FitzSimons, 1943, Loveridge, 1944 and Broadley, 1964) have held varying views on the taxonomic status and affinities of the species. This is no doubt due to the degree of variation in the key characters used to delineate the specific taxon, such as the temporals. This has resulted in the species being referred to as "microlepidotus", "subviridis" and "melanotus". FitzSimons (1943) described the form transvaalensis on specimens from Woodbush on the basis of two rows of temporal scales. This character is also found in the nominate form although the most frequent is a single row of elongate temporals. However he maintained that the typical form only reached Ermelo and Wakkerstroom where some specimens also showed a smaller second row of temporals thereby approaching transvaalensis. It is therefore apparent that the nominate form is more widespread in the Transvaal and three allopatric populations are evident (Map 98). These are separated from transvaalensis which is a larger subspecies by the dry, and hotter Olifants river gap which has been the cause of isolation and speciation of many other reptiles.

The great variability in the frontonasal indicates doubt as to the validity of the form subviridis, although not having examined the Orange Free State material, little else can be said.

Pseudocordylus melanotus transvaalensis FitzSimons,
1943.

Pseudocordylus subviridis transvaalensis FitzSimons
1943, Tvl. Mus. Mem. 1, pp. 469-470 (part). Type
locality. Woodbush, N. Transvaal. Broadley 1964, p. 99
(part).

Pseudocordylus melanotus subviridis (A. Smith). De Waal
1978, p. 61.

Pseudocordylus microlepidotus melanotus (Smith) (part).
Loveridge 1944, p. 75; Welch 1982, p. 116.

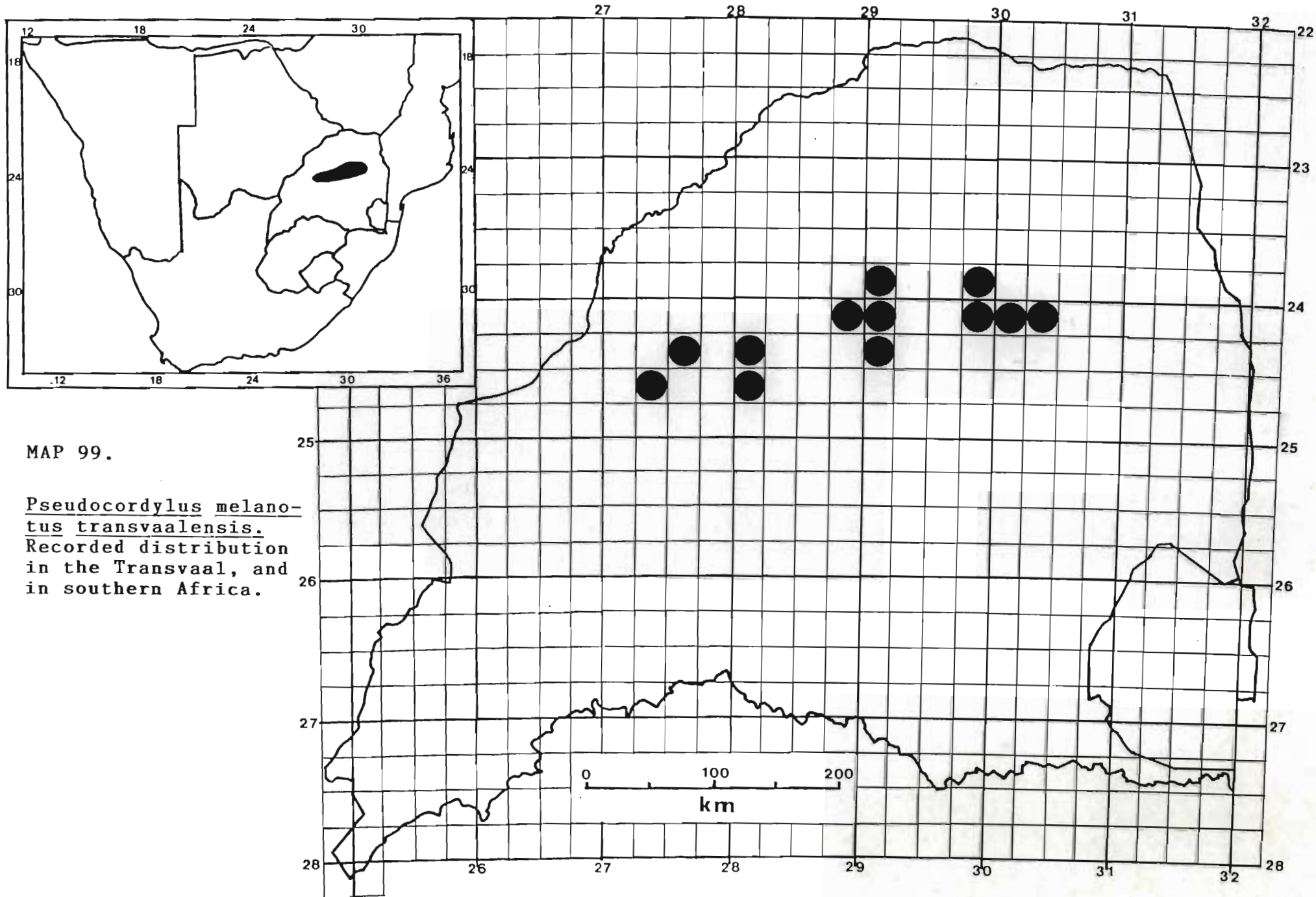
Pseudocordylus melanotus transvaalensis FitzSimons. De
Waal 1978, p. 61; Branch 1988a, p. 170, 1988b, p. 10.

Description. 42 Specimens examined.

Colour: Males dark-olive to olive-yellow above mostly
with 8-9 regular to stepped blackish to black crossbars
which become indistinct in very mature males. Laterally
yellow to olive-yellow including the limbs, which are
also spotted or blotched with black. Tail yellow to
orange dorsally and laterally with regular black
crossbars proximally but merging distally. Head dark
grey-black dorsally, laterally becoming paler in the
chin, gular and anterior throat. Ventrally olive-yellow
to olive with scattered dark infusions. Tail yellow
ventrally. Females olive with dark crossbars. Head
brown with dark markings becoming paler laterally. Tail
extensively barred with black. Ventrally pale olive with
blackish throat.

Lepidosis: Large depressed lizards with very large broad
triangular heads. Limbs and feet well developed and
pentadactyle. Tail broad and depressed at base tapering
to a dark tip. Tail length 53,48-56,96% of total length.
Rostral roughly pentagonal; nostril pierced in ventral
part of nasal almost in contact with 1st upper labial;
nasals separated by forward projection of frontonasal
(51,72%) or in narrow to broad contact (48,28%);

frontonasal very variable, split (63,41%) or entire (36,58%), in contact with loreals, occasionally an azygous scale is split off from frontonasal posteriorly; prefrontals in contact or separated by azygous frontonasal and/or forward projection of frontal; frontal small slightly longer than wide; frontoparietals in broad contact; anterior parietals in contact anteriorly rarely separated by forward projection of interparietal; anterior parietals also rarely split anteriorly to form two additional scales adjacent to interparietal; posterior parietals large, rounded posteriorly and in broad contact; interparietal small with occasional elongated forward projection. Dorsal temporals 3 and keeled; 1-8 small occipitals present; supraoculars 4; supraciliaries 4; a small postnasal scale rarely budded off from 1st upper labial; loreal 1; preocular 1; subocular 4; 2nd in contact with lip. Lateral temporals in 2-3 (rarely 1) rows and sometimes no rows are discernible as in "microlepidotus"; UL 4 (rarely 3 or 5) anterior to subocular; Mental large broader than long; LL 6; sublabials 5 prs, 1st pair in broad contact behind mental. Dorsals heterogeneous, smallest paravertebrally becoming larger dorsolaterally and largest laterally separated from each other by small granular scales. Dorsals in 39-50 (mostly 43-50) longitudinal rows. Ventrals smooth, rectangular, in 12 (rarely 14) longitudinal rows; limbs covered in imbricate, keeled, slightly spinose scales, with 18-23 subdigital lamellae under 4th toe; femoral pores in males 5-8 (mostly 7 or 8) per side. Caudal scales in whorls, obtusely keeled dorsally, becoming large and proximally spinose, blunter distally. Ventrally caudal scales smooth to obtusely keeled. Caudal autotomy is present with 13/36 (36,11%) of tails showing signs of regeneration.



MAP 99.

Pseudocordylus melanotus transvaalensis.
Recorded distribution
in the Transvaal, and
in southern Africa.

Size: Largest male SVL = 151,0 mm (JN2906 - Flynn 217KS, TM 1695 - Woodbush), mass = 91,5 g (JN 2906); Largest female SVL = 155,0 mm (JN2764A - Mphome 949LS) mass = 100,5 g (N2959A - Percy Fyfe Nature Reserve); Mean male SVL (100,0 mm) = 133,5 mm \pm 10,98 (1SD) n = 9, mass = 62,53 g \pm 15,91 (1SD) n = 9; Mean female SVL (100,0 mm) 134,44 mm \pm 12,63 (1SD) n = 17, mass = 63,2 g \pm 21,81 (1SD) n = 17.

Distribution

Endemic to the Transvaal.

Distribution in Transvaal (Map 99)

Diepgelegen 945LS; Flynn 217KS; Groothoek 278KQ; Hartbeestfontein 281KQ; Houtbosdorp; Makapansgat 39KS; Mariba's Hoek 50KS; Matlalas Location 591LS; Mphome 949LS; Oostenryk 92KS; Paardevlei 201KS; Percy Fyfe Nature Reserve; Rhenosterpoort 402KR; Selati; Serala 5KT; Thabazimbi; Woodbush; Zandspruit 287KR.

Literature Records

Waterberg dist., (NMZB).

Habitat and Ecology

An exclusively rupicolous lizard found only in crevices or under rock on rock on large rocky outcrops. Usually the outcrops are on hillsides or on the crest in grassland. Found mostly in veld types 8 and 20, more rarely in 18 and 67 at altitudes ranging from 1700-2000 m above sea level. With the exception of Cordylus vittifer, which may rarely occupy smaller outcrops in the

same vicinity, the Crag lizards usually occupy the higher reaches of the mountain side, with other Cordylus species such as C. w. breyeri at lower levels. Usually found singly in a crevice, rarely two, while an outcrop may house a family group with females, immatures and juveniles. Their foraging behaviour is the same as that of the nominate species namely a "wait and see" strategy as is typical of most rupicolous species.

Live bearing, from 2-4 young are born during early to midsummer. Gravid females with full term embryos have been recorded in December. The smallest juveniles collected, measuring 69,0-76,0 mm SVL were found during October, November and March.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in three provincial nature reserves. Its habitat of rocky outcrops on isolated mountain ranges and peaks renders it secure provided commercial exploitation is prevented.

Remarks

This species has a disjunct distribution, which is a relict of a former widespread occurrence and appears to justify the explanation made by Broadley (1964) that the genus Pseudocordylus displays a "centrifugal speciation" in which the extremes of the population retain primitive characteristics. This is substantiated by the very large size of transvaalensis, the very irregular nature of the temporals, which in 28,57% of specimens is heterogeneous while the remainder have temporals ranging from 1-3 rows, and that the head shields are greatly variable. The total unreliability of the head shields in P. melanotus

from one extent of its range to the other is cause for concern. Original descriptions of transvaalensis placed it under microlepidotus to which it also shows affinities. Its isolation from the greater body of Pseudocordylus species by the dry and hot Olifants river gap and the fact that each isolated allopatric population of this form has characters of its own, indicate a time of very long separation dating prior to the development of the gorge through the escarpment. The colour pattern of both melanotus forms is the most consistent factor in separating them. It is also my opinion that these forms are not likely to hybridise if contact between them should ever become likely again. With this in mind, and considering the large range of variation within the morphological characters, it is suggested that this species be given specific status, P. transvaalensis FitzSimons.

Genus Platysaurus A. Smith, 1844

Platysaurus A. Smith, 1844, Ill. Zool. S. Afr. Rept., footnote to Pl. XL. Type: Platysaurus capensis A. Smith by monotypy.

Head and body strongly depressed; limbs well developed; tail moderate, strongly depressed anteriorly. Head shields regular; nostril pierced in the nasal; lower eyelid usually opaque and divided into a longitudinal series of vertical septa, but with a well-developed brille in some species; ear opening large. Dorsal scales small and flat, without osteoderms. Sides of neck covered with granules and usually one or two patches of enlarged smooth to spinose scales; a collar fold, attached mesially; ventrals large, quadrangular, smooth, juxtaposed, forming regular longitudinal and transverse series. Femoral pores well developed in adult males, indicated by small pits in females and juvenile males. Scales on heel and lateral caudals smooth or spinose; digits slightly keeled inferiorly (Broadley, 1978).

The genus Platysaurus exhibits extreme specialization to a rupicolous way of life to the extent that they are unable to cross areas bare of rock, 50 metres wide. They are adapted to taking refuge in very narrow fissures formed by the weathering of rocks such as sandstone, granites and rhyolites. The distribution in the Transvaal is much fragmented by the effects of periods of great rainfall and again aridity assisted by the movement of the aeolian Kalahari sands. Most populations are allopatric with only one case of sympatry known in the Transvaal.

Rapid speciation appears to have and is taking place. Broadley (1978) completed an extensive revision of the genus using the biological species concept. However he did treat closely related allopatric forms as subspecies, a trend which is herewith followed for the sake of continuity and because, until the importance of colour to these lizards has been investigated, there is little point in speculation. Broadley (1978) and Newbery (1981) have discussed aspects of social interactions based on colour and it is likely that colour will form the basis of specific mate recognition particular to a species. Jacobsen & Newbery (1989) have emphasised this character and came to the conclusion that until the significance of the various colour patterns have been determined it will not be possible to determine whether one is dealing with species or subspecies.

On account of the great overlap in morphological characters, confusion has reigned as to the number of species represented. FitzSimons (1943) recognised five species and two subspecies. Independently of the previous work, Loveridge (1944), in his revision of the family Cordylidae, recognised only two species and seven subspecies. New forms were described by FitzSimons (1948) and Loveridge (1953), and Broadley (1978) recognised 11 species with 13 subspecies. Another new subspecies from eastern Botswana was described by Broadley (1980). Jacobsen & Newbery (1989) in a revision of Transvaal Platysaurus have reorganised the taxa on the basis of greater sample size and the discovery of two species occurring sympatrically. They recognise five species in the Transvaal with eight subspecies, of which one has been elevated to specific rank in this manuscript.

Key to the Transvaal species (after Jacobsen & Newbery 1989).

1. Lower eyelid with an entire or singly divided brille 2
Lower eyelid divided by a number of septae .. 5

2. Brille entire; scales on heels and at base of tail spinose 3
Brille divided, except in those specimens from the southern section of the Waterberg rang and foothills where the brille is entire; scales on heels and tail usually non-spinose .. 4

3. Black chin, throat and chest - blue mottling on upper labials in males P. orientalis
fizsimonsi
Green to blue chin and throat with darker markings. Ventrally blue in males P. o.
orientalis

4. Lateral body granules flattened and moderately larger than dorsals. Sides in males blue, but green to orange in immature males P. guttatus
Lateral body granules rounded, raised and markedly larger than dorsals. Sides of body in males, red. Lateral granules \pm 2 x that of P. guttatus P. minor

5. Scales on sides of neck conical to spinose .. 6
Scales on sides of neck flattened. Range: Soutpansberg mountains P. relictus

6. Size large - reaching 90 mm or more in S/V length in adults. Range: N and NE Transvaal 7

- Size small to medium reaching 80 mm or less
in S/V length. Range: NW, E and SE
Transvaal 8
7. Nasals mostly (99%) separate; ventrals
mostly (85%) in 16-18 longitudinal rows.
Range: south of the Soutpansberg to the
Olifants river and its lower tributaries P. i. inter-
medius
- Nasals mainly (82%) in contact; ventrals
mostly (86%) in excess of 20 longitudinal
rows. Range: north of the Soutpansberg ... P. i.
rhodesianus
8. Nasals mostly (68%) in contact. Ventrally
black. Range: Lebombo Mts. P. i. ssp.
nov. (Lebombo)
- Nasals mostly (93%) separate. Ventrally
blue with the exception of P. i. wilhelmi
with chin, throat and chest black 9
9. Ventrals mostly (80%) more than 22 longitudinal
rows. Range: NW Transvaal - foothills
of the Blouberg P. i. ssp.
nov. (Glen
Alpine)
- Ventrals mostly less than 22 longitudinal
rows 10
10. Scales on back markedly heterogeneous.
Range: southern Lowveld P. i. wilhelmi
Scales on back homogeneous 11
11. Femoral pores in males mostly (72%) less
than 17. Throat green or blue in males 12

- Femoral pores in males 17 or more, throat orange in males turning white in preserved specimens. Range: NW. Transvaal - foothills of the Blouberg P. sp. nov. (orange)
12. Frontal narrow and elongate, from 1,5-2,0 times longer than wide. Range: Swaziland, SE Transvaal, N. Natal P. i. natalensis
- Frontal broad and squat, from as broad as long, to 1,5 times as long as broad.
- Range: Blouberg P. i. parvus

Platysaurus guttatus A. Smith, 1849

Platysaurus guttatus A. Smith 1849, Illus. Zool. S. Afr. Rept. App., p. 8. Type locality: Neighbourhood of the Limpopo river near the Tropic of Capricorn. FitzSimons 1943, pp. 478-481 = P. i. intermedius. Jacobsen & Newbery 1989, p. 51, pl. 1; Branch 1988b, p. 10.

Platysaurus guttatus guttatus A. Smith. Loveridge 1944, p. 89 (part); Broadley 1978, pp. 157-158, (part); Welch 1982, p. 114 (part); Branch 1988a, p. 166., pl. 74.

Description. 63 Specimens examined.

Colour: Greyish to blackish-brown above with three pale interrupted longitudinal lines. One extends from the rostral over the middle of the head, along the vertebrae to the base of the tail. Two others, one on each side extend from the supraoculars dorsolaterally fading posteriorly above the hindlimbs. The interstices between the lines spotted in an irregular line with off-white; Head blackish brown with whitish spots along suture

between anterior and posterior parietals. Laterally upper and lower labials yellowish green, temporals blackish-brown tinged with yellow-green to greenish-blue these colours becoming more pronounced along the sides to the groin. Anterior portion of limbs yellow-green to greenish-blue and grey-brown posteriorly and spotted with off-white. Ventrally variable with chin and gulars and upper chest, yellow to dark-blue frequently mottled with greenish-blue to dark-blue. Median chest, belly and base of tail blackish blue. Ventrolaterally yellow, orange, green to greenish-blue, these colours extending onto underside of limbs. Tail brick-red above and brighter below, but overall paler in immature males. Females greyish to blackish-brown above with three pronounced white longitudinal stripes between which are an irregular row of white spots. Limbs spotted with white to off-white. Ventrally white with irregular bluish markings under chin and throat. Belly pinkish brown with dark edged scales mesially.

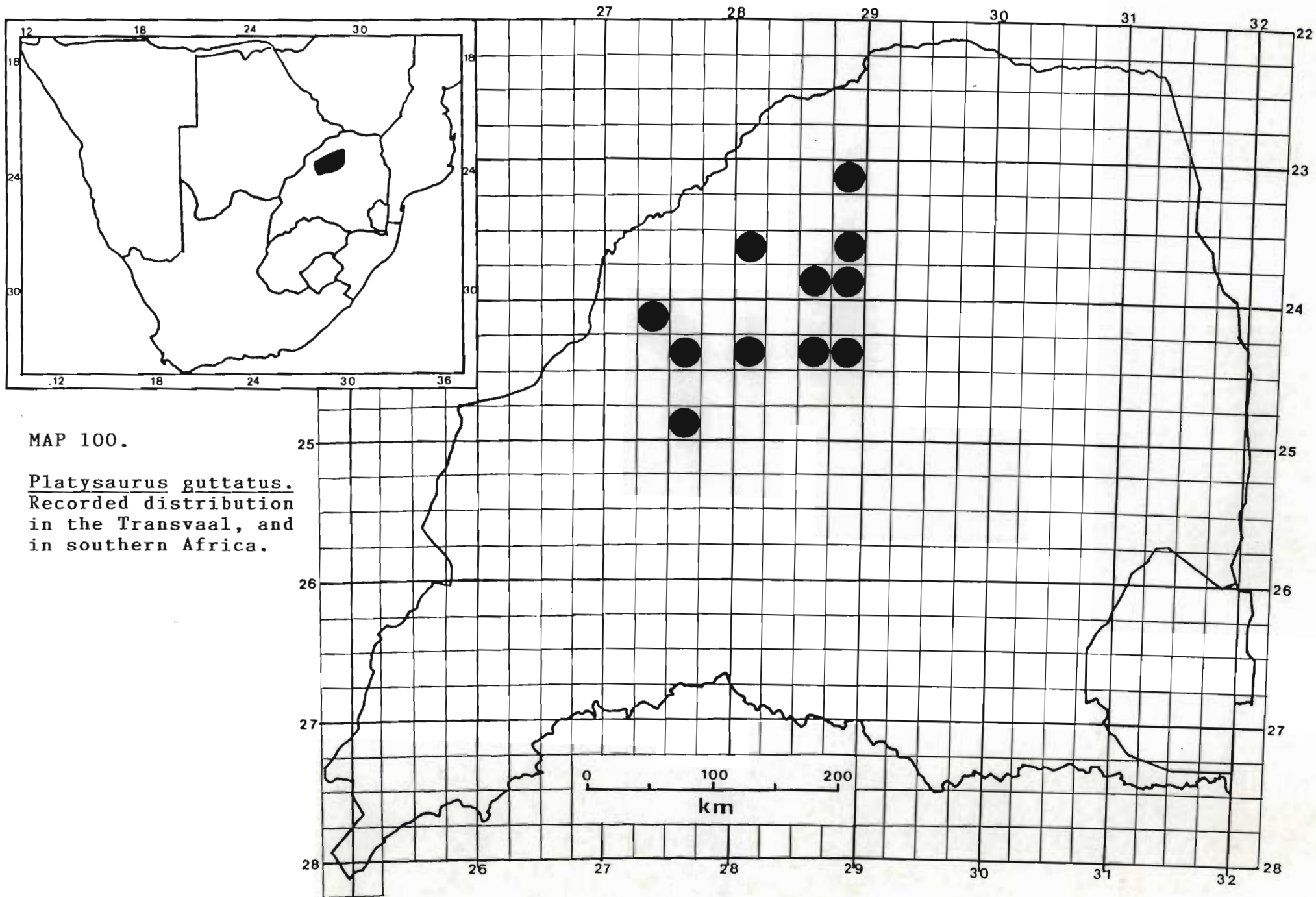
Lepidosis: Specialised very depressed lizards with a triangular head slightly wider than the neck. Body widest anterior to hindlimbs. Limbs well developed and pentadactyle. Tail flattened proximally becoming more rounded and tapering to an obtuse point distally. Tail from 54,30-63,35% of total length. Rostral pentagonal, slightly wider than high; nostril pierced near posterior margin of nasal; nasals 2; supranasals mostly in contact, rarely separated by frontonasal behind rostral; frontonasal much wider than long, in contact with loreal, and postnasals; prefrontals in broad contact; frontal approximately twice as long as broad, narrowing posteriorly; frontoparietals in broad median contact and in contact with 2-3 supraoculars; anterior parietals in narrow contact anterior to interparietal; interparietal pentagonal, longer than broad; posterior parietals

separated by interparietal and occipital rarely in narrow contact. Occipital usually in contact with interparietal rarely separate. Supraoculars 4; supraciliaries 5; loreal 1, elongate; preocular 1; suboculars 4, 2nd borders lip; temporals variable. Lower eyelid composed of an entire brille south of latitude 24 and split to the north of this line; UL 4 anterior to subocular; mental wider than long; LL 4 anterior to subocular. Sublabials in five pairs, 1st in broad contact behind mental. Dorsals small, granular becoming twice as large laterally. Ventrals square to rectangular, in 16-22, mostly 18-20 longitudinal rows; Limbs well developed and pentadactyle, covered with small, subimbricate scales on thighs, becoming keeled on the lower limb, 16-21 (mostly 17-19) subdigital lamellae under 4th toe; tail broad and tapering to a fine tip; scales mostly non spinose at the base, rarely spinose and then only in the south-western foothills of the Waterberg. Caudal autotomy present with 31/57 (54,38%) of tails showing signs of regeneration.

Size: Largest male SVL = 80,0 mm (N2566 - Buffelskraal 486LR), mass = 9,3 g (N2566); Largest female SVL = 73,0 mm (N2576 - Buffelskraal 486LR), mass = 5,9 g (N2667 - Haakdoorndraai 758LR). Mean male SVL = 68,11 mm \pm 6,65 (1SD) n = 30, mass = 5,54 g \pm 1,69 (1SD) n = 26; Mean female SVL = 66,5 mm \pm 3,15 (1SD) n = 25, mass = 4,63 g \pm 0,66 (1SD) n = 25.

Distribution

Endemic to Transvaal although likely to occur in eastern Botswana.



Distribution in Transvaal (Map 100)

Buffelskraal 486LR; Doorndraaidam Nature Reserve;
Haakdoorndraai 758LR; Kareehoek 274LR; Klipfontein
11KQ; Klipplaatdrift 787LR; Mooiwater Estates 145KR;
Nachtwacht 492LR; Sweethome 315LR; Vogelstruisfontein
765LR; Waterval 297KR; Weihoek 540KQ.

Habitat and Ecology

An exclusively rupicolous species, these specially adapted lizards are able to fit into crevices less than 5 mm high. They are extremely agile inhabiting rocky outcrops where the males may be seen displaying their colours. They rarely leave these outcrops and then only to capture prey a short distance away. Diurnal they may be found active at all times of the day with less activity during the midday hours. Usually found in small family groups, consisting of a dominant male, several adult female, immatures and juveniles. Often two or more individuals can be found in a crevice. The species is almost exclusively found only on small rocky ridges and outcrops and not on the Waterberg massif itself, including veld types 14, 18, 19 and 20 at altitudes ranging from 1000-1300 m above sea level. Oviparous, the species lays two white ova during November/December.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. This species has a sporadic distribution in the north western Transvaal. As it appears only to inhabit the smaller rocky ridges and outcrops it is only found in one provincial nature



P. guttatus A. Smith
Klipfontein 11 KQ
2427 AB



P. minor FitzSimons
Monte Christo 388 LR
2328 BC



P.o. orientalis FitzSimons
Haffenden Heights 35 KT
2430 AA



P.o. fitsimensi Loveridge
Lolamontes 686 KS
2429 DC



P. intermedius wilhelmi Hewitt
Broedershoek 129 JU
2531 AC



P. intermedius "lebombo"
Mananga 2531 DD

reserve (Jacobsen et al, 1986). However its status can be considered secure owing to its affinity for rocky outcrops, provided that no commercial exploitation takes place.

Remarks

The type locality of P. guttatus Smith near the Marico-Notwani confluence has so far escaped detection. It is evident from remarks by Broadley (pers. comm.) that the specimen belongs to the south-western parts of the range of P. guttatus as these specimens have entire brilles and more spinose heels and tail than that of more northern specimens. This at least fits in with the type locality. However, whether this locality is in the Transvaal or adjacent Botswana is not known.

P. guttatus Smith has been regarded as conspecific with P. i. intermedius Matschie by FitzSimons (1943) and Loveridge (1944). Broadley (1978) reinstated P. intermedius as a full species but retained P. minor FitzSimons as a subspecies of guttatus and placed P. m. orientalis FitzSimons into synonymy with P. guttatus on the basis of the presence of a brille and the relatively small size of the available specimens.

During 1983, specimens of both P. minor and P. guttatus Smith were found in sympatry on a small rocky hill without any apparent hybridization. This led to the establishment of P. minor as a full species based on sympatry, differences in colour and morphology and habitat. Similarly, while all specimens from the eastern Transvaal escarpment had entire brilles, only a small proportion of specimens from the south western Waterberg district were found to have entire brilles. Most have split brilles. In addition, the eastern Transvaal specimens are characterised by very spiny heels and tail

as well as being green dorsally with no lateral colour streak. These differences as well as achieving a much larger size, justified the reinstatement of P. orientalis FitzSimons as a full species and distinct from P. guttatus Smith (Plate 1).

Platysaurus minor FitzSimons, 1930

Platysaurus guttatus minor FitzSimons 1930, Ann. Tvl. Mus. 15, p. 30, fig. 10. Type locality: Vygeboompoort, Waterberg dist., N. Transvaal. Broadley 1978, pp. 158-160, figs. 10. Broadley 1974, p. 380; Welch 1982, p. 114; Branch 1988a, p. 166, pl. 75.

Platysaurus minor minor FitzSimons. FitzSimons 1943, pp. 474-476, figs. 378-380.

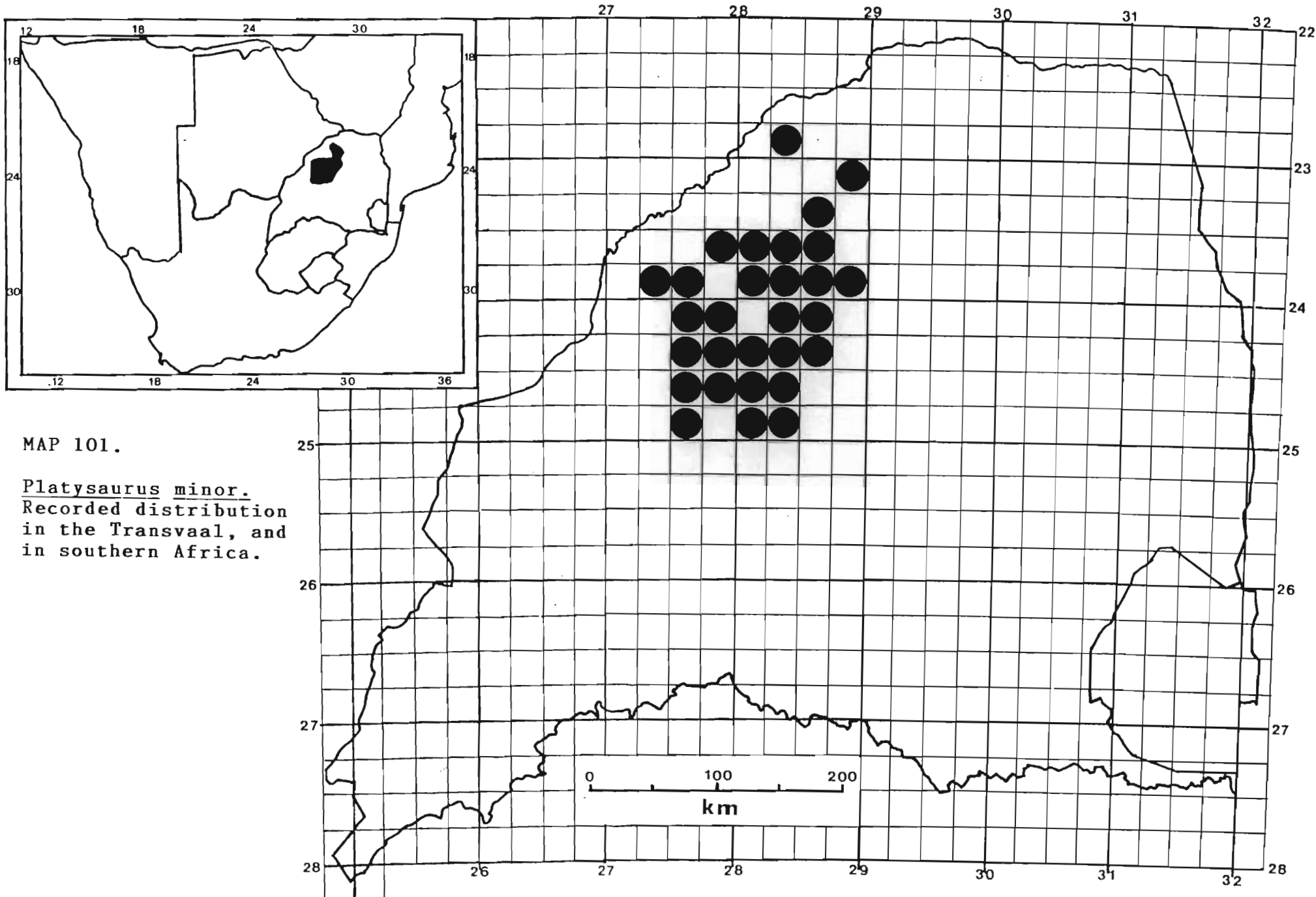
Platysaurus minor FitzSimons. Jacobsen & Newbery 1989, p. 51 pl. 1; Branch 1988b, p. 10.

Description: 269 Specimens examined.

Colour: Head grey-black dorsally, body brownish-black above. Three dorsal stripes extend down the back, frequently in interrupted lines in males but more distinct in females. One line extends from the nostral along the vertebrae to the base of the tail. Two dorsolateral stripes (one on either side) extend from the posterior margin of the supraoculars to above the hind limbs and onto the base of tail. The interstices between the longitudinal lines are irregularly spotted with off-white beginning on the parietals posteriorly along the neck separating into two rows in the middle of the back. Laterally males have upper and lower labials, side of head and neck to the shoulder blue. Along the body between fore and hind limbs is a orange-red streak. Limbs grey-brown with off-white spots. Tail redbrown above. Ventrally males have yellow to blue chin, gular and throat, becoming dark blue-black mesially on the

belly. Ventrolaterally orange-red. Tail bright brick-red below. Females bluish-white below with pinkish brown mesially on the belly with dark edged scales. Ventrally tail pinkish-brown. Chin, gular and throat with darker vermiculations.

Lepidosis: Head and body strongly depressed. Head as wide as or slightly wider than neck. Body widest anterior to hind limbs. Tail very depressed, elongate and tapered. Tail longer than SVL ranging from 56,94 - 62,57% of total length. Rostral pentagonal; nostril pierced near posterior margin of nasal; nasals in contact behind rostral rarely separate; frontonasal much wider than high, entire (rarely split), in contact with large postnasal and loreal; prefrontals in broad contact; frontal longer than broad and tapered posteriorly, frontoparietals in broad contact, overlapping with posterior 2-3 supraoculars; anterior parietals in broad contact (rarely separate) in front of interparietal; interparietal variable rarely with anterior process separating anterior parietals. Posterior parietals mostly separated by interparietal and elongate occipital, occasionally in contact between interparietal and occipital. Two to three superior temporals on each side; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; preocular 1; subocular 4, 2nd and 3rd in contact with (latter occasionally separate from) lip. Lateral temporals flat, approximately homogeneous and irregularly arranged. Lower eyelid divided or entire (south of 24°30'S); UL 4 or 5 anterior to subocular. Mental as broad as long; LL 4-5; sublabials in 5 pairs, anteriormost in broad median contact rarely partially separated. Dorsals granular, homogeneous becoming 2-3 times larger laterally, particularly in males, numbering 66-86 scales across the middle of the back (Broadley, 1978); Ventrally gular



MAP 101.

Platysaurus minor.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

scales rectangular, median row broader than long; ventrals in 16-22 (mostly 17-20) longitudinal rows; and 30-34 regular transverse rows (FitzSimons, 1943). Limbs covered in granules posteriorly and smooth to keeled, imbricate scales anteriorly; digits slender with 17-21 subdigital lamellae under the 4th toe. Heels non-spinose becoming more spinose in the south. Caudal scales in whorls mostly non-spinose, occasionally spinose. Femoral pores in males 12-22, mostly 16-20 on each side. Caudal autotomy evident with 33/86 (38,37%) of tails showing signs of regeneration.

Size: Largest male SVL = 73,0 mm (N2586 - Victoria 532LR), mass = 7,7 g (J1538 - Monte Christo 388LR); Largest female SVL = 70,5 mm (J1547 - Monte Christo 388LR), mass = 5,5 g (J1541). Mean male SVL = 63,02 mm \pm 5,50 (1SD) n = 30, mass = 4,17 g \pm 1,28 (1SD) n = 33; Mean female SVL = 60,19 mm \pm 6,97 (1SD), n = 38, mass = 3,62 g \pm 1,12 (1SD) n = 37.

Distribution

Endemic to the north-western Transvaal.

Distribution in Transvaal (Map 101).

Bergfontein 277KQ; Buffelshoek 277KR; Buffelshoek 446KQ; Buffelspruit 443KR; Buisfontein 451KR; Cyferfontein 434KR; De Villiersdale 313LR; Driefontein 387KR; Fourieskloof 557LQ; Galakwyns Stroom 745LR; Geelhoutkop; Groot Denteren 533LR; Groothoek 278KQ; Groot Nylsoog 447KR; Hanover 181KQ; Klein Denteren 495LR; Macouwkuil 45KR; Malmaniesrivier 236KQ; Malokong 784LR; Monte Christo 388LR; Mooiwater Estates 145KR; Naauwpoort 363LQ; New Belgium 608LR; New York 490LQ; Normandy 312LR; Oatlands 151MR; Rhenosterpoort 283KQ; Rhenosterpoort 402KR; Rhenosterpoort 442KQ;

Rietspruit 412MR; Schrikfontein 715LR; Sterkfontein 282KQ; Sterkriviernedersetting 253KR; Sweethome 315LR; Tafelkop 46KR; Trehowel 133KR; Varkfontein 141KQ; Victoria 532LR; Vygeboompoort 456KR; Weihoek 540KQ; Wildeboschdrift 599LR; Wolwefontein 149KR; Zoetendalsvley 341LR; Zondagsloop 50KR.

Literature Records

13 km NNE of Warmbaths; Rankins Pass; Klipfontein 53 KR (NMZB).

Habitat and Ecology

An exclusively rupicolous species, it inhabits very narrow fissures and crevices under or between rocks, particularly large flakes split from bedrock. Occurs in veld types 14, 18 and 20 at altitudes of 900-2000 m above sea level. Usually found in family groups, with what appears to be a dominant male with several subdominant males, females and juveniles in the same area. Often more than one individual will be found in the same crevice. Frequently found in the company of other lizard species particularly Mabuya quinquetaeniata margaritifera but also Gerrhosaurus v. validus and Pachydactylus bibronii.

Appear to be largely insectivorous but may also consume plant material as recorded for guttatus (Broadley, 1978). Like the other Platysaurus species, it lays two eggs at a time during early to midsummer.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. Owing to its fairly limited

distribution it is only known to occur on two provincial nature reserves. However its rocky habitat is secure and provided no commercial exploitation takes place the species is out of danger.

Remarks

A discussion has already been incorporated under the previous species. Of interest is the fact that southern specimens also exhibit entire brilles and more spinose heels and tail than most of the other specimens. Those with split brilles number 111, those with entire brilles 146. However this is not a reflection of the distribution which can be seen in Map 101. What significance can be attributed to entire or split brilles is unclear, although still being of benefit in separating the guttatus complex from the intermedius complex.

Platysaurus orientalis orientalis FitzSimons, 1941

Platysaurus minor orientalis FitzSimons 1941, Ann. Tvl. Mus. 20, p. 280. Type locality. Sekororo, NE Transvaal. FitzSimons 1943, pp. 476-477.

Platysaurus guttatus orientalis FitzSimons. Loveridge 1944, p. 94.

Platysaurus guttatus guttatus (not A. Smith) Broadley 1978, pp. 157-158 (part); Welch 1982, p. 114 (part).

Platysaurus orientalis orientalis FitzSimons. Jacobsen & Newbery 1989, p. 51, pl. 1; Branch 1988b, p. 10.

Description. 122 Specimens examined.

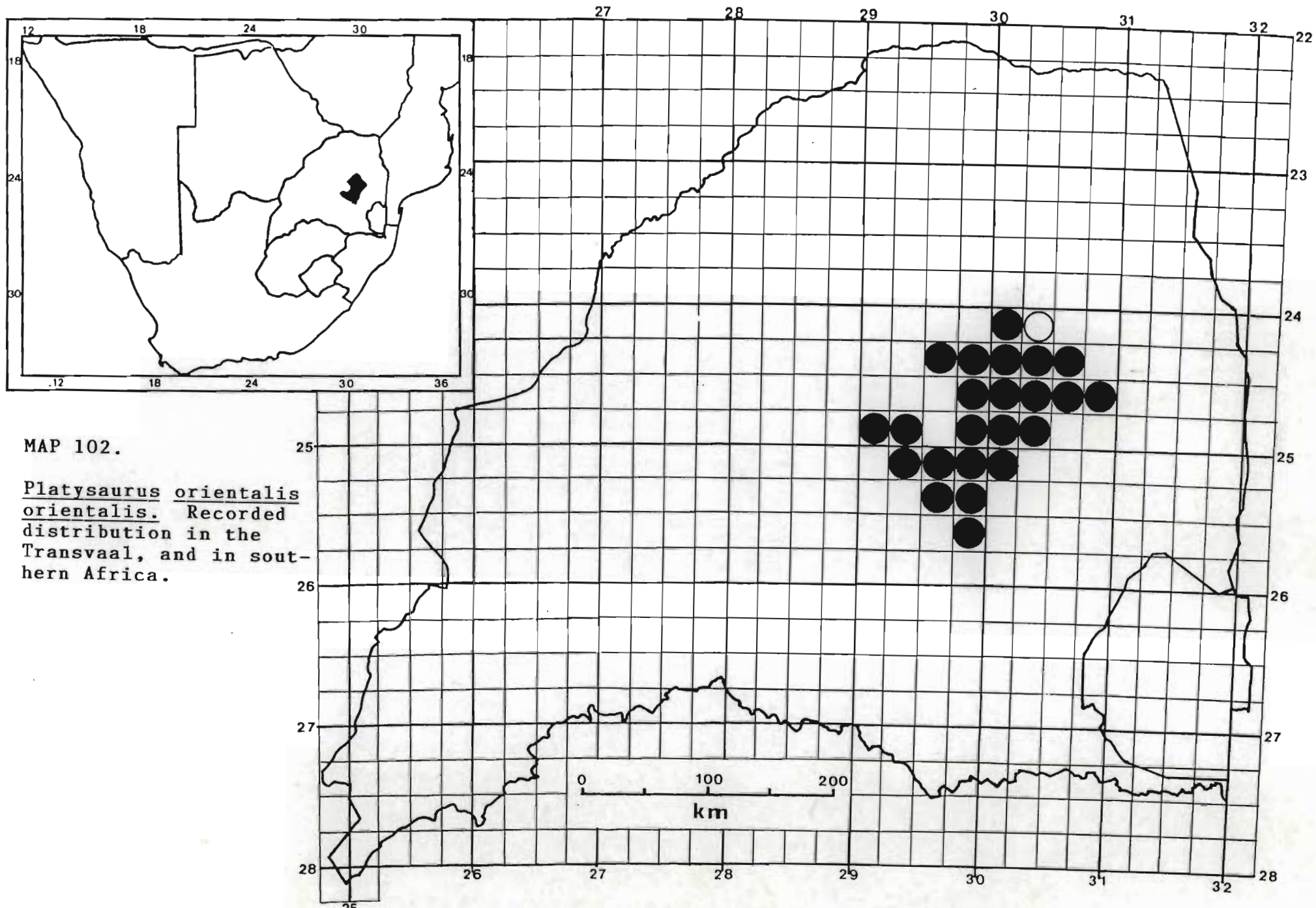
Colour: Males green dorsally with a single paler vertebral stripe extending from the rostral to the base of the tail. Two pale stripes one on either side extend from the supraoculars to the rear of the head. Median back darker paravertebrally becoming paler laterally.

Dorsum heavily spotted to faded in older individuals. Anterior limbs green dorsally, hind limbs green anteriorly becoming reddish-brown dorsally and posteriorly. Tail red-brown above fading to greyish-brown distally. Ventrally, males have blue to green chin, gular and throat spotted and variegated with dark-blue to blue-green; chest blue-green to blue becoming darker blue posteriorly; ventrolaterally blue-green to green which colour also extends onto underside of limbs. Hind part of thighs tinged with brick-red and the tail is bright brick red. Females are uniform grey-black to black dorsally with three pronounced white longitudinal stripes extending down the back. Median stripe extends from rostral along the vertebrae onto proximal end of tail; the dorsolateral stripes (one on each side) extend from the supraoculars to the sacral region merging into the base of the tail. Laterally some paler mottling is found between the front and hind limbs. Limbs are black with brownish blotches, spots and variegations. Tail grey-black mesially becoming grey-brown distally. Laterally pale pinkish brown. Ventrally females have a pale bluish-white to yellowish chin, gular and throat with darker mottling. Chest and abdomen pale pinkish-brown becoming more intense distally. Scales on belly irregularly dark edged and in some specimens intensely marked. Limbs also pale pinkish-brown below. Tail pinkish-brown striped with brownish-black.

Lepidosis: A depressed lizard with the head in males somewhat triangular. Head as wide or wider than neck. Body widest posteriorly. Limbs stout, feet pentadactyle. Tail longer than SVL ranging from 59,37 - 64,06% of total length. Rostral pentagonal; nostril pierced near posterior margin of nasal; nasals in narrow contact rarely separate behind rostral; frontonasal broader than

long, in contact with postnasal and loreal; prefrontals in moderate to broad median contact behind frontonasal; frontal, hexagonal, short, longer than broad and tapering posteriorly; frontoparietals in broad median contact and also with posterior 2-3 supraoculars; anterior parietals abutt onto posterior supraoculars, and in narrow to broad contact anterior to interparietal; interparietal longer than broad, in contact with occipital rarely separated by posterior parietals or an additional azygous scale. Posterior parietals large, separated (rarely in narrow contact behind interparietal); 3 superior temporals present; supraoculars 4; supraciliaries 4; postnasal 1, loreal 1, preocular 1; 4 suboculars, 2nd (rarely 3rd also) in contact with lip. Lateral temporals in two rows, the lower conical. Lower eyelid with an entire brille; UL 4 exceptionally 5 anterior to subocular; mental as broad to narrower than long; LL 5 (rarely 4) sublabials in 5 pairs, anterior pair in broad to narrow median contact; gular scales small, rectangular and in 19-22 rows between posterior sublabials (FitzSimons, 1943), median row from broader than long distally to longer than broad proximally; Dorsals more or less homogeneous granules. Ventrals broader than long, smooth and in 18-26, mostly 18-22 longitudinal rows at midbody. Scales on tibia and forearm strongly keeled; heels of hindfeet spinose, and 16-23 (mostly 18-20) subdigital lamellae under 4th toe. Caudal scales in whorls - spinose distally, slightly keeled above and smooth below. Femoral pores in males ranging from 13-23 (mostly 18-20) per side. Tail regeneration common with 36/103 (34,95%) showing signs of regeneration.

Size: Largest male SVL = 82,0 mm (J6867 - Draaikraal 48JT), mass = 12,0 g (P10925 - Diepkloof 44JS); Largest female SVL = 75,0 mm (J6870 - Draaikraal 48JT), mass = 8,8 g (N9072 - Diepkloof 44JS). Mean male SVL = 70,89 mm



MAP 102.

Platysaurus orientalis
orientalis. Recorded
 distribution in the
 Transvaal, and in south-
 ern Africa.

$\pm 7,30$ (1SD) $n = 32$, mass = $6,63$ g $\pm 2,44$ (1SD) $n = 32$;
Mean female SVL = $66,42$ mm $\pm 4,74$ (1SD), $n = 33$; mass =
 $4,97$ g $\pm 1,47$ (1SD) $n = 33$.

Distribution

Endemic to east-central Transvaal.

Distribution in Transvaal (Map 102).

Abel Erasmus Pass; Beletlwa; Blyde River Nature Reserve; Bourke's Luck; California 228KT; Dal Josephat 461KS; De Bad 396KT; De Beer 448KS; De Lagersdrift 178JS; Dientje 453KT; Diepkloof 44JS; Diepkloof 186JS; Doornkop 356JS; Draaikraal 48JT; Ga-Mphahlele; Government Ground 846KS; Haffenden Heights 35KT; Holfontein 125KT; Kalkfontein 367KT; Kgoloko Lokasie; Leeuwfontein 750KS; Maandagshoek 254KT; Mapochs Gronde 500JS; Mapoch Mine; Mecklenburg 112KT; Mohlaletsi; Mtsweletau; Perkeo 223KT; Praktiseer 275KT; Rietfontein 440KT; Steynsdrift 147JS; Swartkoppies 217JS; Tivoli 98KT; Vlakfontein 723KS; Zeekoegat 421KS; near Strydom Tunnel.

Literature Records

Sekororo (FitzSimons 1943). Wolkberg wilderness area (Snyders 1987).

Habitat and Ecology

An exclusively rupicolous species, it occurs along the Transvaal Drakensberg and other ranges fringing the eastern part of the bushveld basin. Found chiefly on rocky outcrops, living in crevices between rocks,

frequenting both horizontal as well as vertical ones even those along the cliffs edge overlooking the lowveld. Usually observed basking on boulders in veld types 8, 12, especially 18 and 19, 57 and 61 at altitudes of 700-1700 m above sea level. Little has been recorded on the diet of the species, one individual was recorded feeding on Lepidoptera larvae. Like other Platysaurus species, orientalis is oviparous laying two eggs measuring at full term 17,0 x 7,5 - 8,5 mm during October. Interestingly, copulation was observed in the same month.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. A somewhat localised, sporadic species it is only known to occur in the Blyde River nature reserve. Although only afforded limited protection it inhabits rocky ridges, hills and outcrops and can be considered secure. Most of its distribution is centred in Sekhukhuniland, but provided commercial exploitation is kept to a minimum it is out of danger.

Remarks

A species distinct and disjunct from P. guttatus and P. minor, it exhibits variations in size from mostly small along the escarpment, to larger in western populations fringing and allopatric with P. o. fitzsimonsi Loveridge. Broadley (1978) retained fitzsimonsi as a full species on the basis of size. However orientalis reaches a similar size and surrounds the distribution of fitzsimonsi being in some instances parapatric with it. It is clear that apart from dorsal and especially ventral colouration little morphological differences exist. On these grounds P. fitzsimonsi is considered to be a subspecies of P. orientalis (Plate 1).

Platysaurus orientalis fitzSimonsi Loveridge, 1944

Platysaurus guttatus fitzSimonsi Loveridge 1944, Bull. Mus. Comp. Zool. Harv. 95, p. 88. Type locality: "Lydenburg", Transvaal (= Schoonoord farm, Sekukuni mountains, about 55 km NW of Lydenburg).

Platysaurus fitzsimonsi Loveridge. Broadley 1978, p. 160; Welch 1982, p. 114; Branch 1988a, p. 165, pl. 74.

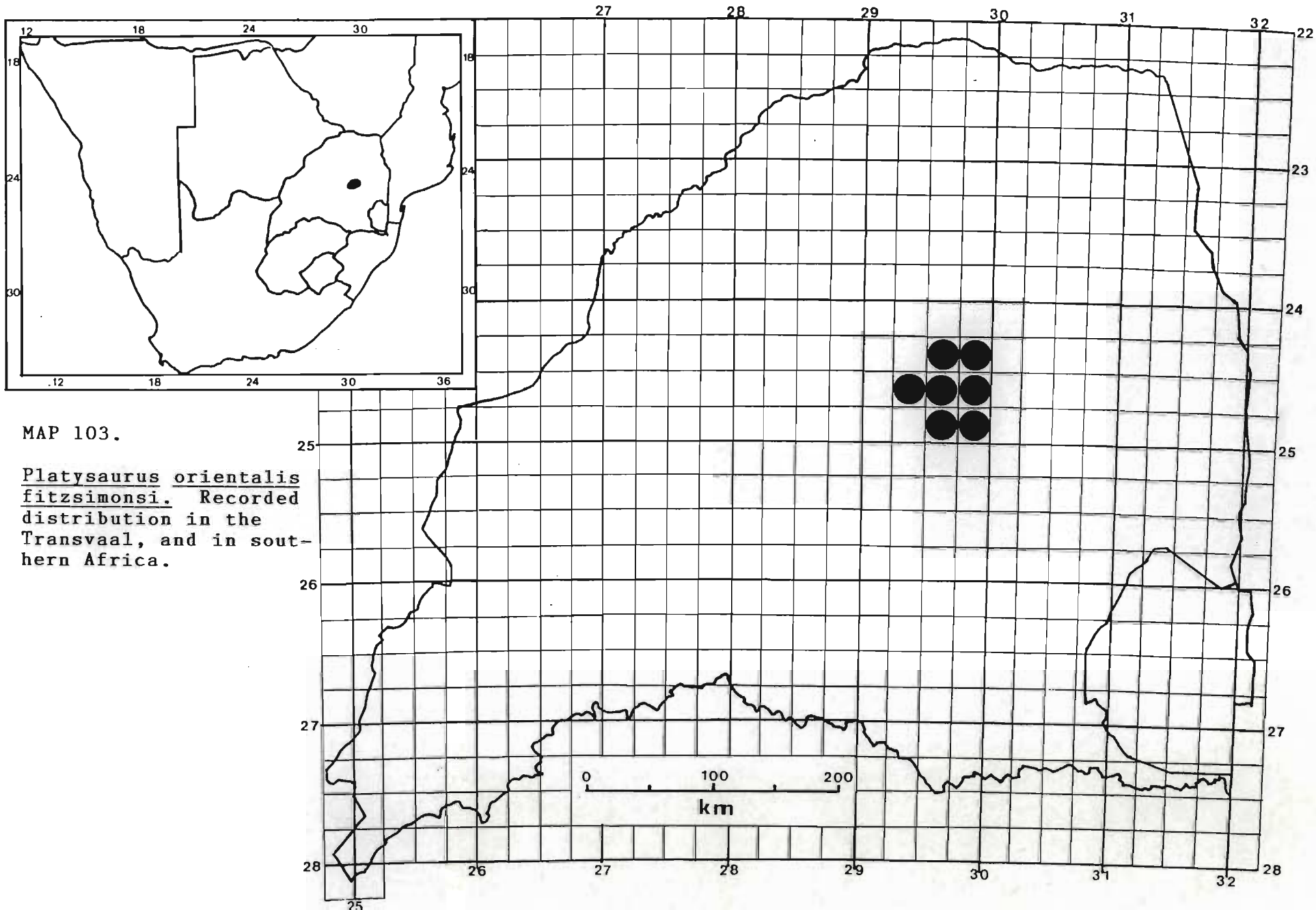
Platysaurus orientalis fitzSimonsi Loveridge. Jacobsen & Newbery, 1989, p. 51, pl. 1; Branch 1988b, p. 10.

Description. 46 Specimens examined.

Colour: Males green above with a pale green vertebral stripe extending from the rostral posteriorly onto the base of the tail; Head dark greenish black with a pale interrupted line from the nasals to the back of the head thereafter becoming diffuse. Dorsum heavily spotted with pale green. Forelimbs green with dark spots, hind limbs green anteriorly, reddish posteriorly; Tail brick-red; Ventrally chin, gular and throat black, with labials and sublabials barred with green or blue in less mature individuals. Black spotting and irregular barring also present on ventrals in very mature males, which are mostly a dark blue, becoming paler blue on the underside of the limbs. Underside of tail bright reddish brown. Females black dorsally with three distinct white stripes extending down the back. A median stripe extends from the rostral down the back ending in a faint interrupted line on the tail; Two dorsolateral stripes extend (one on each side) from the posterior margin of the supraoculars to the dorsolateral sides of the tail. Laterally the sides of the head black, with a white streak from below the eye over the temporals to above the ear. Upper and lower labials barred with greyblack and blue. Sides of body between fore and hind limbs grey

with scattered pale spots. Limbs grey brown to black with black and off-white spots. Tail brown-black mesially tapering off near the middle of the tail. Laterally pale straw- to pinkish-brown as is the terminal half of the tail. Ventrally chin, gular and throat pale blue to blue with darker variegations. Chest and belly pale blue anteriorly becoming pinkish posteriorly with variable numbers of black edged scales. Underside of tail pinkish to straw-brown.

Lepidosis: Large depressed lizards with head equal to or smaller than neck. Body widest anterior to hind limbs. Tail depressed and longer than SVL being 59,03 - 65,90% of total length. Rostral pentagonal, wider than high; nostril large and pierced near posterior margin of nasal and directed backwards; nasals in broad to narrow contact behind rostral, rarely separated; frontonasal much broader than long, in contact with postnasal and loreal, a small posterior azygous scale may bud off from frontonasal; prefrontals in broad to narrow median contact, and in contact with loreal and preocular; frontal small, longer than wide and tapering posteriorly; frontoparietals in broad median contact and with 3 posterior supraoculars; anterior parietals in broad contact separating interparietal from frontoparietals; interparietal variable usually in contact with the elongate occipital, rarely separated. Posterior parietals large usually separated, rarely in narrow contact behind interparietal; 3-4 superior temporals; supraoculars 4; Supraciliaries 4; postnasal 1 small; loreal 1, small; preocular 1; suboculars 4, 2nd and 3rd in contact with lip or separated by a small scale; two rows of temporals; UL 4 or 5; lower eyelid with transparent brille; Mental broader than long; infralabials to subocular 5; Sublabials 5 pairs, anterior in broad median contact; Dorsals small,



MAP 103.

Platysaurus orientalis
fitzsimonsi. Recorded
distribution in the
Transvaal, and in south-
ern Africa.

homogeneous 74-84 (Broadley 1978), laterally enlarged; Ventrals in 20-26 (mostly 22-26) longitudinal and 38-43 transverse rows; Heels of hind limbs spiny and lamellae under fourth toe 17-23 (mostly 19-21); femoral pores in males 16-25 (mostly 18-21). Caudal scales in whorls on tail, slightly spinose laterally, flat to slightly keeled dorsally, smooth ventrally.

Size: Largest male SVL = 84,0 mm (N5167 - Wonderboom 532KS), mass = 12,2 g (N5126 - Sekwati 765KS); Largest female SVL = 75,0 mm (N5127 - Sekwati 765KS), mass = 8,15 g (N5092 - Potosenyane). Loveridge (1944) examined a male measuring 91,0 mm SVL while Broadley (1978) records a female with a SVL of 74,0 mm. Mean male SVL = 75,47 mm \pm 9,34 (1SD) n = 31, mass = 8,91 g \pm 2,50 (1SD) n = 29; Mean female SVL = 70,10 mm \pm 4,55 (1SD) n = 15, mass = 6,08 g \pm 1,37 (1SD) n = 15.

Distribution

Endemic to east central Transvaal.

Distribution in Transvaal (Map 103).

De Oude Stad van Sekwati 765KS; Klipheuwel 573KS; Klipheuwel 735KS; Lolamontes 682KS; Maleshwane; Masleroems Oude Stad 840KS; Mhapatle; Potosenyane; Vergelegen 819KS; Weltevreden 822KS; Wonderboom 532KS.

Habitat and Ecology

A very localised species restricted to low-lying rocky ridges in eastern Sekhukhuniland. Exclusively rupicolous, it inhabits crevices between rock on rock or under exfoliating slabs of granite. Usually observed basking on boulders during the day in veld types 18 and 19 at altitudes ranging from 900-1500 m above sea level.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. A restricted form only found in a small area of Sekhukhuniland and not in any provincial nature reserve. However as its habitat consists of rocky outcrops it is likely to be secure provided no commercial exploitation takes place. This species should be monitored and details of population size and structure obtained.

Remarks

Loveridge (1944) described fitzsimonsi as a subspecies of guttatus (= intermedius) on the basis of its large size, black gular and throat as well as having 5 supraciliaries and enlarged temporals in 3 rows. Broadley (1978) pointed out that these diagnostic characters are unsatisfactory. His findings are substantiated here, most specimens having four supraciliaries, two rows of enlarged temporal scales and specimens of orientalis becoming almost as large as that of fitzsimonsi. An examination of the distribution pattern of P. orientalis shows that it surrounds that of P. fitzsimonsi. Remarks on the similarity in size and morphology between these two species mentioned under orientalis indicate a close relationship.

The type locality, Lydenburg, is well away from the distribution of fitzsimonsi by a distance of about 50 km. km, and should be Schoonoord 326KT.

Platysaurus relictus Broadley, 1976

Platysaurus relictus Broadley 1976, Arnoldia (Rhod.)

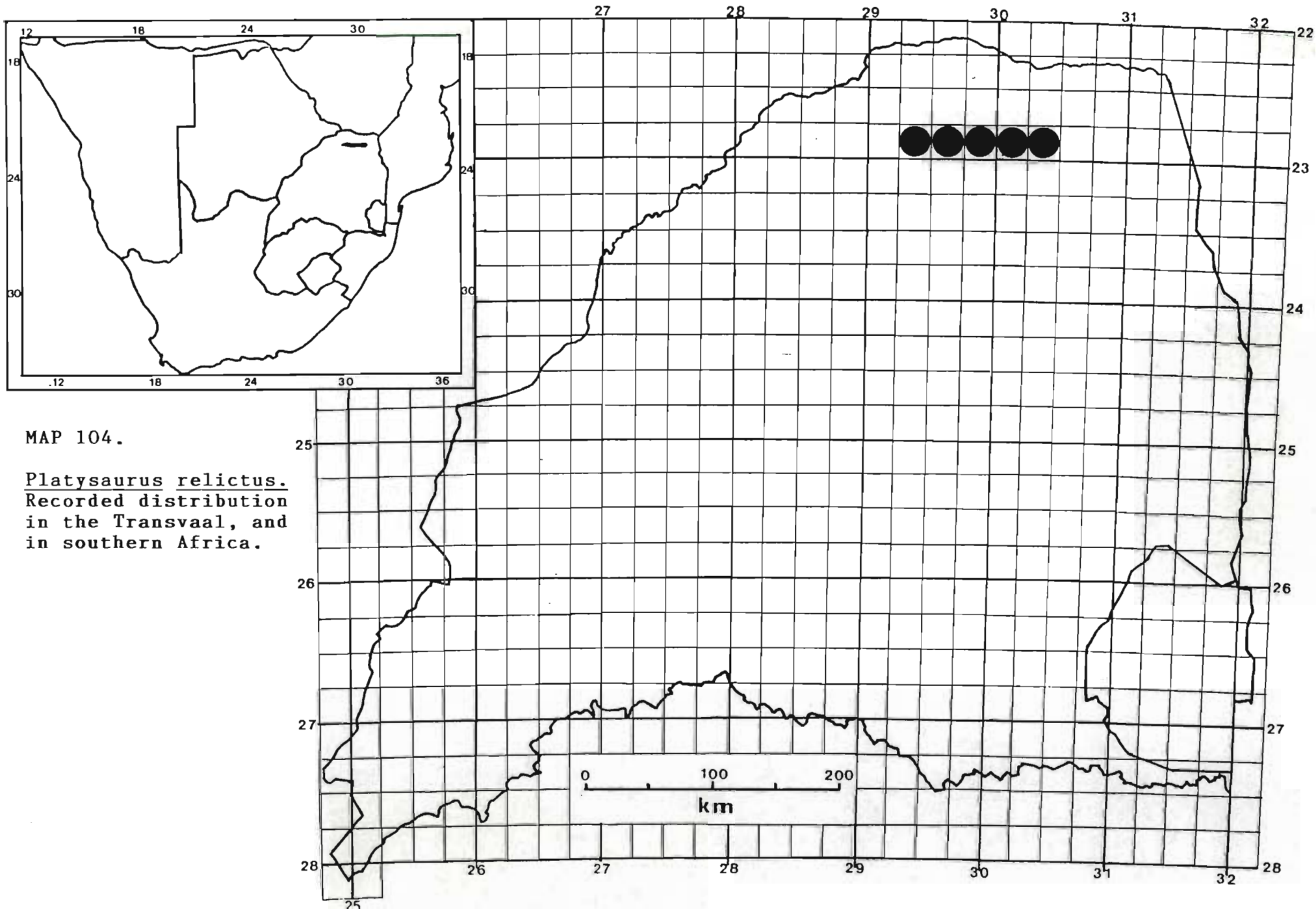
8(8), pp. 1-2. Type locality: Waterpoort, Soutpansberg dist., N. Transvaal. Broadley 1978, pp. 160-161. Welch 1982, p. 115; Branch, 1988a, p. 168, pl. 74, 1988b, p. 10.

Description. 73 Specimens examined.

Colour: Males blue-green, occasionally green dorsally with three paler stripes on the head, one mesially extending from rostral onto base of neck, one on either side over the supraoculars. In some specimens a thin interrupted vertebral stripe present and in others up to four thin indistinct stripes may be found. Dorsum of head spotted with blue or green while the back is heavily spotted mesially becoming less distinct laterally. Limbs blue or green fairly spotted. Tail red-brown. Ventrally chin, gular and throat blue with darker blue to black spots. A complete to incomplete black collar is present, or absent. Upper chest bright blue becoming darker mesially and posteriorly. Inside of limbs light-blue to blue. Tail orange-brown. Females grey-brown to blackish-brown above with three distinct dark edged stripes, the median extending from rostral onto the base of the tail; a dorsolateral stripe extends from behind the supraoculars to the sacral region where the lines become more diffuse and interrupted. Area between the stripes with one to two rows of off-white spots which are faded in some specimens. Limbs grey-brown and faintly spotted; tail brownish-straw coloured. Ventrally chin, gular and throat yellow to bluish-white with dark blue markings, the pale blue extending onto the upper chest. Lower chest and abdomen pinkish brown with dark edged scales along the sutures. Limbs pale blue below; Tail orange-brown proximally, pale orange-brown distally.

Lepidosis: Small very depressed lizards with head triangular as wide or slightly wider than the neck; Body

widest posteriorly; Limbs well developed with slender toes; Tails much longer than SVL and between 58,66 - 65,48% of total length. Rostral pentagonal, broader than high; nostril large and pierced near posterior margin of nasal; nasals widely separated behind rostral; frontonasal wider than long, in contact with postnasal and loreal; prefrontals in broad mesial contact; frontal small, longer than broad and tapering posteriorly; frontoparietals in broad median contact and with 3 posterior supraoculars; anterior parietals in broad contact anteriorly but notched posteriorly; interparietal in contact with or separated from occipital; posterior parietals large and in narrow contact or separated. 3 Superior temporals present; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1, elongate; preocular 1; suboculars 4, 2nd and 3rd in contact with, or latter narrowly separated from lip; Lower eyelid subdivided by a number of septae and semi-transparent. UL usually 4 occasionally 5; Mental wider than long; LL anterior to subocular 4-5; sublabials 5, anterior pair in broad to moderate median contact; gulars between posterior sublabials 21-26, the median row transversely enlarged (Broadley 1978); Dorsals small, granular and 88-104 at midbody (Broadley 1978) not enlarged laterally. Scales on sides of neck enlarged, rounded to feebly conical; collar present with 9-13 plates. Ventrals square to rectangular and in 16-21 (mostly 18 or 19) longitudinal and 38-42 transverse rows. Limbs well developed, non spinose heels, digits slender with 18-22 (mostly 18-20) subdigital lamellae under the 4th toe. Caudal scales in whorls, smooth dorsally, keeled but non spinose laterally and smooth ventrally. Femoral pores in males ranging from 16-22 (mostly 18-20) per side. Caudal autotomy evident with 27/68 (39,71%) of tails regenerating.



MAP 104.

Platysaurus relictus.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Size: Largest male SVL = 73,0 mm (J2209 - Parkfield 725MS), mass = 6,6 g (N11637 - Peover 772MS); Largest female SVL = 70,0 mm (N7600 - Bristol 760MS), mass = 6,3 g (N7600). Mean male SVL = 66,5 mm \pm 5,10 (1SD) n = 25, mass = 4,66 g \pm 1,20 (1SD) n = 24; Mean female SVL = 58,61 mm \pm 9,50 (1SD) n = 14, mass = 2,97 g \pm 1,34 (1SD), n = 14.

Distribution

Endemic to the Soutpansberg, Transvaal.

Distribution in Transvaal (Map 104).

15 km N. of Louis Trichardt; Bristol 760MS; Cliffside 205MT; Crimea 747MS; Entabeni Forest Reserve 251MT; Ladismit 761MS; Parkfield 725MS; Peover 772MS; Robertson 748MS; Rochdale 700MS; Serolle 204MT; Smithfield 456MS; Waterpoort; Zoutpan 459MS.

Habitat and Ecology

Found only on rocky outcrops along the Soutpansberg from the western tip to as far east as Entabeni. It is found on the crowns of the ridges as well as north-facing slopes along all the ranges of the Soutpansberg in veld types 14 (rarely), 19 (mostly) and 20 at altitudes of 800 - 1600 m above sea level. The species is oviparous with one to two eggs laid during mid- to late summer. Usually seen basking on rocks and on sheets of bedrock quickly taking refuge in crevices of exfoliating rock and between rock on rock. Quick and alert, they dash about from place to place the dominant males showing off their colours, while the subadults, females and juveniles move about freely.

Conservation Status (RDB 1988, Restricted)

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. As this species is endemic to the Soutpansberg it is only found in one provincial nature reserve. However its habitat and distribution renders it secure. In the past large scale exploitation of these lizards and in particular males in the Waterpoort area took place but this has been halted.

Remarks

This is a distinct species although the neck scales may on occasions be rounded and even feebly conical. In colouration, the very variegated dorsum in males is distinct. The lateral neck scales are often pitted, a feature not seen in other species.

Platysaurus intermedius intermedius Matschie, 1890

Platysaurus intermedius Matschie 1890, Zool. Jahrb. Syst. V. p. 606. Type locality: Mphome, nr Haenertsburg, N.E. Transvaal.

Platysaurus guttatus guttatus A. Smith. FitzSimons 1943, pp. 478-481, figs. 382-384; Loveridge 1944, p. 89 (part).

Platysaurus intermedius intermedius Matschie. Broadley 1978, pp. 166-168, fig. 12; 1974, p. 380; Pienaar 1966, p. 112, pl. 44 & 45; 1978 p. 89; Welch 1982, p. 114; Pienaar et al 1983, p. 99, pls. 38 & 38A; Branch 1988a, p. 166, pl. 75, 1988b, p. 10.

Description. 207 Specimens examined.

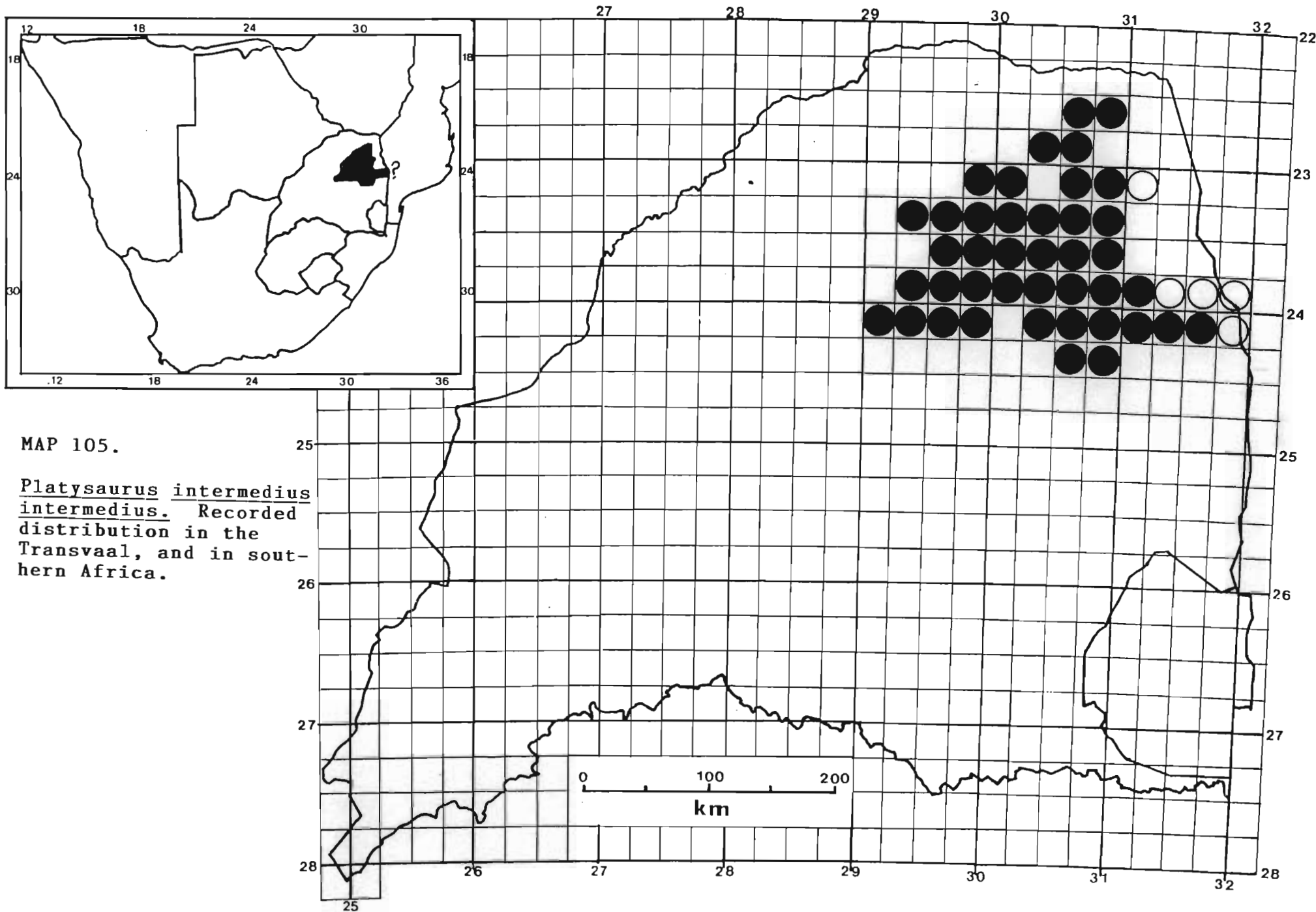
Colour: Males in varying shades of green above, from dark green to yellow-green with paler spots of varying frequency and intensity. Head blackish-green with three green stripes, one from rostral to occiput, two (one on each side) from supraoculars to rear of head. Some

specimens without stripes on head. Laterally upper labials green and blackish alternately or uniform yellow-green. Dark-green to yellow-green along the sides. Limbs grey-brown, with pale spots becoming green to blue anteriorly. Tail orange red-brown. Ventrals blue or green under chin, throat and upper chest becoming darker blue on the abdomen. Tail orange-red. Female grey-brown dorsally with three distinct longitudinal stripes down the back. Median stripe extends from rostral to sacrum and is broad on the head but thins down posteriorly; dorsolateral stripes (one in each side) extend from the posterior supraoculars to the base of the tail where they merge with the lateral colour of the tail. The stripes are pale green anteriorly becoming brownish-white to straw-coloured posteriorly. The area between the stripes is speckled or spotted with beige. Laterally grey-brown with dark and light mottling. Limbs grey-brown with dark brownish-black and beige mottling and spotting. Tail greybrown mesially; laterally straw coloured and also straw coloured ventrally. Ventrally chin and throat bluish-white with dark blue to black blotches and variegations, with or without a broad black collar. Chest and abdomen bluish-white with darker blue mesially on the abdomen. Ventral scales irregularly dark edged. Underside of limbs blue with or without spotting or oblique stripes.

Lepidosia: Large depressed lizards with head as broad or slightly broader than neck; widest posteriorly and limbs stout and well developed. Tail depressed proximally becoming more rounded distally; longer than SVL ranging from 58,38 - 63,43% of total length. Rostral large, almost as long as broad and roughly pentagonal, extending strongly posteriorly; nostral pierced near posterior margin of nasal; nasals separated by rostral; frontonasal broader than, to as broad as long, in contact

with postnasal and loreal; prefrontals in broad median contact, large and in contact with postnasals and loreals; frontal small, longer than broad and tapering slightly posteriorly; frontoparietals in broad contact, mesially and with posterior supraoculars, rarely separated by anterior parietals. Anterior parietals smaller than posterior parietals but in broad contact anterior to interparietal. Interparietal large and separated by posterior parietals (80,58%) from, rarely in contact with, occipital (19,42%); 3 superior temporals; supraoculars 4; postnasal 1; loreal 1; preocular 1, large; suboculars 3, 2nd in contact with lip, 3rd in narrow contact with or more rarely separated from the lip. Temporals in two rows, largest uppermost; lower eyelid opaque and subdivided; UL 4 anterior to subocular; Mental large as long or slightly longer than broad; LL 4-5 anterior to subocular; sublabials 5 prs, anterior most in broad contact; Gulars between posterior sublabials 17-32 (Broadley, 1978). Dorsals granular approximately homogeneous; lateral scales, rounded and much larger than dorsals; scales at midbody 74-94 (Broadley, 1978); scales on neck enlarged and conical, occasionally bluntly spinose; Ventrals smooth, in 14-22 (mostly 16-18) longitudinal and 34-40 transverse rows; Lamellae under 4th toe 16-22 (mostly 18-20); femoral pores 13-21 (mostly 17-19) on each side; Tail scales in whorls, feebly keeled dorsally, strongly keeled and spinose laterally and smooth to obtusely keeled ventrally. Caudal autotomy apparent with 42/90 (46,67%) of tails regenerating.

Size: Largest male SVL = 95,0 mm (JN2926 - Moleps Location), mass = 22,5 g (JN2926); Largest female SVL = 86,0 mm (N3043 - Palmietfontein), mass = 13,9 g (J4755 - Riverhead 755LT). Mean male SVL = 84,21 mm \pm 8,06 (1SD) n = 52, mass = 14,27 g \pm 4,28 (1SD) n = 52; Mean female SVL = 72,83 mm \pm 9,35 (1SD) n = 52, mass = 8,33 g \pm 2,91 (1SD) n = 52.



Distribution

Endemic to the Transvaal.

Distribution in Transvaal (Map 105)

46 km N. of Pietersburg; 13 km W. of Venice 40KU; Altyd Mooi 379LT; Clearwaters, Haenertsburg; Amsterdam 116LS; De Gladde Klipkop 763LS; Duivelskloof 436LT; Enkeldoorn 906LS; Goedehoop 31KS; Gravelotte; Grietjie 12KU; Houtbosdorp; Humansrust 192KS; Jachtdrift 190LT; Ka Khayi; Ka Mininginisi; Kasteel 766LT; Khavagari Mountain; Klipbank 406LS; Klipheuwel 573KS; Langalanga 141KT; Lavhengwa Hills; Ledzee 559LT; Letsitele; Liamule Hill; Lillie 148KT; Maiepo, Letaba Drift; Mangombe; Masogoro Hill; Matangari; Mbandywe Dam; Melkboomfontein 919LS; Middlesex 205KT; Modjadjes Location 424LT; Mokeetsi; Molepos Location 187KS; Mutshenzheni; NE slopes of Tshamavhudzi Peak; Onverwacht 1311LS; Paardekraal 135LT; Pade Hill; Palmietfontein 24KS; Paardekraal 135LT; Percy Fyfe Nature Reserve; Phayizani; Pietersburg; Rietfontein 1029LS; Riverhead 755LT; Rivola Hill; Scheiding 746LT; Schiettocht 25LU; Schilderkrans 1041LS; Shiluwane; Sionwe Mountain; Smitskraal 788LS; The Grange 471LS; The Oaks 198KT; Thabajwane Camp, Ben Lavin NR; Venice 40KU; Vhurivhuri Plantation; Turfloop 987LS; Woodbush; York 188KT; Zeekoegat 12KU; near Mokeetsi.

Literature Records

Bangu gorge; Sundweni spruit, Shangoni section; Mbulweni sandstone reef; Matilölo koppies; Mahulule kop; Hlanganine sandstone reef; at various points in the broken country along the lower reaches of the Mulalane spruit; Olifants river gorge; Tulamila ridge,

Mshatu kop; Boesmanklip dam site, (Pienaar et al 1983).
8 km N. of Munnik; 6 km S. of Mokeetsi; Dwarsrivier;
16 km SW of Bandelierkop (NMZB).

Habitat and Ecology

A large, exclusively rupicolous species found on rocky hillsides, outcrops and bedrock away from hills. Even small, insignificant areas of bedrock with scattered rocks are utilized. Normally observed basking on rocks, they take refuge in crevices under exfoliating rock, between rock on rock and also in vertical crevices. Up to 20 individuals may be found under a suitable slab of exfoliating rock. A wide variety of veld types including 8, 9, 11, 14, 15, 18, 19 and 67 are inhabited at altitudes of 390-1200 m above sea level.

Diurnal, active and colonial, the dominant male may be seen displaying to other conspecifics by raising up on his fore legs and with arched back present himself.

Head bobbing or juddering also takes place. During the breeding season in summer (October) many males were found with bite marks across the back, indicating male to male combat, and this is no doubt responsible for the high incidence of regenerating tails. Oviparous, two eggs are laid at a time during October, November and December. Eggs measure 21,0 - 22,5 x 9,0 - 11,3 mm.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in the K.N.P. and two provincial nature reserves. Provided that commercial exploitation is curtailed the species is secure.

Remarks

A large easily recognisable species varying only in the shade of green dorsally and green to blue ventrally. The presence or absence of the black collar is very variable.

Platysaurus intermedius wilhelmi Hewitt, 1909

Platysaurus wilhelmi Hewitt 1909, Ann. Tvl. Mus. 2, p. 29 and 1910, pl. 1, fig. 2. Type locality: Nelspruit, Barberton dist., E. Transvaal. FitzSimons 1943, pp. 447-478, fig. 381.

Platysaurus guttatus wilhelmi Hewitt. Loveridge 1944, p. 92.

Platysaurus intermedius wilhelmi Hewitt. Broadley 1978, pp. 163-164, fig. 11; Welch 1982, p. 115; Pienaar et al 1983, p. 97, pls. 37 & 37A; Branch 1988a, p. 167, 1988b, p. 10.

Platysaurus wilhelmi wilhelmi Hewitt. Pienaar 1966, p. 110, pls. 42, 42A & 43, 1978, p. 87, pls. 33, 33A & 33B.

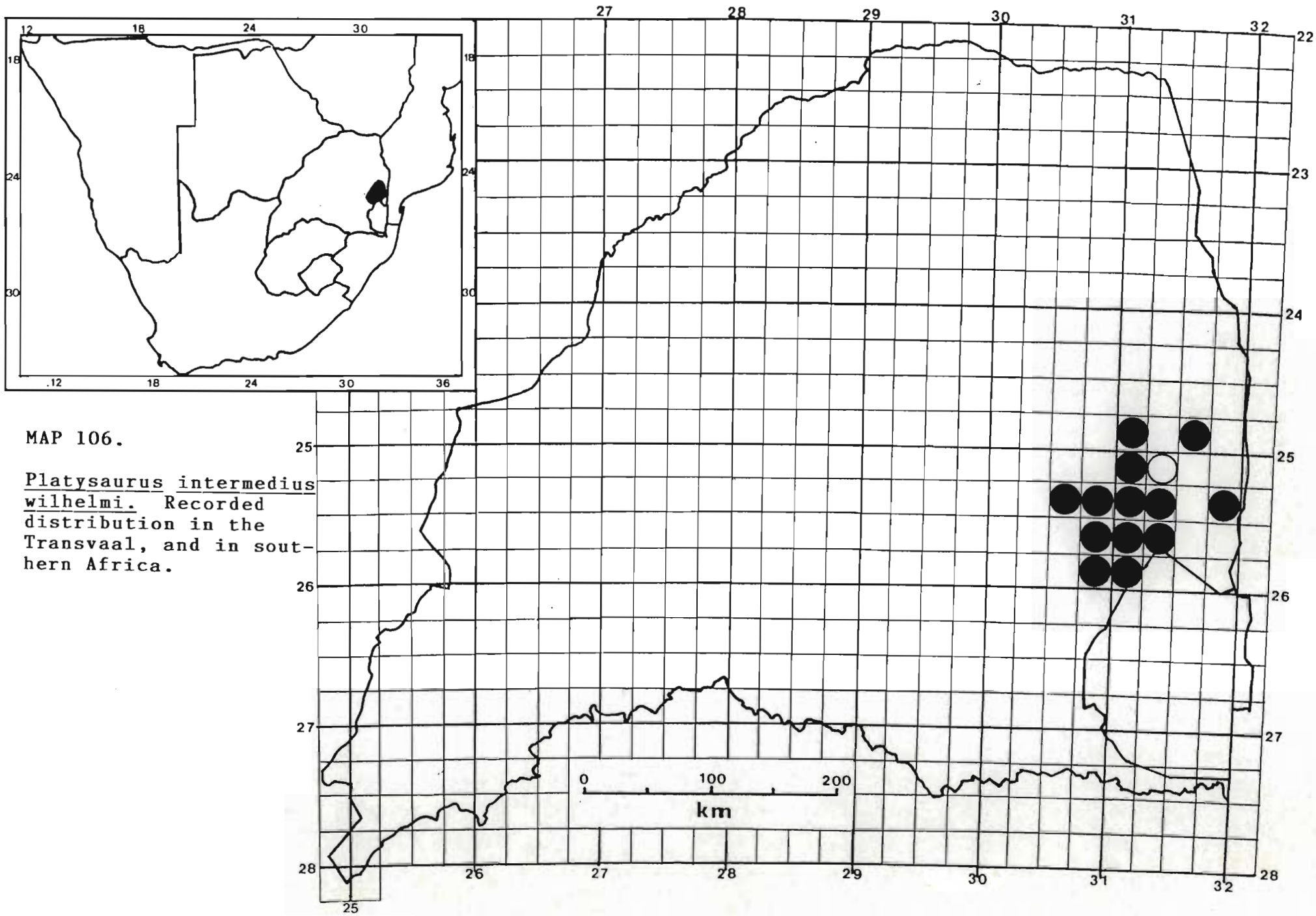
Platysaurus guttatus guttatus (not A. Smith). Pienaar 1966, p. 109.

Description. 76 Specimens examined.

Colour: Males green to bluish green dorsally, darkest on the head and fading posteriorly. A faded median stripe extends from the rostral, longitudinally to the base of the tail. The dorsum is heavily spotted with pale green to off-white. Limbs green anteriorly becoming grey-brown posteriorly. Hindlimbs feebly spotted. Tail brick-red becoming straw coloured distally. Laterally head green, with black and blue upper labials and black lower labials; sides of neck green above, black below; body blue-green laterally. Ventrally chin, throat and upper chest black; Mental blue; lower chest and abdomen ultramarine with black infusions mesially, occasionally almost totally black. Limbs blue ventrally; cloacal plate blue; tail bright brick-red becoming straw-coloured posteriorly. Females black to grey-black dorsally with three distinct white stripes, the median extending from the rostral posteriorly onto the base of the tail; two dorsolateral stripes (one on each side)

extend from the supraoculars to the base of the tail. The area between the stripes irregularly spotted in interrupted lines, faint above the shoulders becoming more marked posteriorly. Tail buffy-brown. Laterally labials pale blue with darker sutures. Sides of neck and body grey-brown with scattered pale spots. Limbs grey-brown with numerous pale spots. Tail pale buffy orange. Ventrally pale blue becoming darker mesially on the abdomen. Chin and throat with darker markings. Underside of limbs blue. Tail pale orange-buff to pale greyish-brown.

Lepidosis: Very flattened lizards with triangular heads as broad to slightly broader than neck. Body widest posteriorly. Limbs slender and moderately developed. Tail flattened proximally tapering to a fine tip. Tail longer than SVL being 55,55 - 65,90% (mostly 60,0 - 65,0) of total length. Rostral roughly hexagonal, broader than high; nostril pierced along posterior margin of nasal; nasals separate exceptionally in contact behind rostral; frontonasal broader than long, in contact with postnasal and loreal; prefrontals in median contact and with preoculars and loreals; frontal small, longer than broad and tapered posteriorly; frontoparietals in median contact and with posterior supraoculars, rarely separated; anterior parietals in contact anterior to interparietal; interparietal large, in contact with occipital rarely separated; posterior parietals separated, rarely in narrow contact behind interparietal. Superior temporals 3; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; preocular 1; suboculars 4, 2nd in contact with lips, 3rd in narrow contact to narrowly excluded from lip. Temporals in rows, dorsal larger; UL 4; Lower eyelid opaque with elongate septate divisions. Mental as long as wide to slightly wider than long; LL 4 rarely 6 to below subocular; sublabials 5 prs, 1st pair



MAP 106.

Platysaurus intermedius
wilhelmi. Recorded
 distribution in the
 Transvaal, and in south-
 ern Africa.

in median contact; gulars between posterior sublabials 16-18, with median row enlarged. Dorsals heterogeneous, 76-85 at midbody, enlarged and conical laterally. Collar curved with 5-9 plates. Ventrals in 16-19 (mostly 18) longitudinal and 32-36 transverse rows; limbs moderately developed, heels spinose; 17-21 (mostly 18-20) lamellae under 4th toe; femoral pores in males 14-19 (mostly 17-19) per side; tail tapered, slightly keeled dorsally and spinose laterally, smooth ventrally. Caudal autotomy evident with 19/56 (33,93%) of tails regenerated.

Size: Largest male SVL = 80,0 mm (N5636 - Waterval 273KU), mass = 9,7 g (N5636). Largest female SVL = 72,0 mm (N7777 - Broedershoek 129JU), mass = 6,2 g (N7030 - Ga-Chweni). Mean male SVL = 72,07 mm \pm 6,77 (1SD) n = 14, mass = 6,26 g \pm 1,81 (1SD) n = 14; Mean female SVL = 64,67 mm \pm 4,90 (1SD) n = 9, mass = 4,44 g \pm 1,29 (1SD) n = 9.

Distribution

Endemic to the eastern Transvaal Lowveld.

Distribution in Transvaal (Map 106)

3 km S. of Nelspruit; 3 km W. of Nelspruit; 4 km W. of Nelspruit; 7 km E. of Nelspruit; 15 km S. of Nelspruit; 16 km S. of Nelspruit; 30 km S. of Nelspruit; 20 km W. of Skukuza; Barberton; Broedershoek 129JU; De Hoop 203JU; Excelsior 211JU; Ga-Chweni; Hippo Pool, Crocodile Bridge; Mara R., Nelspruit; Nelspruit; Queens R.; Rosehaugh State Forest; Roodewal 251JT; Sandford 291JU; Skukuza; Spitskopje 243JT; Steiltes, Nelspruit; Waterval 269JT; Waterval 273KU; White River; Wilkenshof 252JT; near junction of Sabie and Marite rivers.

Literature Records

Skukuza; granitic outcrops at Mbyamiti; Nahpe and Skukuza experimental plots; Numbi kop; Bkwenene-Nsikazi junction; Crocodile bridge hippo pool; Mbyamiti dam area; Ship mountain; Shithlave hill; Machuluane mountains; Malelane section; Stolznek ranger's quarters, (Pienaar et al 1983). Mahosha, 8 km W. of Numbi, (NMZB).

Habitat and Ecology

Restricted to granite outcrops and inselbergs in the southern lowveld in veld types 9 and 10 at altitudes of 200-1600 m above sea level. Exclusively rupicolous, it lives in narrow crevices formed by exfoliating granite as well as in crevices between rocks. Normally observed basking on boulders from which the dominant males pose upright to deter other dominant males from entering his territory. A closer approach will result in the male presenting the shiny black skin of the ventrum to the intruder (Broadley, 1978). These lizards are communal, living in large groups. Normally escaping into rock crevices, one lizard was seen to dive into a stream and lie submerged for at least 5 minutes and would have remained longer had it not been captured. This lizard had on a previous occasion also taken to the water on being disturbed.

Broadley (1978) recorded that P. i. wilhelmi was partially herbivorous (35%). Little has been recorded on the food. The species is oviparous, laying two eggs in October/November.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species has a limited distribution in the Transvaal and does not appear to be found in a provincial nature reserve. It is however widespread in the southern Kruger National Park. Coupled with its habitat the status of the species is secure and out of danger, provided that no commercial exploitation is allowed.

Remarks

A distinct subspecies, it is linked with P. intermedius Matschie on the basis of the septate lower eyelid. There is a narrow distribution gap between "intermedius" and "wilhelmi" and populations are allopatric. The obvious affinity of the "lebombo" form to typical "wilhelmi" by virtue of its heterogeneous dorsal scalation indicates more recent splitting off than that between "wilhelmi" and "intermedius". However the pronounced colour differences between "wilhelmi" and "lebombo" indicate that the subspecies most probably were in close contact causing the definitive colour scheme. P. i. wilhelmi and the "lebombo" form, form a unit which could justify specific status (Plate 1).

Platysaurus i. "Lebombo"

Platysaurus wilhelmi Hewitt (part). FitzSimons 1943, p. 477.

Platysaurus guttatus wilhelmi Hewitt (part). Loveridge, 1944, p. 92.

Platysaurus intermedius wilhelmi Hewitt (part). Broadley, 1978, p. 163; Welch, 1982, p. 115; Branch 1988a, p. 167 (part).

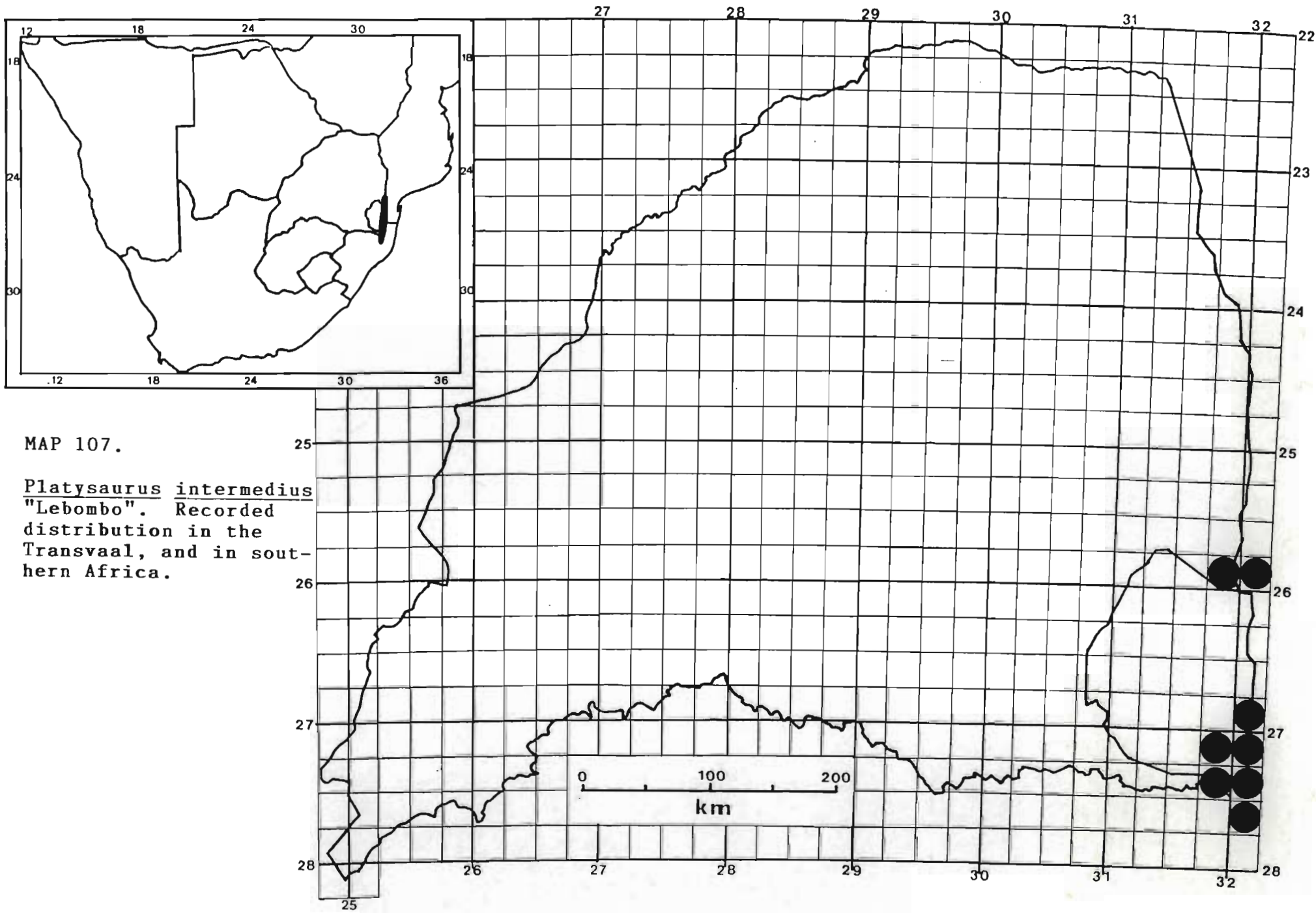
Description: 56 Specimens examined including 25 extralimital.

Colour: Males blackish-grey median dorsally with or without a narrow brownish stripe extending from rostral vertebrally to the base of the tail. Irregular pale spotting occurs linearly from the neck on either side posteriorly to the sacrum. Dorsolaterally a brown streak or band from the supraoculars along the temporals to above the hind legs. Some very mature specimens are totally blackish above and laterally. Laterally, most specimens with greenish blotches interspersed with black on upper labials. Temporals brownish-black. A broad orange-red streak occurs from anterior to the shoulders along the body to the inguinal region. Limbs brownish to grey-black dorsally, the thighs may be reddish posteriorly. Tail brownish orange-red. Ventrally dominant males totally black below with bluish patch on mental. The black extends onto the cloacal plate and anterior portion of thighs. Lower hindlimbs may have blue patches. Posterior of thighs pale orange. Subdominant males have varying degrees of blue ventrally, mesially and also pale blue narrowly ventrolaterally. Mental green-blue and chin and anterior of throat mottled with greenish blue.

Females brownish-black to black dorsally becoming more brownish distally with three distinct continuous stripes longitudinally down the back, the median from the rostral onto the base of the tail; two dorsolateral, one on each side extend from the supraoculars to the base of the tail. Inbetween the stripes an irregular row of spots is found. Limbs brownish-grey with pale spots. Tail brownish-grey mesially tapering posteriorly. Dorsolaterally straw-coloured to orange straw-coloured. Ventrally the females bluish-white with dark spots on chin and throat becoming more blue on chest and abdomen in some specimens with extensive black mesially. Tail pale orange-brown.

Lepidosis: Very depressed lizards with a pointed head, as wide as the neck. Body widest posteriorly. Limbs moderately developed with relatively small feet; Tail depressed proximally, tapering to a tip and longer than SVL, being 61,38 - 65,02% of total length. Rostral roughly pentagonal, broader than long; nostril pierced near posterior margin of nasal; nasals in contact (68%) or more rarely separated (32%) behind rostral; frontonasal as broad as, to slightly broader than long, in contact with postnasal and loreal; prefrontals in median contact; frontal small, longer than broad and slightly tapered posteriorly; frontoparietals in broad contact and with posterior supraoculars; anterior parietals in contact anterior to interparietal; interparietal in contact with occipital separating large posterior parietals. Superior temporals 3; supraoculars 4; supraciliaries 4; postnasal large; loreal 1; preocular 1; suboculars 4, 2nd only in contact with lip; Temporals in two rows, upper slightly larger than lower; lower eyelid septate and opaque; UL 4, anterior to subocular; Mental slightly broader than long; LL subequal to subocular 4-5; sublabials in five pairs, anteriormost in broad median contact. Gulars between posterior sublabials 16-19; Dorsals granular, heterogeneous, becoming larger and conical laterally; scales at midbody 68-87; Ventrals in 15-20 (mostly 16-18) longitudinal and 34-36 transverse rows. Digits slender with 16-20 (mostly 16-19), subdigital lamellae under 4th toe; Heels moderately spinose. Tail scales in whorls, laterally spinose. Caudal autotomy evident with 20/49 (40,82%) regenerating.

Size: Largest male SVL = 75,0 mm (J6445 - Mananga hill), mass = 7,7 g (N7378 - Bhokweni); Largest female SVL = 70,0 mm (J6436 - Mananga hill), mass = 5,7 g (N7363 - Othobothini). Mean male SVL = 69,0 mm \pm 6,48 (1SD)



MAP 107.

Platysaurus intermedius
 "Lebombo". Recorded
 distribution in the
 Transvaal, and in south-
 ern Africa.

n = 4, mass = 5,85 g \pm 1,83 (1SD) n = 4; Mean female SVL = 60,69 mm \pm 6,81 (1SD) n = 8, mass = 3,89 g \pm 1,10 (1SD) n = 8.

Distribution

Restricted to the Lebombo mountains in the eastern Transvaal, Swaziland, Zululand and Mozambique.

Distribution in Transvaal (Map 107).

Mananga hill; Verlore 501JU; on W. side of Lebombo mountains above Gwaliweni forest.

Habitat and Ecology

Rocky outcrops and rhyolite dwalas living in crevices between and under rocks including crevices under exfoliating rock. Usually observed basking or foraging among the boulders, or on bedrock. Restricted to veld type 6 at altitudes of 600-800 m above sea level. Oviparous one to two fully developed ova have been recorded during September, November and April.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. Very restricted in distribution occurring only along the Lebombo mountains but apparently not extending north of the Crocodile river. It does occur marginally in one provincial nature reserve. Currently is known in the Transvaal from marginal localities in KaNgwane and above the Pongola dam. The species is secure in its habitat, provided that no commercial exploitation takes place.

Remarks

Closely related to P. i. wilhelmi because of the heterogeneous dorsal scalature, the black ventrum in dominant individuals and that in a third of the specimens the nasals are separated. It differs however in that most nasals are in contact, the dorsal and ventral colouration with even immatures of P. i. "Lebombo" having the ventrals black with a little blue mesially, whereas in P. i. wilhelmi it is the opposite, with a blue ventrum becoming black mesially. In addition, in wilhelmi the 3rd subocular is in narrow contact with or narrowly excluded from the lip whereas in "lebombo" this subocular is broadly to narrowly excluded. It is therefore sufficiently different from wilhelmi to warrant subspecific status (Plate 1).

Platysaurus intermedius rhodesianus FitzSimons, 1941

Platysaurus guttatus rhodesianus FitzSimons 1941, Ann. Tvl, Mus. 20 p. 279. Type locality: Vumba mountain, Rhodesia. FitzSimons 1943, p. 481 (part)., Loveridge 1944, p. 86 (part).

Platysaurus intermedius rhodesianus FitzSimons. Broadley 1978, pp. 168-170; 1974, p. 380; Pienaar 1978, p. 90, pl. 35; Welch 1982, p. 114; Auerbach 1987, p. 123, pl. 12, fig. 3; Branch 1988a, p. 167, pl. 75, 1988b, p. 10.

Description: 101 Specimens examined.

Colour: Males grey-green to green above anteriorly merging to brownish-red to reddish posteriorly; Head blackish-green with three pale green stripes, the median extending from rostral fading posteriorly behind the shoulders; this stripe is broadest on the head narrowing immediately behind the head. The dorsum is heavily spotted with beige; limbs brownish-grey tinged with green on the forelimbs and with reddish on the hindlimbs.

Limbs also pale spotted. Tail pale brick-red. Ventrally chin and throat greenish-blue to blue with a black collar; chest green to pale blue becoming dark blue to blackish-blue on the belly; inside of limbs light blue; tail brick-red below.

Females blackish to blackish-brown dorsally with three dorsal cream or off-white stripes. The median stripe is broadest on the head, extending from the rostral posteriorly becoming narrowed on the neck and continues in an interrupted or continuous line onto the base of the tail; the dorsolateral stripes extend from the supraoculars, are broad and extend onto the base of the tail. None or a few very faint spots between the stripes. Dorsolaterally grey-brown with scattered faint brownish spots; Limbs grey-brown with faint markings. Tail blackish mesially becoming brownish distally. Tail brownish straw-coloured. Ventrally chin and throat greyish-green to blueish with dark mottling. Chest greenish to bluish white with greenish to bluish patch mesially on the abdomen. Scales on belly dark edged mesially; cloacal plate blue or bluish-white. Limbs bluish white with or without darker spotting. Base of tail pale orange becoming straw-coloured distally.

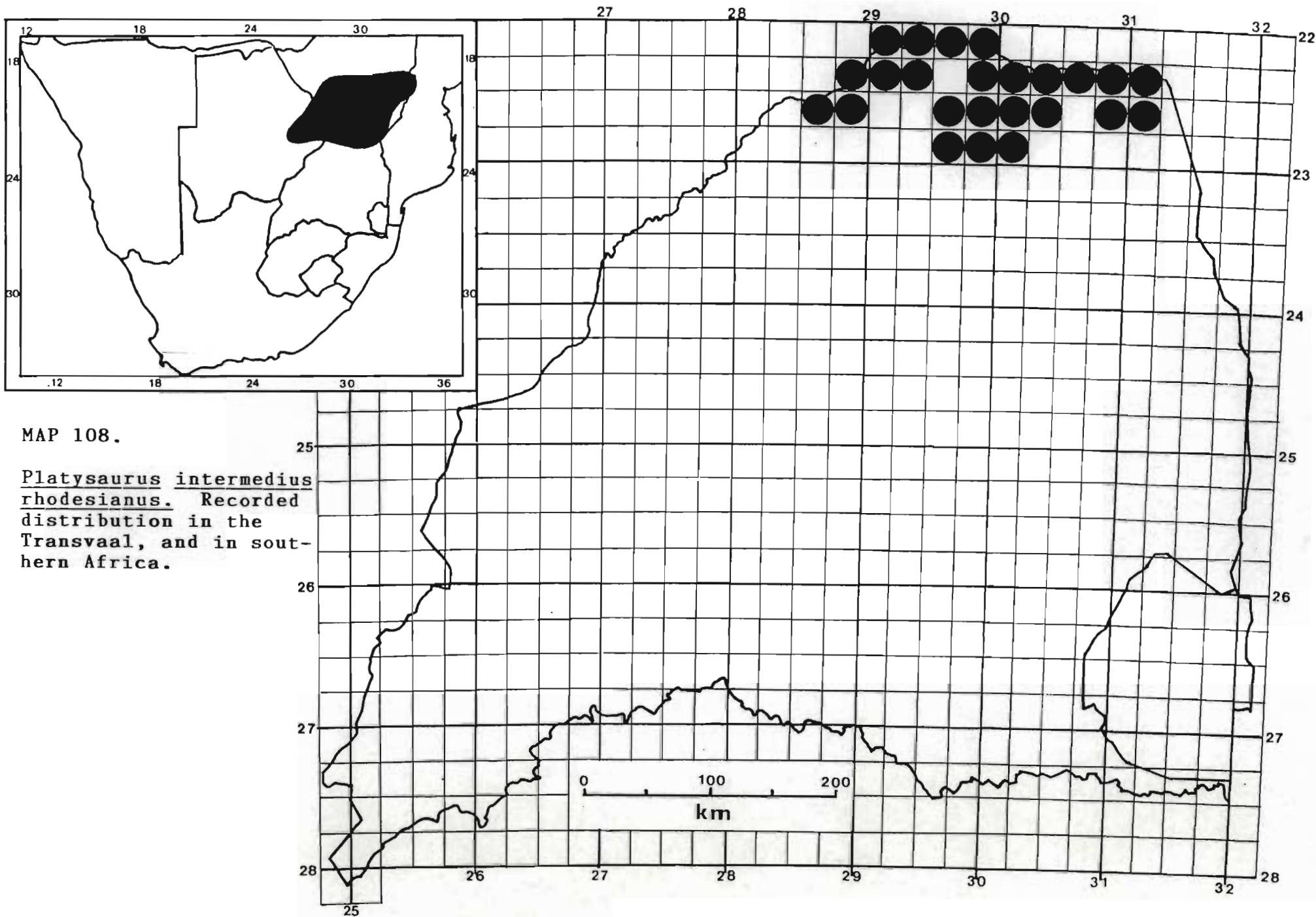
Lepidosis: Large moderately depressed lizards with head as wide as, or wider than neck. Body widest posteriorly, limbs well developed and pentadactyle. Tail longer than SVL being from 58,57 - 69,71% of total length. Tail flattened at the base becoming rounded posteriorly. Rostral pentagonal, rounded at the apex and wider than long; Nostril pierced near posterior margin of nasal; nasals in contact (76,32%) or separate (23,68%) behind rostral; frontonasal broader than long and in contact with postnasals and loreals; prefrontals in broad median contact and with preoculars and loreals; frontal small, entire (rarely subdivided) and tapering posteriorly; frontoparietals in broad median contact and with

posterior supraoculars; anterior parietals in contact proximally to interparietal; interparietal large and in contact with (59,41%) or separated from (40,59%) the occipital. Posterior parietals large; superior temporals 3 (rarely 4); supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; preocular 1; suboculars 4, 2nd in contact with, 3rd in narrow contact with or more rarely narrowly separated from, the lip. Temporals in two rows, uppermost enlarged; Lower eyelid opaque and septate; UL 4 or 5. Mental wider than long, to as wide as long; LL 4-5 to below subocular; sublabials in 5 pairs, anteriormost in broad contact. Gulars between posterior sublabials 18-34 (Broadley, 1978) but appear more frequently to be between 25-27, the median row enlarged; Dorsals granular, more or less homogeneous, only slightly enlarged laterally and conical. Scales at midbody 76-102 (Broadley, 1978). Scales on neck conical and spinose; collar curved, composed of 5-15 plates. Ventrals in 18-24 (mostly 20-22) longitudinal and 35-48 transverse rows. Heels of feet spinose; lamellae 17-24 (mostly 20-23) scales under 4th toe. Femoral pores in males 15-23 (mostly 18-21). Caudal scales in whorls, smooth to feebly keeled dorsally, strongly keeled and spinose laterally, becoming smooth ventrally. Caudal autotomy present with 20/72 (27,78%) of tails having regenerated.

Size: Largest male SVL = 101,5 mm (N703 - Evelyn 160MS), mass = 23,8 g (N703); Largest female SVL = 86,0 mm (N565 - Doreen 108MT), mass = 14,1 g (N565). Mean male SVL = 91,61 mm \pm 8,20 (1SD) n = 13, mass = 17,1 g \pm 5,32 (1SD), n = 13; Mean female SVL = 74,11 mm \pm 7,72 (1SD), n = 27, mass = 7,74 g \pm 2,71 (1SD) n = 28.

Distribution

Zimbabwe, eastern Botswana, south western Mozambique and the northern Transvaal.



Distribution in Transvaal (Map 108).

4 km SE of Messina; 53 km S. of Messina; Bekaf 650MS; Bievack 14MR; Border 136MS; Breslau 2MS; Brockham 50MT; Corea 96MS; Dambale Hills; Den Staat 27MS; Doreen 108MT; Evelyn 159MS; Greefswald 37MS; Hackthorne 30MS; Hilda 23MS; Illovo 187MR; Jutland 536MS; Kliprivier 692MS; Little Muck 26MS; Mabelikwa; Mashikiri Waterhole; Masisi; Messina Agricultural Station; Messina Golf Course; Mietjiesfontein 220MR; Musekwas Location; Mutalepoort; Nwanedzi R.; Petershof 131MS; Prachtig 538MS; Ratho 1MS; Schroda 46MS; Scrutton 23MT; Trevenna 119MT; Tshidzi Hill; Tshipise; Tula Mila; Van Deventer 641MS.

Literature Records

Mashikiri poort; Shantangalane koppies; Klopperfontein koppies; Shahulu spring area; koppie along main road between Klopperfontein and Mashikiri; Pafuri rangers post; Mutale gorge area; Pafuri (Pienaar et al 1983). Mutamba, Messina (NMZB).

Habitat and Ecology

A rupicolous species found on granite and sandstone outcrops in the Limpopo basin but reaching up onto the northern ranges of the Soutpansberg in a few places. Communal, these diurnal lizards inhabit crevices between or under rock on rock and in particular under exfoliating sheets of rock, often five or more under the same rock. Occur in veld types 14, 15 (mostly) 18 and 19 at altitudes of 300-800 m above sea level. Usually observed basking or foraging on the boulders and bedrock. Broadley (1978) recorded that the species fed on Orthoptera, Isoptera, Hemiptera, Lepidoptera larvae, Coleoptera (adults and larvae), Hymenoptera, Arachnida, Diplopoda, Neuroptera as well as some vegetable matter.

Of particular importance are ants, wasps and bees, beetles and lepidopteran larvae as well as the vegetable matter. Oviparous, two eggs are laid at a time during early to midsummer. The eggs measure 21,5 - 22,5 x 9,5 - 10,0 mm. Broadley (1978) recorded 26 eggs in a communal depository in a 10 cm deep vertical crevice during mid December, while also recording two old depositories of 10 and 30 egg shells respectively. Hatchlings occur from January to May.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in one provincial nature reserve, as well as the northern tip of the Kruger National Park. In good habitat it can be very common. Its rocky habitat renders it safe from most forms of exploitation but is susceptible to commercial trade. Provided that this is contained, the species is secure.

Remarks

In the Transvaal the species is relatively uniform in contrast to the situation in Zimbabwe. Zimbabwe specimens become considerably larger according to Broadley (1978) and two colour phases are apparent.

Platysaurus intermedius natalensis FitzSimons, 1948.

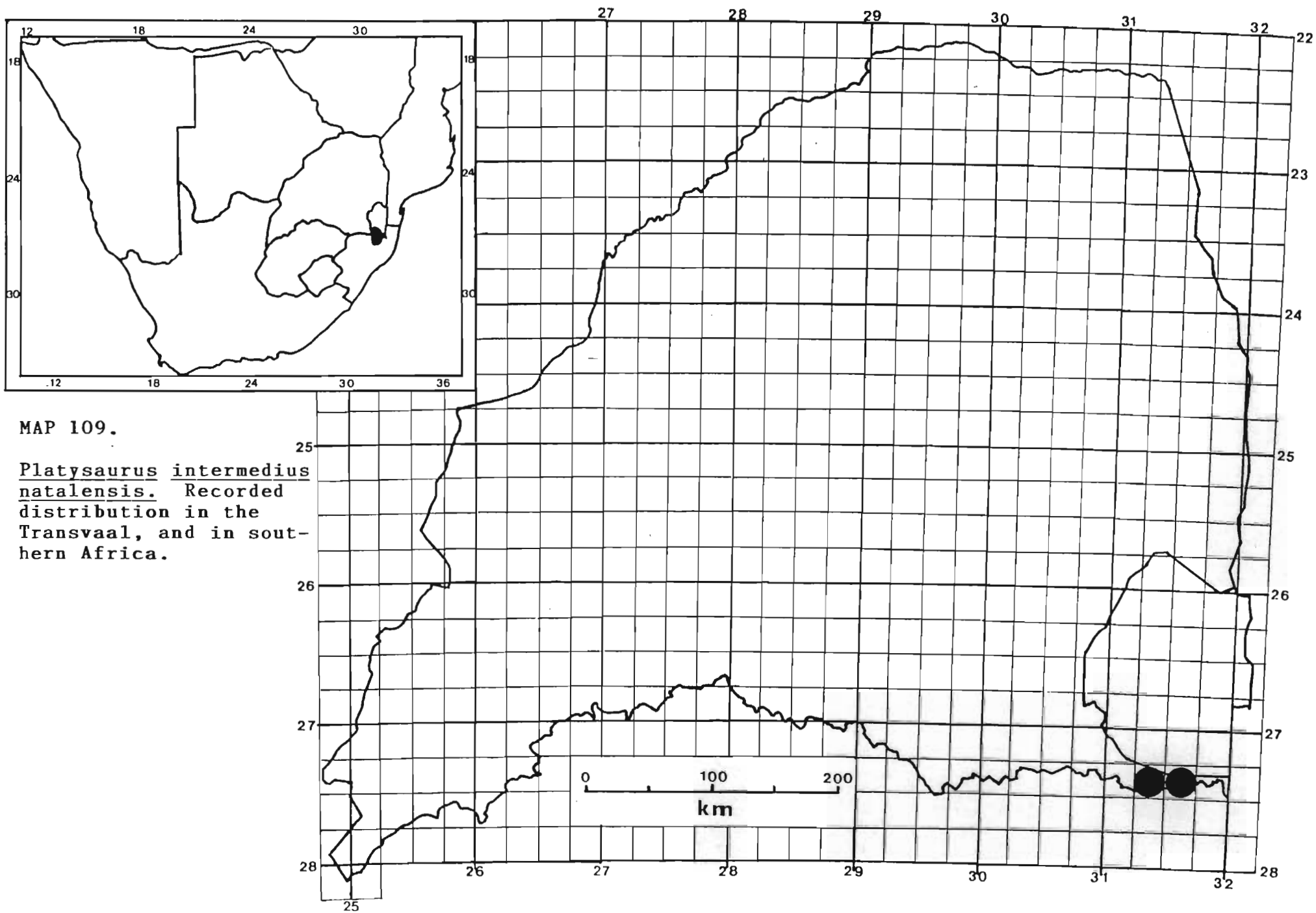
Platysaurus guttatus natalensis FitzSimons 1948, Ann. Tv1. Mus. 21, p. 74. Type locality. Louwsburg, Natal.
Platysaurus intermedius natalensis FitzSimons. Broadley 1978, pp. 164-165; Welch 1982, p. 114; Branch 1988a, p. 167, pl. 75, 1988b, p. 10.

Description: 11 Specimens examined.

Colour: Males blue-green, green to yellow-green above. Head variable from blackish-green to green with three paler stripes; the median extending from rostral to base of tail, the two dorsolateral (one on each side) extending from the supraoculars to the back of the head and in some specimens onto the back, fading posteriorly. Areas between the stripes are strongly spotted with pale green as are the green sides. The labials are green with dark margins to the scales. Limbs brownish black above with pale and dark spots; the anterior portions of the limbs are blue-green to green; in some the posterior thighs are tinged with orange-red. Tail orange-red. Ventrally chin and throat yellow, green to blue green with black spots and streaks. A black collar usually present and entire occasionally broken mesially or rarely absent; upper chest light blue to blue becoming ultramarine and finally dark blue in the middle of the abdomen extending onto the precloacal shield. Ventrolaterally pale blue to blue appearing checkered in some individuals. Underside of limbs pale blue to dark blue. Tail orange-red ventrally.

Females blackish to greyish black dorsally with three distinct white stripes, one mesially from rostral, two (one on each side) from supraoculars, down the back to the base of the tail. Dorsolaterally grey-brown with pale spots; Limbs grey-brown with beige spots. Tail brownish-black mesially flanked by beige to pale straw-coloured. Ventrally chin and throat pale whitish-blue with dark streaks. A black collar present or absent. Upper chest whitish-blue spotted with dark blue. Abdomen dark blue mesially paler ventrolaterally; underside of limbs bluish-white spotted blackish. Tail straw-coloured below.

Lepidosis: A robust, depressed lizard, similar to P. i. intermedius, with a triangular head as wide to slightly wider than neck. Body broadest posteriorly; Limbs well developed; Tail flattened proximally becoming rounded near the tip. Tail tapered, longer than SVL and between 55,68 - 63,29% of total length. Rostral roughly pentagonal, but apex rounded, broader than high; nostril pierced near posterior margin of nasal; nasals separate (81,82%) or in contact (18,18%) behind rostral; frontonasal equal to or longer than wide, in contact with postnasals and loreals; prefrontals in moderate median contact and with loreals and preoculars; frontal about twice as long as wide, tapered posteriorly; frontoparietals in median contact and with posterior supraoculars; anterior parietals in median contact anterior to interparietal; interparietal large, in contact with occipital and separating posterior parietals. Superior temporal 3; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; elongate preocular 1, large; suboculars 4, 2nd in contact, 3rd usually in contact, rarely narrowly separated from lip; temporals in two rows, uppermost very enlarged; Lower eyelid septate; UL 4, anterior to subocular; Mental wider to as wide as long; LL 4-5, to below subocular; sublabials 5 pairs, anteriormost in broad contact; gulars between posterior sublabials 17-22 (mostly 20-22); Dorsals granular, homogeneous, becoming larger dorsolaterally, large and rounded to conical laterally; Scales at midbody 68-86 (Broadley, 1978); Ventrals smooth in 16-20 (mostly 16-18) longitudinal and 36-41 (Broadley, 1978) transverse rows; Heels spinose; Subdigital lamellae 16-20 under 4th toe; femoral pores in males 14-16 per side; Caudal scales in whorls, feebly keeled dorsally; strongly keeled and spinose laterally and smooth ventrally. Caudal autotomy present with 2/10 (20%) of tails regenerating.



MAP 109.

Platysaurus intermedius natalensis. Recorded distribution in the Transvaal, and in southern Africa.

Size: Largest male SVL = 80,0 mm (N7341 - Godlwayo), mass = 11,1 g (N7341); Largest female SVL = 58,0 mm (N7252 - Zwartkloof 60HU), mass = 3,6 g (N7252). Broadley (1978) recorded the largest Natal female as being 79,0 mm while a male measured 86,0 mm SVL. Mean male SVL = 73,12 mm \pm 7,81 (1SD) n = 8, mass = 8,05 g \pm 2,70 (1SD) n = 8.

Distribution

Restricted to southern Swaziland, south-eastern Transvaal and northern Natal.

Distribution in Transvaal (Map 109).

Godlwayo; Zwartkloof 60HU.

Habitat and Ecology

Found in crevices between rocks and under exfoliating slabs on granite outcrops in veld types 10 and 63 at altitudes of 600-900 m above sea level.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. Very limited in distribution and even more restricted in the Transvaal to a small area in the south-east. Restricted to granite outcrops. The species is only protected by its habitat as it does not occur in any nature reserve in Transvaal. The species is rare and vulnerable to commercial exploitation. Details of population size and extent need be established followed by monitoring.

Remarks

An isolated subspecies whose nearest geographical relatives are P. i. wilhelmi and P. i. "lebombo" and to which it is related by virtue of the more or less heterogeneous dorsal scales. However, in size and colour it is closer to intermedius indicating retention of primary attributes on the margins of the phenon of intermedius.

Platysaurus intermedius parvus Broadley, 1976

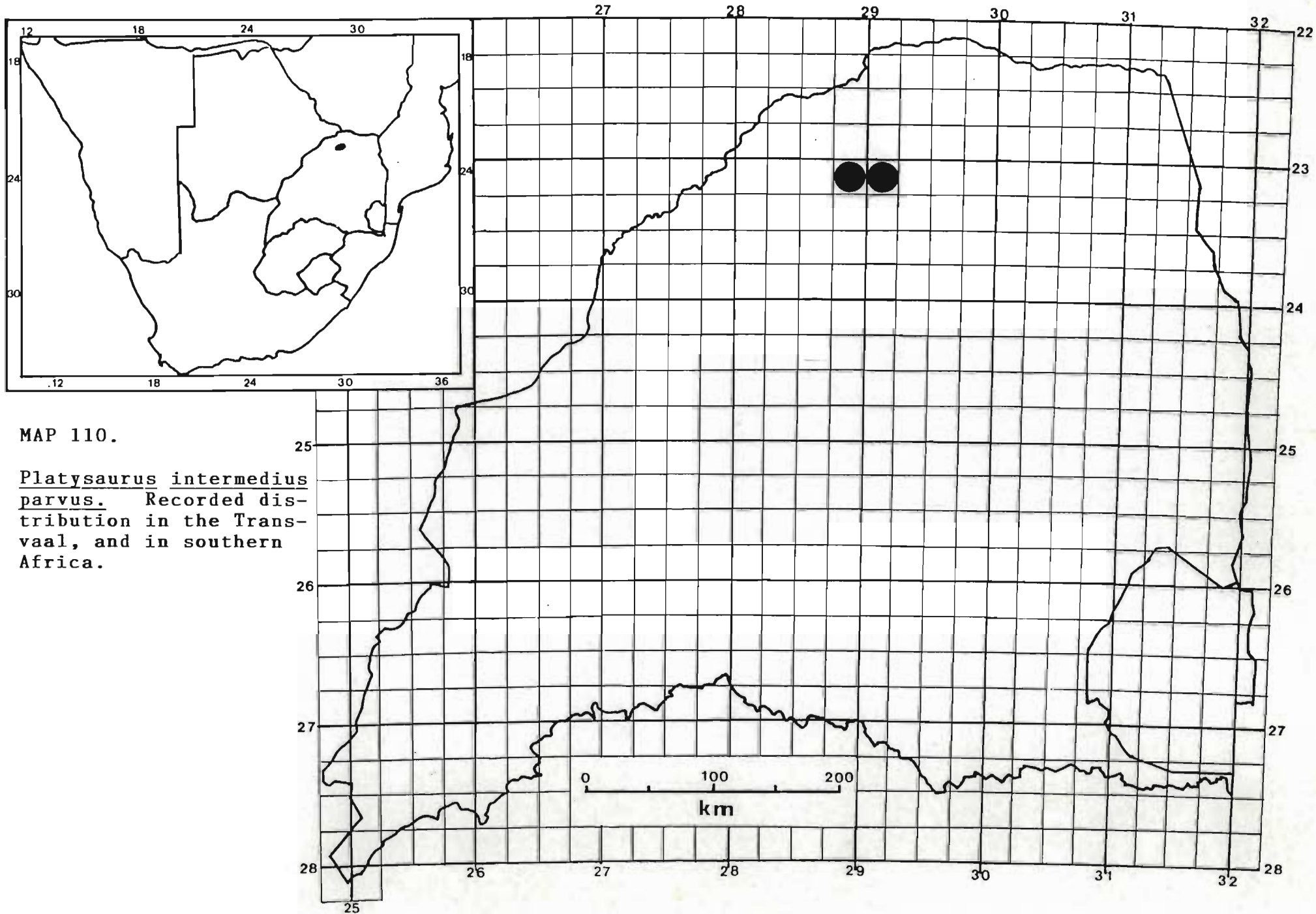
Platysaurus intermedius parvus Broadley 1976, Arnoldia (Rhod.) 8(8), pp. 2-3. Type locality: Blouberg, N. Transvaal. Broadley 1978, pp. 165-166; Welch 1982, p. 114; Branch 1988a, p. 167, 1988b, p. 10.

Description. 49 Specimens examined.

Colour: Males, green above merging to reddish posteriorly. Head dark blackish-green above with three pale longitudinal stripes, one from rostral to occiput, two dorsolateral, one on each side from supraoculars to rear of head. Back very spotted and variegated, rarely an indistinct interrupted vertebral stripe present. Forelimbs green above, hindlimbs green or anterior of femur becoming reddish posteriorly. Tail orange-red above. Laterally, head green, body green becoming bluish ventrolaterally. Ventrally chin and throat pale blue to blue-green; a black blotch is present, occasionally absent on either side of the neck; chest and belly blue, darkest mesially. Limbs blue. Tail brick-red below. Females black on the head becoming blackish-brown posteriorly down the body. Three distinct white stripes, one vertebral, starting from the rostral and ending on the base of the tail, two dorsolateral, (one on each side) starting on the supraoculars and ending on the base of the tail, are found along the length of the back. The

area between the stripes is irregularly spotted with off-white becoming buffy posteriorly. Limbs blackish-brown, faintly spotted. Tail dark brownish-grey mesially, straw-coloured laterally. Ventrally chin and throat pale blue green to blue with or without dark variegations. Upper chest whitish becoming pinkish-brown posteriorly with dark markings along sutures between the scales; cloacal shields red-brown. Tail buff to brownish or straw-coloured.

Lepidosis: Very depressed lizards with a triangular head slightly wider than neck; body widest posteriorly with well developed and stout limbs and slender digits. Tail flattened and tapering, longer than SVL and between 59,75 - 65,23% of total length. Rostral roughly pentagonal, wider than high; nostril pierced near posterior margin of nasal; nasals separated by rostral and frontonasal; frontonasal wider than long, in contact with loreal and postnasal; prefrontals in broad contact, and in contact with preocular and loreal; frontal small and squat, as broad as long to longer than broad and tapered posteriorly; frontoparietals in broad median contact and with to narrowly excluded from 4th supraocular; anterior parietals in contact for half their length surrounding anterior half of interparietal; interparietal large and in contact with occipital, separate in only 3/49 (6,12%) of specimens examined. Posterior parietals large and separated, rarely in narrow contact. Superior temporals 3 or 4; supraoculars 4; supraciliaries 4(5); postnasal 1, small; loreal 1; preocular 1; suboculars 4, 2nd and 3rd in contact with lip; Lateral temporals in two rows, uppermost much larger than lower; UL 4, occasionally 3, anterior to subocular; Lower eyelid septate and opaque; Mental approximately as wide as deep; LL 5 anterior to subocular; sublabials 5 (rarely 6), anterior pair in broad to moderate median contact; gulars between posterior sublabials 17-22 (Broadley,



MAP 110.

Platysaurus intermedius parvus. Recorded distribution in the Transvaal, and in southern Africa.

1978), the median row transversely enlarged; Dorsals more or less homogeneous, granular, becoming larger laterally; in 72-82 scales at midbody; scales on neck enlarged, more or less rounded to conical; collar present in 5-12 plates (Broadley 1978); Ventrals smooth and in 17-21 (mostly 18-20) longitudinal and 33-43 transverse rows, (Broadley 1978). Feet slender, with 15-21 (mostly 17-19) subdigital lamellae under the 4th toe. Scales on heels spinose. Femoral pores in males ranging from 13-19 (mostly 15-17) per side. Scales on tail in whorls, laterally spinose, dorsally feebly keeled, ventrally smooth. Caudal autotomy present with 15/43 (34,88%) of tails regenerating.

Size: Largest male SVL = 79,0 mm (N9997 - Buffelshoek 261LR), mass = 9,4 g (N9997); Largest female SVL = 73,0 mm (N9996 - Buffelshoek 261LR), mass = 6,3 g (N9996). Mean male SVL = 72,28 mm \pm 5,79 (1SD) n = 7, mass = 7,54 g \pm 1,54 (1SD) n = 7; Mean female SVL = 66,67 mm \pm 3,09 (1SD) n = 9, mass = 5,34 g \pm 0,84 (1SD) n = 9.

Distribution

Endemic to the Blouberg of the north-western Transvaal.

Distribution in Transvaal (Map 110).

Beauley 260LR; Blouberg; Buffelshoek 261LR; Urk 10LS;

Habitat and Ecology

A shy rupicolous lizard inhabiting rocky outcrops and cliff faces on the Blouberg. Usually found in narrow crevices or basking on boulders on the hillside in vegetation types 19 and 20 at altitudes 1000 - 1200 m

above sea level. Even found on rocky outcrops in grassland. Presumably oviparous as are other Platysauris species.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. A somewhat rare, sporadic and endemic species restricted to the Blouberg mountain. Does not occur in a provincial nature reserve. However its relatively sparse distribution and rocky habitat renders it secure provided that no commercial exploitation takes place. More information needed on population size and extent.

Remarks

Populations on the Blouberg differ in size from one locality to another, and are larger than the limits described by Broadley (1978). P. i. parvus is closely related to another form occurring in the Glen Alpine dam area approaching the Blouberg in the south west, but separated from the Blouberg by a minimum of 9 kilometres. This area contains five different Platysaurus taxa, the "glen alpine" form differing from parvus in having a higher number of ventrals, but otherwise being very similar. This could also indicate that "parvus" may justify specific status. Its dorsal colour in some instances is reminiscent of P. relictus, although much subdued.

Platysaurus intermedius "Glen Alpine"

Description: 20 Specimens examined.

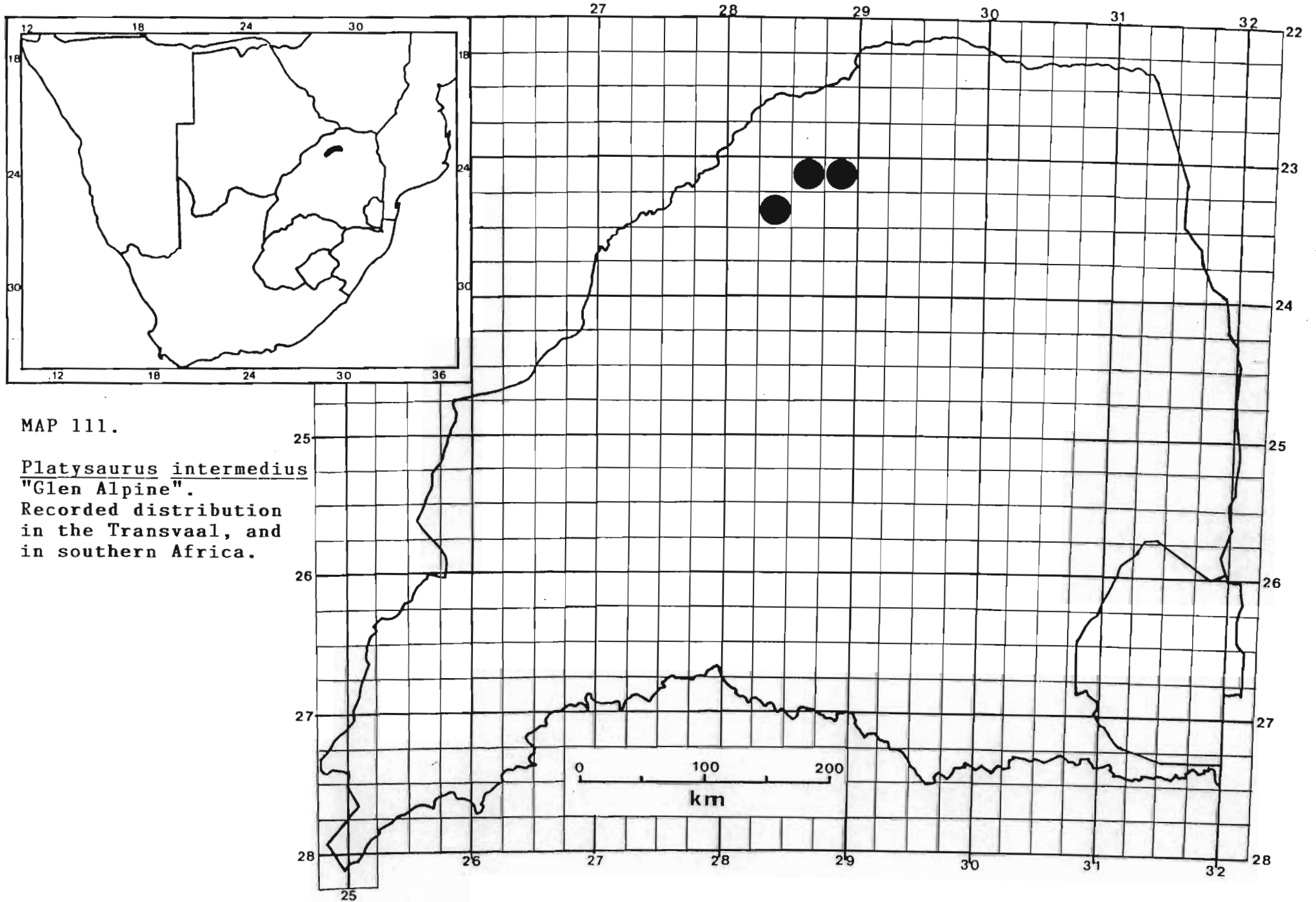
Colour: Males green dorsally; head blackish-green with or without three pale stripes, the median extending from

the rostral to the base of the tail, while the two dorsolaterals (one on each side) extend from the supraoculars to the rear of the head becoming obscure and fading posteriorly. In some specimens no stripes are apparant. Dorsum covered with regular to irregular rows of pale green spots which in very mature specimens fade out posteriorly. Limbs green spotted with pale green or may be uniform, or may be reddish posteriorly. Tail brick-orange above. Ventrally, chin and throat green, blue-green to blue, the green rarely extending onto the upper chest which is normally blue. Belly dark blue mesially including cloacal shield; forelimbs blue, hindlimbs dark-blue; Tail bright brick-red below. Females blackish-brown dorsally with dorsum of head darkest. Three distinct white stripes, the median from rostral onto the base of the tail, the dorsolaterals (one on each side) from the supraoculars extend down the back, merging dorsolaterally into the base of the tail. Between the stripes a series of pale brown spots occur, fading anteriorly. The tail brownish-straw coloured but dark blackish-brown proximally; Laterally grey-brown with pale brown spots; Limbs grey-brown with pale spots; Ventrally pale blue with darker spots merging to pinkish-brown on upper chest and belly with numerous black sutures, in some specimens almost blackening the belly. Inside of forelimbs whitish, hindlimbs whitish to pale pinkish-brown with black spotting. Tail brownish-orange below.

Lepidosis: A flat lizard, with a triangular head narrower to as wide as neck. Belly widest posteriorly; Limbs well developed; Base of tail in males laterally swollen and flattened, tail tapering to a narrow tip, longer than SVL. Tail between 58,48 - 63,0% (mostly 60,0 - 62,5%) of total length. Rostral roughly hexagonal, broader than high; nostril pierced near posterior margin of nasal; nasals widely separated; frontonasal broader

than long, in contact with posterior nasal and loreal; prefrontals in broad median contact, large and in contact with preocular and loreal; frontal small, longer than broad and tapered posteriorly; frontoparietals in broad median contact, in contact with posterior supraoculars; anterior parietals in median contact anterior to interparietal; interparietal large and in contact with occipital (exceptionally separated); Posterior parietals large separated (exceptionally in contact posterior to interparietal). Superior temporals 3; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; preocular 1; suboculars 4, 2nd and 3rd in contact with lip; lateral temporals in two rows, uppermost mostly much larger than lower. Lower eyelid opaque and septate; UL 4 rarely 3 anterior to subocular; Mental wider than, to as wide as long; LL 4 or 5 below subocular; sublabials in 5 prs with anterior pair in broad contact; gulars in 18-22 rows between posterior sublabials, the median row much enlarged. Dorsals small, granular, moderately enlarged laterally and 76-92 scales at midbody; neck scales enlarged rounded, flattened to conical. Ventrals square to rectangular in 20-26 (mostly 22-24) longitudinal and 36-41 transverse rows; feet slender and heels moderately spinose with 18-22 lamellae under the 4th toe; femoral pores in males 16-22, mostly 17 or 19; tail tapered, caudal scales arranged in whorls dorsally feebly keeled, laterally moderately spinose and ventrally smooth.

Size: Largest male SVL = 77,5 mm (J1568 - Glen Alpine 304LR), mass = 8,3 g (J1568); Largest female SVL = 71,0 mm (J1569 - Glen Alpine 304LR), mass = 6,2 g (J1569). Mean male SVL = 68,0 mm \pm 7,16 (1SD) n = 10, mass = 5,76 g \pm 1,76 (1SD) n = 10; Mean female SVL = 65,37 mm \pm 3,96 (1SD) n = 8, mass = 5,02 g \pm 1,06 (1SD) n = 8.



MAP 111.

Platysaurus intermedius
 "Glen Alpine".
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Distribution

Endemic to the north-western Transvaal.

Distribution in Transvaal (Map 111)

Glen Alpine 304LR; Goedgelegen 194LR; La Rochelle 310LR.

Habitat and Ecology

A rupicolous species found on low rocky ridges and outcrops inhabiting crevices between and under rocks. Usually found sparsely distributed in small family groups. They are rarely encountered basking on rocks. Locally distributed, they have been recorded from veld types 14 and 18 at altitudes of 1000 m above sea level.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. On account of its local distribution it does not occur in a provincial nature reserve. However it is found in remote areas and on rocky outcrops where its status should remain secure provided no commercial exploitation takes place.

Remarks

Obviously closely related to P. i. parvus, differing only in the increased number of ventrals and greater number of dorsals at midbody and a higher mode of femoral pores in males. Colour similarities are present with some individuals showing a reddish tinge to the sacral region and rear of the thighs. This is particularly the case with specimens from La Rochelle 310LR, the closest population to parvus.

Platysaurus sp. "Orange"

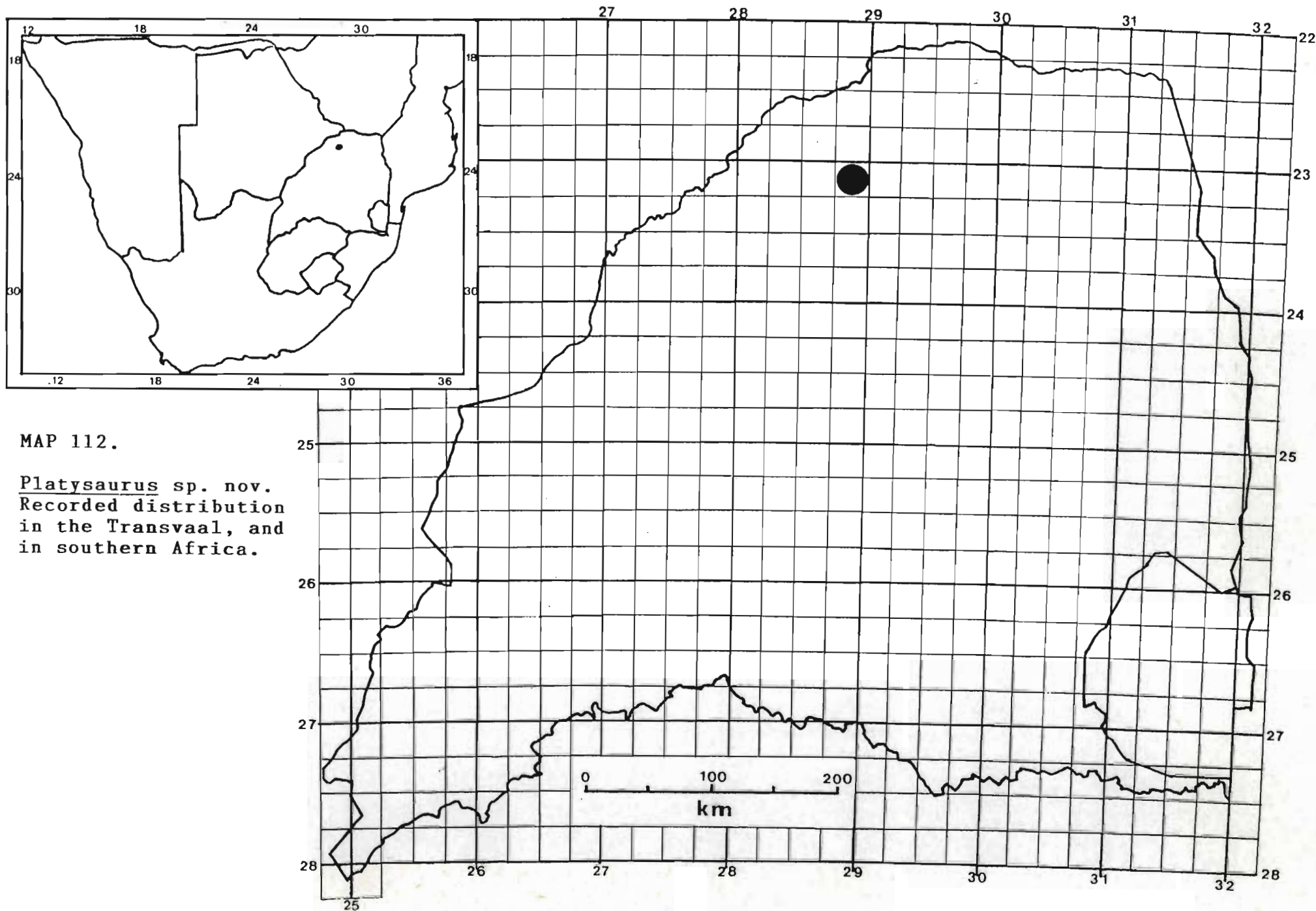
Description: 17 Specimens examined.

Colour: Males characterised by having a mottled orange and blackish head dorsally, the orange extending as speckling on the blue-green dorsum. The orange fades off at midbody, the lizard being blue posteriorly; Tail bright brick-red; Limbs blue to blue-green above. Laterally upper and lower labials orange as are the temporals which are spotted or blotched with black. Neck and sides of body ultramarine. Ventrally chin and throat orange, with an interrupted black collar. Upper chest blue becoming ultramarine, occasionally speckled or infused with a yellow. Underside of limbs blue to ultramarine with a row of femoral pores pinkish to reddish, which may also spread to the rear of the thighs. Cloacal plate dark blue. Tail bright brick-red. Females blackish-brown above with three white longitudinal stripes, the median extending from the rostral fading posteriorly ending on the basal portion of the tail. Two dorsolateral stripes (one on each side) extend from the supraoculars to above the hindlegs becoming duller posteriorly. Limbs grey-brown with pale spots. Tail grey-brown mesially narrowing posteriorly. Laterally head whitish along upper and lower labials becoming greyish-brown along the neck and sides of body with pale spots. Tail buffy-brown laterally tinged with grey. Ventrally chin and throat yellow with dark markings posteriorly. Chest heavily marked with black along sutures between scales as is the abdomen. Basic colour is pinkish-brown.

Lepidosis: Moderately depressed lizards with a triangular head as wide as the neck; Body widest posteriorly. Limbs short and stocky, digits slender. Tail flattened proximally tapering to a narrow tip. Tail longer than SVL and between 55,83 - 60,40% of total

length. Rostral roughly hexagonal, broader than high; nostril pierced near posterior margin of nasal; nasals separate behind rostral; frontonasal much broader than long, in contact with postnasal and loreal; prefrontals in broad median contact; frontal small, longer than broad and tapering slightly posteriorly; frontoparietals in broad median contact, and with or narrowly separated from, posterior supraoculars; anterior parietals in broad contact anteriorly, separated by interparietal posteriorly. Interparietal in contact with, rarely separated, from occipital; Posterior parietals large, separated rarely in narrow contact behind interparietal. Superior temporals 3 rarely 4; supraoculars 4; supraciliaries 4; postnasal 1; loreal 1; preocular 1; suboculars 4, 2nd in contact with lip, 3rd narrowly excluded from or in contact with lip; temporals in 2-3 rows, uppermost largest becoming smaller ventrally; Lower eyelid opaque and septate; UL 4 or 5 anterior to subocular. Mental broader than long; LL 4-5 under median subocular; Sublabials 5 prs, anterior pair in median contact; gulars between posterior sublabials 15-22, with median row enlarged. Dorsum covered in small homogeneous granules with much larger, conical granules laterally. Dorsals number 71-90 at midbody, those along the vertebrae slightly enlarged. Ventrals in 17-21 longitudinal and 35-37 transverse rows. Feet short, heels spinose and 17-21 subdigital lamellae under 4th toe. Femoral pores in males 17-19. Caudal scales in whorls, flat to slightly keeled dorsally, spinose laterally and smooth ventrally. Tail regeneration present with 7/16 (43,75%) of tails regenerated.

Size: Largest male SVL = 77,0 mm (N9964 - Blackhill 317LR), mass = 12,0 g (N9964); Largest female SVL = 72,0 mm (N11623 - Blackhill 317LR), mass = 8,0 g (N11627



MAP 112.

Platysaurus sp. nov.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

- Blackhill 317LR). Mean male SVL = 74,10 mm \pm 2,68 (1SD) n = 10, mass = 8,05 g \pm 1,91 (1SD) n = 10; Mean female SVL = 67,0 mm \pm 5,86 (1SD) n = 6, mass = 5,89 g \pm 1,97 (1SD) n = 6.

Distribution

Endemic to the north-western Transvaal.

Distribution in Transvaal (Map 112).

Blackhill 317LR; Sweethome 315LR; The Park 266LR.

Habitat and Ecology

An exclusively rupicolous species found inhabiting crevices on the larger rocky outcrops on hillsides and on the flats. Found in veld types 18 and 19 at altitudes of 1200 m above sea level. Also found within 50 m of outcrop containing both P. minor and P. guttatus. Oviparous, two eggs are laid at a time during November.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. A very localised, rare species only known from small areas within 4 km of each other. It is not found in any provincial nature reserve. A localised endemic found on rocky outcrops its status is currently rare and should be monitored as far as population size is concerned. No exploitation of the species is to be considered.

Remarks

In lepidosis this form is very similar to P. i. parvus, but has higher dorsal and femoral pore counts. The tail is also shorter than that of parvus in relations to total length. The most pronounced difference is however the colour, which makes this species unique in South Africa. On these grounds and considering the paucity of definitive morphological characters in general, within the Platysaurus genus as a whole, I consider this to be a separate species. This is made very evident with the occurrence of P. i. parvus on the opposite side of a valley, which effectively prevents sympatry due to the inability of Platysaurus lizards crossing areas devoid of rock.

SUBORDER: AMPHISBAENIA

Family AMPHISBAENIDAE

Genus Monopeltis A. Smith, 1848

Monopeltis A. Smith, 1848, Ill. Zool. S. Afr., Rept., pl. LXVII. Type: By monotypy, M. capensis A. Smith.

Face strongly flattened dorsoventrally. Nasal bones of skull separated medially by premaxilla but contributing to the anterior edge of the shield. Lower jaw with two postarticular processes. Prearticular not fused to articlarsurangular. Dentition 1-5 (premaxilla), 3-4 (maxilla) and 6-7 (dentary). Integument of head formed into one or two azygous cephalic shields that are almost always extensively keratinized. Nasal shields separated by the rostral. Pectoral region always modified, generally covered by very much enlarged, smooth, and thickened shields. Precloacal pores present or not. Caudal tip rounded; autotomy may occur (Broadley, Gans & Visser 1976. (Broadley et al, 1976) have extensively revised the genus including three species which are found in the Transvaal. One taxon, capensis is found to be polymorphic with three forms A, B and C occurring in the Transvaal indicating considerable geographic variations. One species M. leonhardi Werner is only known to date from the western boundary of the Kruger National Park. It appears to be a relict of Kalahari conditions, a feature supported by the occurrence of a relict population of Typhlosaurus lineatus also a Kalahari species not far away. Several other examples exist which indicate and support the theory of the aeolian sands reaching as far as the eastern border of the Kruger National Park.

Key to the Transvaal species

1. Body annuli less than 222; super-
numerary dorsal half annuli usually present ... 2
Body annuli 228-284; Supernumerary dorsal
half annuli few or absent M. sphenorhynchus
sphenorhynchus

2. Two discrete azygous head shields; dorsal
pigmentation uniform from nuchal region to
tail tip and extending ventrally to the
lateral sulci M. leonhardi
Azygous head shields usually fused in
adults; dorsal pigmentation (if present)
patchy and not extending below the lateral
sulci M. capensis

Monopeltis capensis A. Smith, 1848

Monopeltis capensis A. Smith, 1848, Ill. Zool. S. Afr.
pl. 67. Type locality: W. Transvaal - lat. 24°S. near
the junction of the Limpopo and Motwan rivers
(FitzSimons, 1943).

Monopeltis capensis capensis A. Smith. FitzSimons,
1943, p. 391, figs. 279-281; Pienaar 1966, p. 98, pl.
37; 1978, p. 113, pl. 46; Broadley, Gans & Visser 1976,
p. 385, figs. 45-54; De Waal, 1978, p. 76; Pienaar et
al 1983, p. 122, pl. 51; Welch 1982, p. 10; Auerbach
1987, p. 140, pl. 13, fig. 7; Branch 1988a, 107, pl. 41,
1988b, p. 11.

Monopeltis decosteri Boulenger. FitzSimons 1943, p. 395,
figs. 289-292.

Description: 16 Specimens examined. Broadley et al (1976) comprehensively revised the genus. They recognised three groups and a subspecies within the species "capensis". The three groups occur within the Transvaal while the subspecies is found to the north. The paucity of additional material prohibits a more detailed analysis of the Transvaal populations.

Colour: An unpigmented to pigmented pink above and below with or without grey-black pigmentation on the tail.

Lepidosis: (After Broadley et al, 1976). Head small; Body cylindrical with scales forming rings around the body (annuli); Tail short and bluntly tapering. The dorsal surface of the head is covered by a single large azygous scale, notched or retaining short lateral sutures. In some juveniles and rarely adults are two discrete head shields present; The head may be concave to convex. A row of 4-6 parietals separates the large head shield from the first body annulus; nostrils crescent-shaped and inserted in moderate nasals which are separated from the oculars, in contact with the lip (group A and C) but separated in Group B. Supralabials 3 with the third being largest; Mental square to pentagonal; LL 3; postmental (genial) large and shield shaped. The modified pectoral region extends from the 7th to 11th dorsal annulus. There are usually six elongate pectorals, the medial pair projecting and narrowing anteriorly. There are 176-221 body annuli from the posterior edge of the 3rd LL up to (but not including) the precloacal shields; there are 26-32 supernumerary dorsal half-annuli, most corresponding to the first 50 body annuli. A midbody annulus has 17-33 dorsal and 12-32 ventral segments. The middorsal segments may be 3-4 times as long as wide; midventral segments may be from 1,5-2 times as long as wide or in Group B, 1,5 times as wide as long. There are 3-6

lateral annuli, the first in contact with two enlarged medial precloacal scales. The terminal segments usually bearing a pair (rarely two pairs) of precloacal pores; There are two (rarely three) pairs of precloacal scales. The tail is short and smoothly rounded with 4-11 caudal annuli. Caudal autotomy absent.

Size: The groups overlap extensively but as a unit range from 160,0-340,0 mm SVL.

Distribution

Angola, South West Africa Namibia, Botswana, Cape Province, Orange Free State, Transvaal and Zimbabwe.

Distribution in the Transvaal (Map 113).

The distribution of the three groups A, B, C (Broadley, et al, 1976) are herewith separately incorporated.

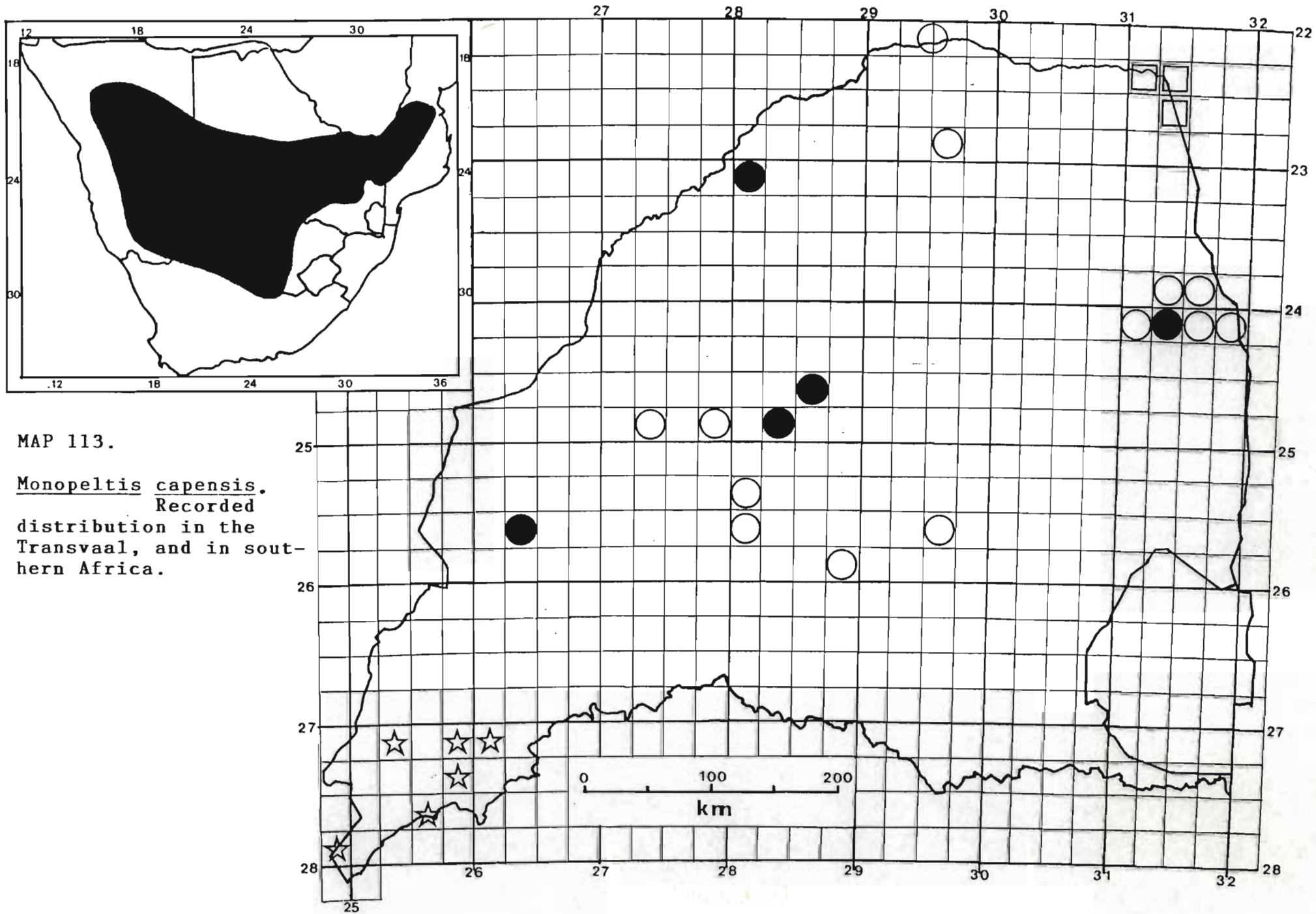
A. Literature Records

Andalusia; Bloemhof; Klipkuil 65HP; Leeudoringstad; Makwassie; Schweizer Reneke; Wolmaransstad. (Broadley et al 1976).

B. Moonlight 111LR; Nylsvley Nature Reserve; Rissik 637MS; Shlaralumi; Tseri River KNP; Vygeboompoort 456KR.

Literature Records

Bezuidenhoutskraal 96JR; Hlanganine firebreak; Northam; Nylstroom; Olifants camp; Olifantsriver; Olifants bridge to Mangwe Induna; Reguit 530KQ, Rhenosterpoort 455KR;



Rochdale 700MS; Schilpadfontein 692KR; Vyeboom;
Warmbaths; Weipe 47MS; Weltevreden 367JS;
Wonderboom; (Broadley et al 1976).

C. Literature Records

Masbambela; Malonga Fountain; Nyandu sandveld;
Nyandu sandveld to Masbambela; Pafuri; Pumbe
sandveld; Pumbe pan to Olifants river;
Saselondonga to Malonga Fountain; Saselondonga to
Pafuri; between Mahlaguza and Nwambiya pans;
between Nwambiyane and Nwambiya pans; W. of Hape
Pan (Broadley et al 1976).

Habitat and Ecology

An entirely fossorial, psammophilous species rarely seen on the surface of the soil and then usually during or after a rain storm. Inhabit areas of sandy-soil at a depth of about 20 cm but usually shallower. According to Broadley et al (1976), up to 50 specimens to the hectare can be expected in virgin ground. They are found in varying veld types 14, 15, 16, 18, 19, 20 and 50 at altitudes ranging from 200-1500 m above sea level. They are primarily insectivorous feeding on various Isoptera species, Coleoptera and also solifuges. Broadley et al (1976) record M. capensis as being ovoviviparous with 1-3 (usually 1) neonates being born in midsummer. A newborn young measured 92,0 mm SVL, T = 7,0 mm.

Conservation Status

Protected, according to the Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in four

provincial nature reserves and likely to occur in others. Also occurs in the Kruger National Park. It appears that all varieties occur in nature reserves. Ploughing appears to influence the species negatively. According to Broadley et al (1976) as many as 90% of individuals ploughed up are killed either by the plough itself or by predatory birds. Therefore in agricultural areas the species is likely to be almost extinct. Only in ranching areas is the survival of the species assured. Currently considered secure, more detailed monitoring of ploughing activities in areas of the species range could give details of range and population size.

Remarks

Broadley et al (1976) recognise three groups or varieties of M. capensis. The specimens found during the survey fit into this arrangement but are still too few to assist in clarifying the taxonomic status of these groups.

Monopeltis sphenorhynchus sphenorhynchus Peters, 1879

Monopeltis sphenorhynchus Peters 1879, Monatsb. Akad. Wiss. Berlin, pp. 273-277. Type locality: Mozambique and Angola; restricted to "Inhambane, Mozambique (Loveridge, 1941, p. 427).

Monopeltis habenichti FitzSimons. FitzSimons 1943, pp. 394-395, figs. 285-288.

Monopeltis capensis gazei FitzSimons. FitzSimons 1943, pp. 393-394, figs. 282-284.

Monopeltis sphenorhynchus sphenorhynchus Peters. Broadley, Gans & Visser, 1976, p. 401, figs. 65-69; Pienaar 1978, p. 114, pl. 47 & 47A; Welch 1982, p. 11; Pienaar et al 1983, p. 123, pl. 52; Branch 1988a, p. 107, pl. 41, 1988b, p. 11.

Description: (after Broadley et al, 1976). 4 Specimens examined.

Colour: Pink with or without darker speckling above. Ventrally immaculate.

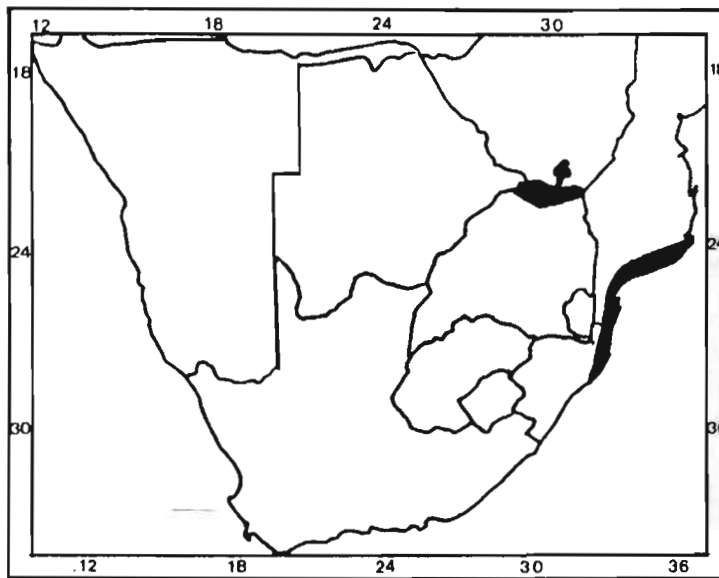
Lepidosis: A relatively slender medium sized Monopeltis with a rounded tip to the tail. Two azygous head shields in juveniles becoming fused to a single large disc in adults exceeding 130,0 mm (Broadley et al, 1976). The ocular notch is absent in large specimens. Head slightly convex in profile; The nostrils are crescent-shaped and inserted into relatively short nasal scales which frequently border or more rarely separated from the lip. Nasals well separated from ocular and each other. Usually 3 UL, although the first may be fused with the nasal; A row of six parietals separates the large head shield from the first body annulus. Mental almost rectangular with 3, occasionally 2 lower labials. Postmental small. The modified pectorals extend from the eighth to the eleventh dorsal annulus, with six elongate segments. There are 228-284 body annuli. Midbody annulus with 22-37 dorsal and 16-31 ventral segments. Middorsal segments approximately four times longer than wide and midventral segments approximately one and a half times to twice as wide as long. There are 3-6 lateral half-annuli. The tail is short, smoothly rounded, with 7-12 annuli. No caudal autotomy observed. Precloacal pores 0-2.

Size: The SVL ranges from 104,0 - 326,0 mm.

Pienaar et al (1983) recorded that the largest KNP specimen measured 260,0 mm in SVL. A specimen with a SVL of 192,0 mm weighed 1,4 g (TM 59134 - River 141MS).

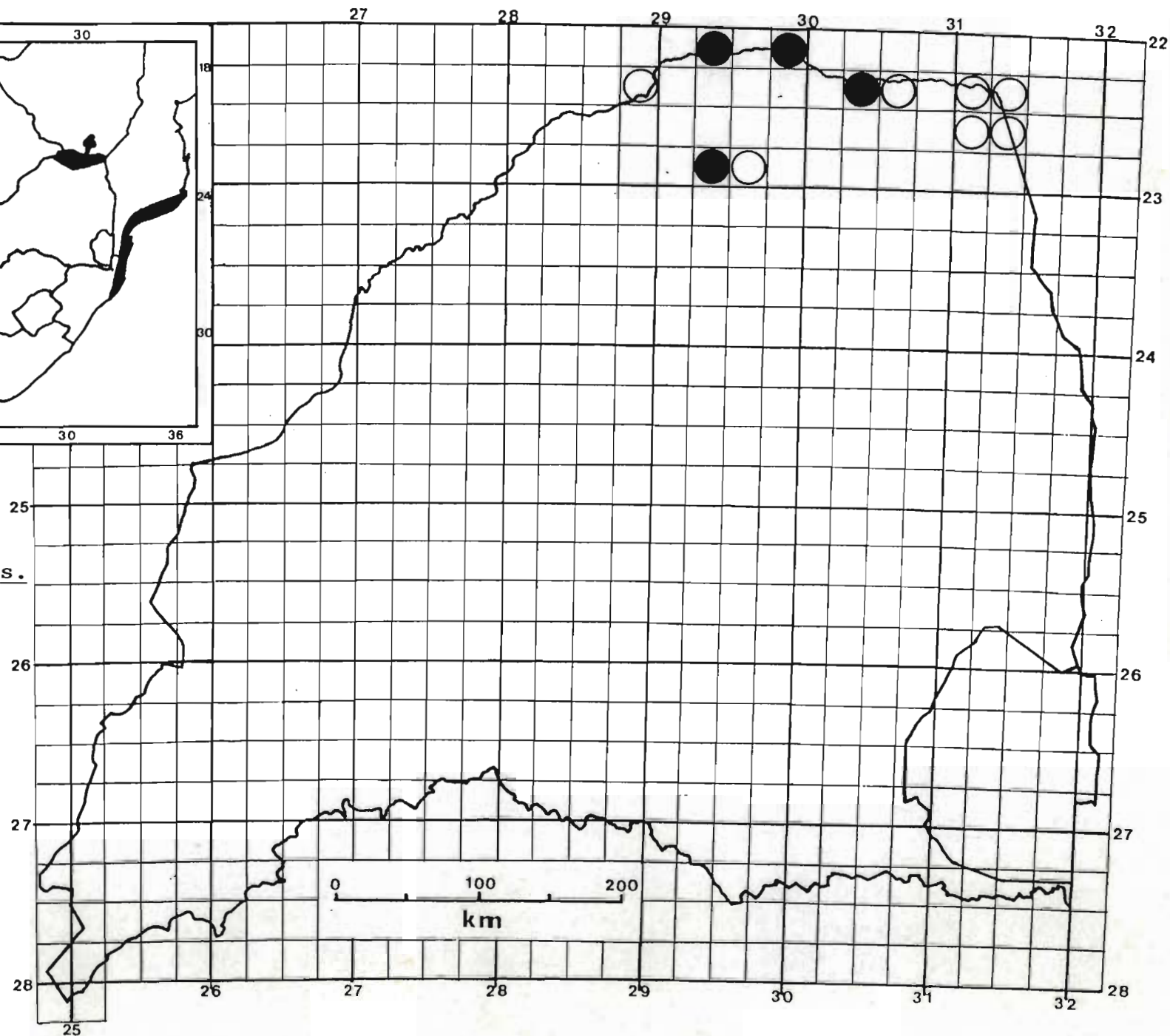
Distribution

Northern Transvaal, Southern Zimbabwe and Mozambique.



MAP 114.

Monopeltis sphenorhynchus sphenorhynchus.
Recorded distribution
in the Transvaal, and
in southern Africa.



Distribution in Transvaal (Map 114).

Greefswald 37MS; River 141MS; Scrutton 23MT; 15 km E. of Langjan nature reserve.

Literature Records

Between Luvuvhu and Matele Rivers; Eastern boundary to Malonga Fountain; Magalakwena/Limpopo River Confluence; Madziringwe firebreak; Malonga Fountain to Nyandu Sandveld; Nwanedzi/Limpopo Rivers confluence; Nyandu Sandveld; Nyandu Sandveld to Masbambela; Pafuri Ranger Quarters western boundary north of Mutale River. Philipstown 390MS; Waterpoort (Broadley et al, 1976).

Habitat and Ecology

A fossorial species usually found in deep sand. Rarely comes to the surface except after heavy rains. Occurs in veld type 15 at altitudes of 200-800 m above sea level. Little is known of the diet of the species. M. s. mauricei Parker apparently includes Hymenoptera (Formicidae) and Lepidoptera larva in its diet (Broadley et al, 1976).

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in the northern KNP and possibly in the Messina provincial nature reserve. The distribution range is largely used for ranching purposes with minimal disturbance to the subsoil. The status of the species is therefore secure.

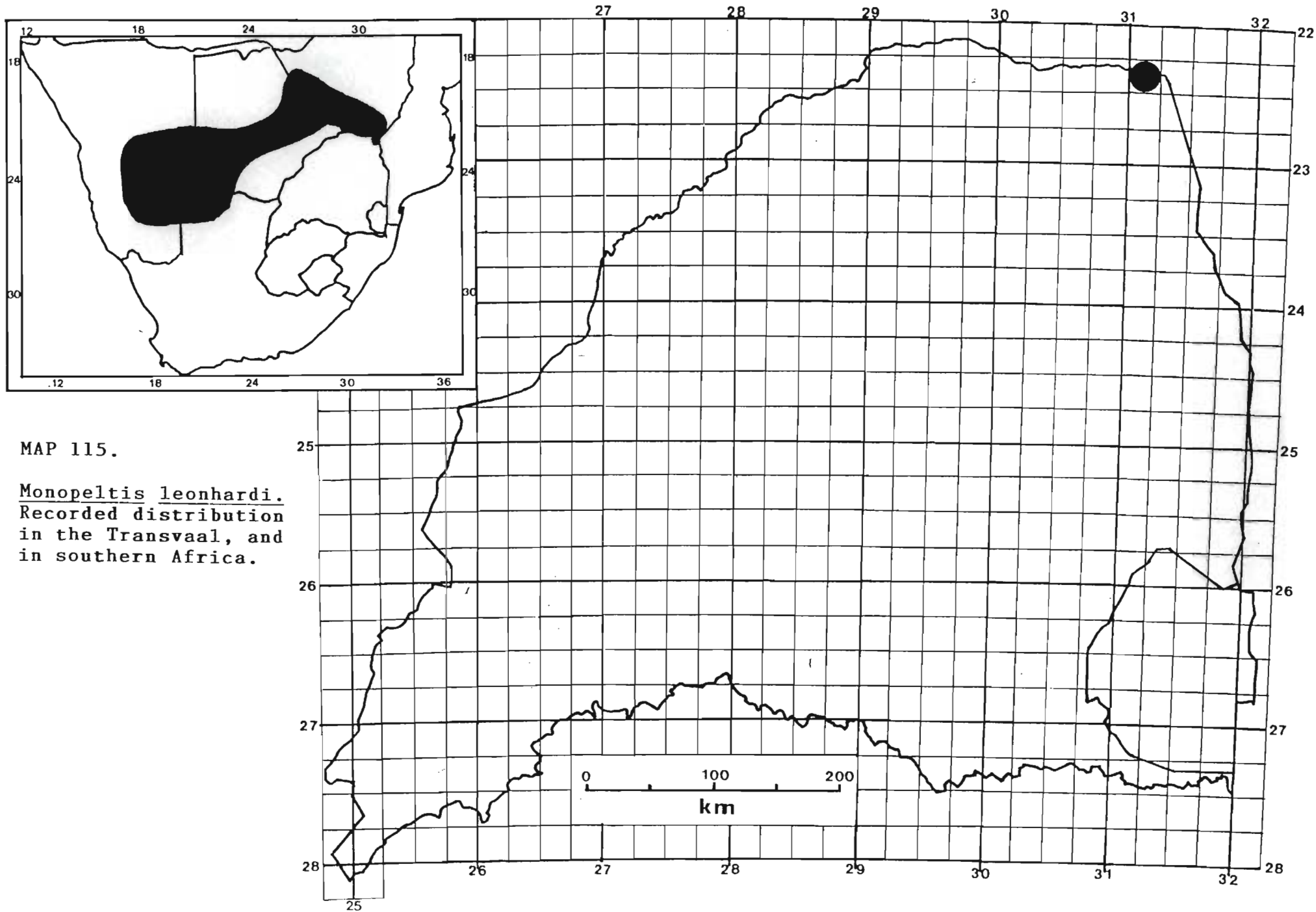
Monopeltis leonhardi Werner, 1910.

Monopeltis leonhardi Werner, 1910(a) Denkschr. Med. Nat. Wiss. Gesell. 16 (4B), p. 328, pl. 6, fig. 2. Type locality: Kgokong to Kang, S.W. Botswana. FitzSimons 1943, pp. 398-400, figs. 296-300; Broadley, Gans & Visser 1976, p. 381, figs 41-44; Pienaar 1978, p. 111, pl. 45; Welch 1982, p. 10; Pienaar et al 1983, p. 121, pl. 50; Auerbach 1987, p. 139; Branch 1988a, p. 106, pl. 41, 1988b, p. 11.

Description: (after Broadley et al, 1976). No additional specimens from the Transvaal examined.

Colour: Purplish-brown to grey above with a darker patch on the tail. Snout, yellowish-pink. Below, uniform vinaceous pink or flesh-coloured (Pienaar et al, 1983).

Lepidosis: A medium sized, robust species with a short tail which tapers to a rounded tip. Body more or less cylindrical. The dorsum of the head is divided into two azygous shields. The anterior shield is slightly concave while the posterior is convex. The eye is usually visible as a dark spot under the ocular. Ocular usually in contact with second upper labial and is bordered posteriorly by a small postocular. Nostrils, crescent-shaped and inserted in relatively short nasal scales, which are well separated from the oculars, the lip and each other. UL 3; Mental more or less square; LL 3; one large postmental. A series of 4-7 (usually 6) parietal shields linking third UL and separates the posterior azygous head shield from the first body annulus; Pectoral region modified extending from 7th - 11th dorsal annulus; There are usually six elongate rectangular pectoral shields (the lateral pair may be more or less broken up); There are 170-213 body annuli excluding precloacal shields. Midbody annulus with 17-34



dorsal and 14-27 ventral segments. Middorsal segments approximately three times as long as wide and midventrals three times as wide as long. Usually 3 or 4 (rarely 5 or 7) lateral annuli. Tail short and rounded with 5-9 caudal annuli. No caudal autotomy and no precloacal pores.

Size: A medium sized species ranging from 200-290 mm SVL in adults. Pienaar et al (1983) record the largest specimen from the KNP as measuring 270,0 mm SVL with a girth of 9,0 mm.

Distribution

South West Africa/Namibia, Botswana, northern Cape Province, north-eastern Transvaal and north-western and south-eastern Zimbabwe.

Distribution in Transvaal (Map 115).

No additional specimens examined.

Literature Records

Western boundary of KNP along Mutale river (Broadley et al, 1978). Between Mutale Beacon and Spokonyolo pan (Pienaar et al 1983).

Habitat and Ecology

Fossorial, apparently restricted to areas of deep Kalahari sand in veld type 15 at an altitude of 300 m. May occur in large concentrations as Broadley et al (1976) report ploughing out four following an erratic course through virgin bush. On another occasion, following heavy rains four specimens were found drowned in a pan while another was recovered from the crop of a

scavenging yellow-billed kite (Milvus aegyptius). May be found in sympatry with other amphisbaenians such as Zygaspis quadrifrons, Monopeltis capensis and Dalophia pistillum. The species apparently feeds on Isoptera including Hodotermes and Odontotermes, Coleoptera larva and Diplopoda.

Conservation Status (RDB 1988, peripheral).

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The known distribution of the species in the Transvaal is restricted to the north-western K.N.P., its position is therefore secure. It is likely to occur in other areas of deep sand in the western Transvaal, and attempts must be made to establish the total distribution of the species in Transvaal. Currently considered peripheral, rare but secure.

Genus Dalophia Gray, 1865

Dalophia Gray, 1865, Proc. Zool. Soc. London, p. 454.

Type: D. welwitschii, by monotypy.

A rare genus of worm lizards represented by only one species in South Africa, D. pistillum which occurs marginally in the Transvaal having only been recorded from the Waterberg. Very similar to Monopeltis, but nasal shields almost always separated by rostral segment, no precloacal pores, generally only a single cephalic shield, always a modified pectoral region, and tip of the tail always squarely truncate and produced into a flattened callous pad (Broadley et al, 1976).

Dalophia pistillum (Boettger, 1895).

Monopeltis pistillum Boettger, 1895, Zool. Anz. 18, p. 62. Type locality: Zambesi, East Africa - restricted to "Boroma, 20 km upstream from Tete, Mozambique" (Broadley, Gans & Visser 1976).

Monopeltis granti granti Boulenger. FitzSimons 1943, pp. 386-387, fig. 267.

Monopeltis granti colobura Boulenger. FitzSimons 1943, pp. 386-387, figs. 268-270.

Monopeltis granti transvaalensis FitzSimons. FitzSimons 1943, p. 389, figs. 271-273.

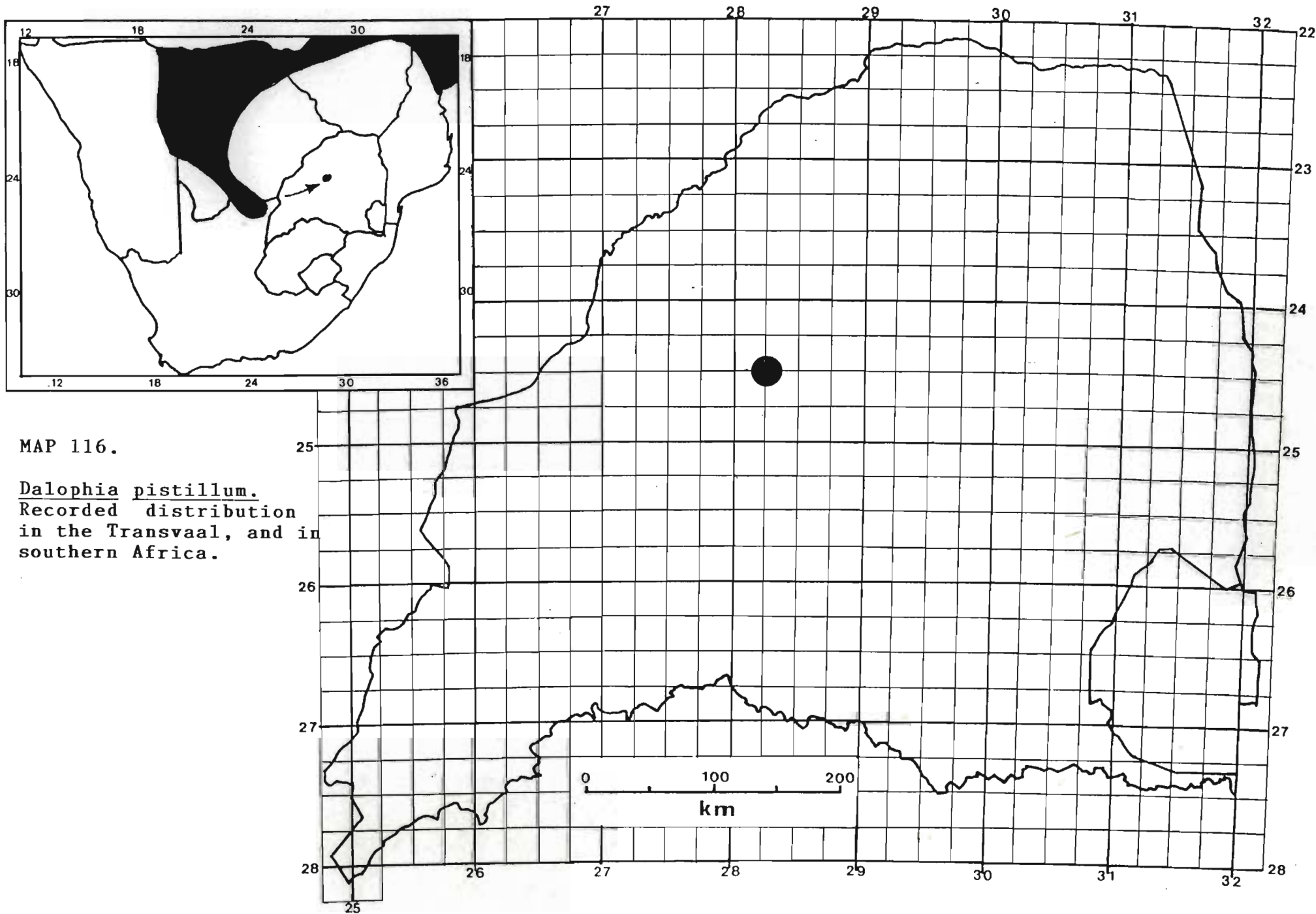
Dalophia pistillum (Boettger). Broadley, Gans & Visser 1976, p. 463, figs. 131-136; Welch 1982, p. 9; Auerbach 1987, p. 142; Branch 1988a, p. 108, 1988b, p. 11.

Description: (after Broadley et al, 1976). No additional specimens examined.

Colour: Pink speckled with grey posteriorly, this colour occasionally extending laterally and even ventrally. Head pale, dirty yellow above.

Lepidosis: A medium to large, cylindrical wormlizard, with a broad head shield and a long bluntly terminated tail. Head shield formed by the fusion of two azygous shields mesially leaving diagonal sutures above the oculars. The head shield is concave anteriorly and convex posteriorly. The eye is usually visible as a dark spot beneath ocular. An elongate triangular postocular is wedged between the outer parietal and third supralabial. Nostrils crescent-shaped, pierced in elongate nasals; nasals usually in contact with oculars rarely separated; Nasals in good contact behind triangular rostral but mostly separated from lip; UL 3, with 2nd largest; Mental squarish; LL 3; a large postmental; The modified pectoral region extends to the ninth to twelfth body annulus. Six elongate shields present, the median pair much widened posteriorly; the lateral pair shorter than the medial ones and correspond to only 2-5 (not six) dorsal half annuli. There are 280-352 body annuli excluding the cloacal shields. A midbody annulus has 17-30 dorsal and 12-17 ventral segments. Middorsal segments are about two to three times as long as wide and midventral segments 1,5-3,0 times as wide as long. The tail is moderately long, slightly flattened dorsally and ventrally, terminating in an unsegmented callous pad. Middorsal segments usually partially or completely fused to form posterior directed chevrons. There are 19-33 caudal annuli. Caudal autotomy not observed.

Size: Moderate to large, Broadley et al (1976) report that the species ranges from 320,0 - 560,0 mm SVL when adult.



MAP 116.

Dalophia pistillum.
 Recorded distribution
 in the Transvaal, and in
 southern Africa.

Distribution

Widespread in southern Africa, ranging from Angola, South West Africa/Namibia, Botswana, Zimbabwe, Zambia, Mozambique, north-western Transvaal and northern Cape Province (Broadley et al, 1976).

Distribution in Transvaal (Map 116).

No additional specimens collected.

Literature Record

Farm "Hope" between Nylstroom and Vaalwater.

Habitat and Ecology

Fossorial, these amphisbaenians are usually found within 20 cm of the surface. They frequently take refuge in the roots of grasses at depths of 10 cm. Broadley et al (1976) reported finding 9 animals in a strip of soil approximately 0,5 ha in extent. Large numbers were also observed by myself while removing vegetation at roadsides in Brachystegia woodland in the Sengwa Wildlife Research Area. Occurs sympatric with several other amphisbaenian species. This species is only known in the Transvaal from the Waterberg in veld type 20 at an altitude of 1200 m. Broadley et al (1976) record the species as feeding on Coleoptera larvae, Isoptera - including Hodotermes and Allodontermes, Hymenoptera - Formicidae (larvae and cocoons).

The species appears to be oviparous laying 2-4 eggs measuring 26,0 - 35,0 x 5,0 - 9,0 mm during late winter and early spring.

Conservation Status (RDB 1988, peripheral).

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. Not found in a provincial nature reserve. Although a peripheral species, its extreme rarity makes it of considerable conservation importance. Not recorded since 1933, the status of the species needs confirmation. Further surveys in suitable habitat are needed.

Genus Zygaspis Cope, 1885

Zygaspis Cope, 1885, Proc. Amer. Phil. Soc. 22, p. 187.

Type: Amphisbaena quadrifrons Peters, by monotypy.

the genus is represented by two species in the Transvaal, one in the north and west and one in the east. During this survey sympatry between the two species was observed supporting their taxonomic status. Broadley & Gans (1978a) reviewed Z. violacea (Peters) discussing its relationship to other species and genera particularly Amphisbaena. They concluded that there was sufficient grounds for maintaining Z. quadrifrons, Z. violacea and Z. niger in Zygaspis "until an overall review of generic affinities in the family can be completed".

Key to the Transvaal species.

- 1. A pair of discrete preoculars
separate the prefrontals from the
oculars Z. quadrifrons
- Preoculars fused with pre-
frontals Z. violacea.

Zygaspis quadrifrons (Peters, 1862)

Amphisbaena quadrifrons Peters 1862, Monatsb. Akad. Wiss. Berlin, p. 25. Type locality: Neu Barmen, Hereroland, S.W.A./Namibia.

Amphisbaenia quadrifrons quadrifrons Peters. FitzSimons, 1943, pp. 377-378, figs. 252-254.

Zygaspis quadrifrons (Peters). Saiff 1970, p. 113; Broadley & Gans 1975, p. 21; Broadley & Gans 1978a, p. 319; Pienaar 1978, p. 107, pl. 42; Pienaar et al 1983, p. 116, pl. 47; Auerbach 1987, p. 138, pl. 13, fig. 6; Branch 1988a, p. 105, pl. 42, 1988b, p. 11.

Zygaspis quadrifrons capensis (Thominot). Pienaar 1966, p. 94, pl. 34.

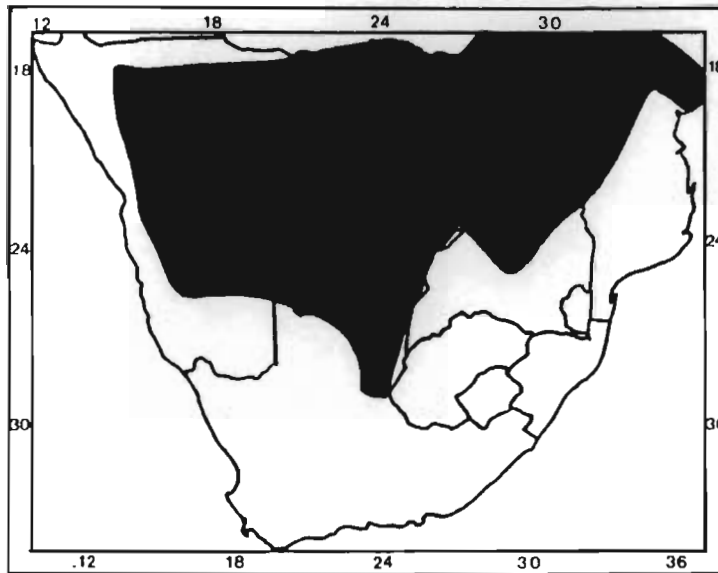
Zygaspis quadrifrons quadrifrons (Peters). Welch 1982, p. 11.

Description: 56 Specimens examined.

Colour: Pink anteriorly becoming brownish pink to dark vinaceous and purple brown posteriorly, being darkest on the tail. Ventrally pale pink becoming darker posteriorly.

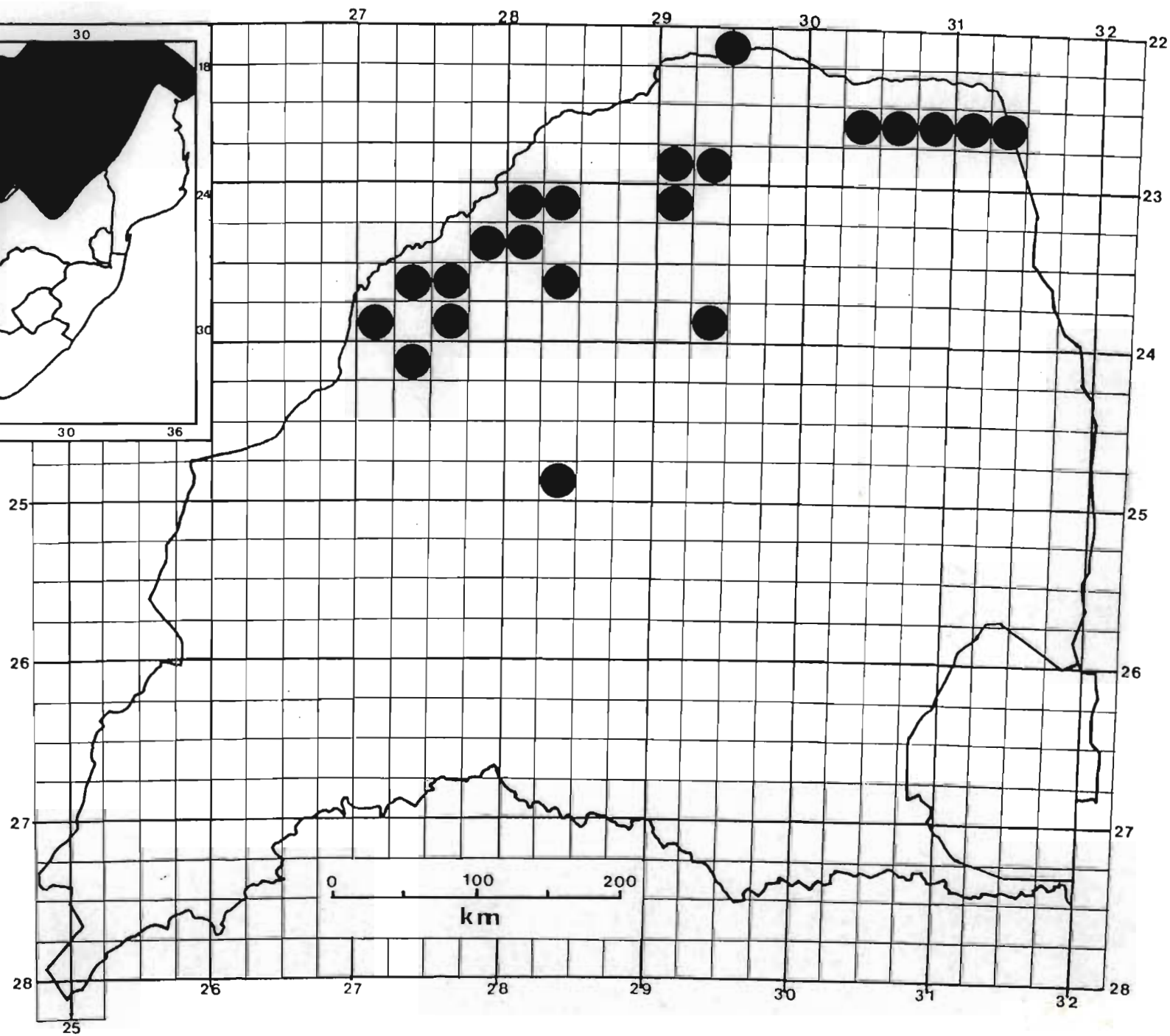
Lepidosis: A small, stout amphisbaenian with a rounded snout. The tail terminates in a rounded tip. Tail between 13,09 - 15,76% (mostly in excess of 14,0%) of total length. Rostral small; nostril pierced in anterior portion of nasals; nasals in broad median contact and with 1st upper labials; prefrontals elongate and in contact mesially along their entire length; no frontal; a pair of large postfrontals in broad median contact; a pair of small polygonal parietals often reduced to one or absent; a pair of small occipitals forming part of annulus on the nape. Temporals 5-11, the upper anterior in contact with postfrontal; preocular 1; ocular shield 1, eye visible as a dark spot under shield; ocular in contact with 2nd and 3rd upper labial; UL 3; Mental longer than broad; LL 3; postmental large, penta- to heptagonal. Body annuli 190-228 (mostly 200-220); segments at midbody 14-21 (mostly 15-19) dorsally and 12-18 (mostly 15-18) ventrally. The two median rows of segments twice as broad as long. A distinct lateral line between dorsals and ventrals present; four rarely 6 enlarged elongate anal segments; precloacal pores 4. Caudal annuli 38-50. Caudal autotomy present with 13/55 (23,64%) of tails truncated. Autotomy ring 10-12 caudal annuli.

Size: Largest male SVL = 167,0 mm (J1509 - Moonlight 111LR), mass = 2,65 g (J1509); Largest female SVL = 188,0 mm (J1566 - Melinda 164LR), mass = 3,1 g (J1566).



MAP 117.

Zygaspis quadrifrons.
Recorded distribution
in the Transvaal, and
in southern Africa.



Mean male SVL = 148,87 mm \pm 13,99 (1SD) n = 8, mass = 2,05 g \pm 0,41 (1SD) n = 8; Mean female SVL = 135,88 mm \pm 33,87 (1SD) n = 25, mass = 1,60 g \pm 0,86 (1SD) n = 26.

Distribution

Angola, Zaire, Zambia, Zimbabwe, Mozambique, northern Transvaal, Botswana, northern Cape Province and South West Africa/Namibia.

Distribution in Transvaal (Map 117).

10 km W. of Punda Milia; 4 km N. of Tshamavhudzi Peak; Bronkhorstfontein 42LR; Dansfontein 40LR; Ellisras; Glenover 371LQ; Greenfield 333MS; Gumela; Kalkfontein 84LR; Klipfontein 11KQ; Loopleegte 302LQ; Mahlaguza; Melinda 164LR; Moonlight 111LR; Nyandu Sandveld; Pietersburg; Pieterman 445LR; Punda Milia; Smithfield 456MS; Tambotiekloof 607LQ; Tilburg 145LQ; Tshitangzhe; Urk 10LS; Vergulde Helm 316LQ; Vorstersloop; Warmbaths; Weipe 47MS; Welgevonden 444LQ.

Literature Records

Matukwane ridge near Punda Maria camp; eastern boundary between Mathlakuza pan and Saselandonga gorge; eastern boundary between Nwambiya and Mathlakuza pan; between Mahembane and Magovane; Malituve near Punda Maria; between Madziringwe turn-off and Tsumanene; between Tsumanene and Mahembane windmills (Pienaar et al 1983). Klipfontein 53KR, (NMZB).

Habitat and Ecology

A fossorial species inhabiting varying habitats from deep Kalahari sand to more loamy and even clayey soil. Usually found under stones or rotting logs either on the surface or slightly buried in the sand. Occupies a variety of vegetation types such as 14, 15, 18 and 19 at altitudes of 250-1200 m above sea level. In some areas concentrations of these lizards are found particularly in the north western Transvaal. Feeds largely on Isoptera and Hymenoptera (Formicidae) together with other small insects and their larvae.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species appears to have a narrow, relatively peripheral distribution in the Transvaal. It occurs in the northern Kruger National Park and probably also in both the Messina and Langjan nature reserves. Its habitat is mainly utilised for ranching purposes and the species is secure.

Remarks

Broadley & Gans (1978a) observed that the species does not occur sympatrically with Z. violacea (Peters). However during this survey the two species were found in sympatry at Mahlaguza pan in the north-eastern K.N.P.

Zygaspis violacea (Peters, 1854)

Amphisbaena violacea Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 620. Type locality: Inhambane, Mozambique.

Amphisbaena violacea violacea Peters. FitzSimons 1943,

pp. 378-380, figs. 255-257.

Amphisbaena violacea vandami FitzSimons. FitzSimons 1943, pp. 380-381, figs. 258 & 259.

Zygaspis violacea (Peters). Broadley & Gans 1978a, pp. 319-334, figs. 1-8; Pienaar 1978, p. 109, pl. 43; Welch 1982, p. 12; Pienaar et al 1983, p. 118, pl. 48; Branch 1988a, p. 105, 42 pl, 1988b, p. 11.

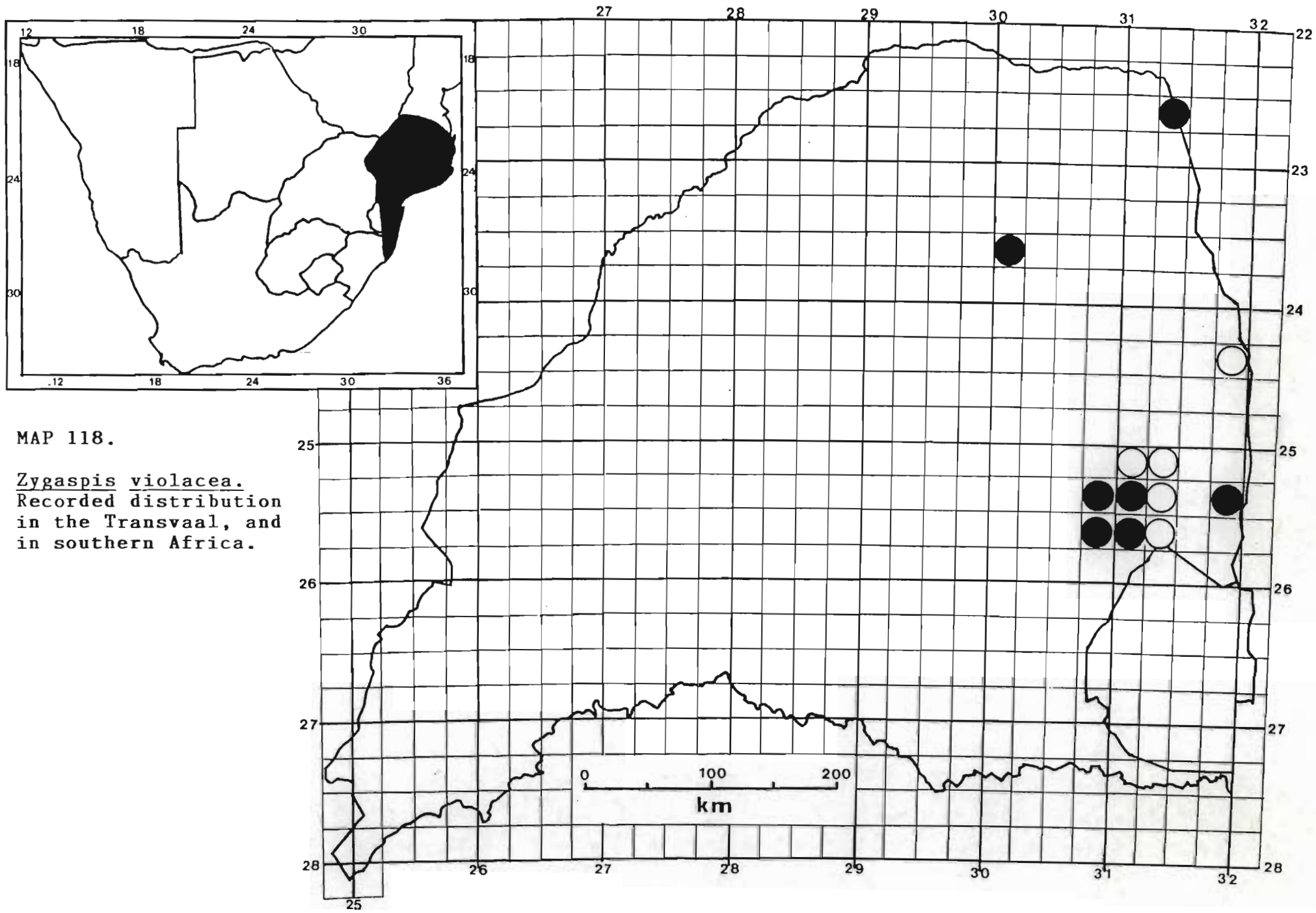
Zygaspis violacea violacea (Peters). Pienaar 1966, p. 95.

Zygaspis violacea vandami (FitzSimons). Pienaar 1966, p. 95, pl. 35.

Description: 20 Specimens examined.

Colour: A pink snout and lower portion of head. Crown of head pinkish brown to brownish purple, this colour becoming darker posteriorly. Ventrally pink to pinkish purple.

Lepidosis: Head small, snout rounded; Body robust and circular. Tail ends in a rounded tip. Tail from 15,44 - 18,63% of total length. Rostral triangular; nostril pierced near tip of snout; nasals in broad contact behind rostral; prefrontals and preoculars fused and in broad median contact behind nasals; no frontal; a pair of large postfrontals in broad median contact; parietals small, quadrangular and highly variable occasionally fusing to form a single pair of elongate shields; two to six temporals including one or two temporals and one or two postoculars; supralabials 3; small ocular shield covering rudimentary eye; Mental longer than wide to wider than long, blunt posteriorly; 2 postmental shields present; infralabials 3. Body covered in annuli numbering 183-206 from behind head to above cloaca; midbody annulus contains 14-17 dorsal and 14-16 ventral segments. There are 4 precloacal pores on the last body annulus anterior to cloaca; 4-8 (mostly 6) precloacal segments; Tail short but slightly tapered and



rounded at the apex with 43-51 annuli. Caudal autotomy present with autotomy line varying from 9-11 caudal annuli. Natural autotomy was only observed in 1/20 (5%). Size: Largest SVL = 143,0 mm (J6737 - Mahlaguza), mass = 1,55 g (N7766 - Broedershoek 129JU). Broadley & Gans (1978a) recorded specimens from Lake St. Lucia and the Pumbe sandveld in the K.N.P. measuring 185,0 mm and 172,0 mm respectively.

Distribution in Transvaal (Map 118).

1 km. E. of Border Hotel, Barberton District; 6 km S. of Nelspruit; Boschjeskop 251JT; Broedershoek 129JU; De Hoop 203JU; Friedenheim 282JT; Mahlaguza; Nelspruit Nature Reserve; The Hippos 192JU; Turbine Waters.

Literature Records

Eastern boundary, Beacons A to B; Louws Creek; Newukop; Panamana dam; Pretoriuskop; Pumbe Sandveld; Shabene Kop; White River, (Broadley & Gans 1978a). Khandizwe, (Pienaar et al 1983).

Habitat and Ecology

A small fossorial species restricted in distribution to the eastern Transvaal lowveld in veld types 9, 10, 11 and 15 at altitudes of 150-1000 m above sea level. Usually found under rocks or logs in shaded areas. Substrates vary from sandy to loamy. The worm lizards are usually solitary under single rocks but neighbours may be only a few metres away. Little else is known of this secretive species.

Conservation Status

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs mostly within the Kruger National Park and can therefore be regarded as secure.

Remarks

Broadley & Gans (1978a) (figures 2 & 3) discuss the geographic variability of the species. Owing to the limited availability of specimens these possibly do not portray the full picture. The species has a greater range of body annuli than previously considered. A specimen from the north-eastern Transvaal has 206 body annuli, while all other more eastern specimens have 200 and therefore fit in well with the findings of Broadley & Gans (op. cit). The species also has a wider distribution in the Transvaal, being found near Duiwelskloof and is sympatric with Z. quadrifrons in the Wambiya sandveld of the north-eastern KNP.

Genus Chirindia Boulenger, 1907

Chirindia Boulenger, 1907, Amer. Mus. nat. Hist. (7), 20, p. 48. Type: C. swynnertoni Boulenger.

Small worm lizards, fossorial and secretive, Broadley & Gans (1978b) recently reviewed the southern forms of the genus including the only member which occurs in the Transvaal, C. langi FitzSimons. They are characterised by the rounded snout and reduced number of head shields. These authors reported on an "aberrant" specimen from Wylliespoort in the northern Transvaal. Subsequently Jacobsen (1984) described a new subspecies "occidentalis" on the basis of additional specimens collected during the survey of the herpetofauna of Transvaal.

C. langi langi shows a strong correlation with the distribution of Androstachys johnsonii or Msimbiti but this terminates west of Louis Trichardt. C. l. occidentalis appears less "dependent" on msimbiti and is found in dry open, stony woodland/scrub.

Key to the Transvaal subspecies.

1. Body annuli 269-309; preanal pores
in males usually 4 C. l. langi
- Body annuli 242-262; preanal pores
in males usually 6 C. l. occidentalis

Chirindia langi langi FitzSimons, 1939

Chirindia langi FitzSimons 1939, Ann. Tv1. Mus. 20, p. 8, figs. 5-8. Type locality: Punda Maria, NE Transvaal. Broadley & Gans, 1978b, pp. 29-51, figs. 1-17; Welch 1982, p. 6. Pienaar 1966, p. 97, pl. 36, 1978, p. 110, pl. 44; Pienaar et al 1983, p. 119, pl. 49.

Amphisbaena langi (FitzSimons). FitzSimons 1943, pp. 381-382, figs. 260-263.

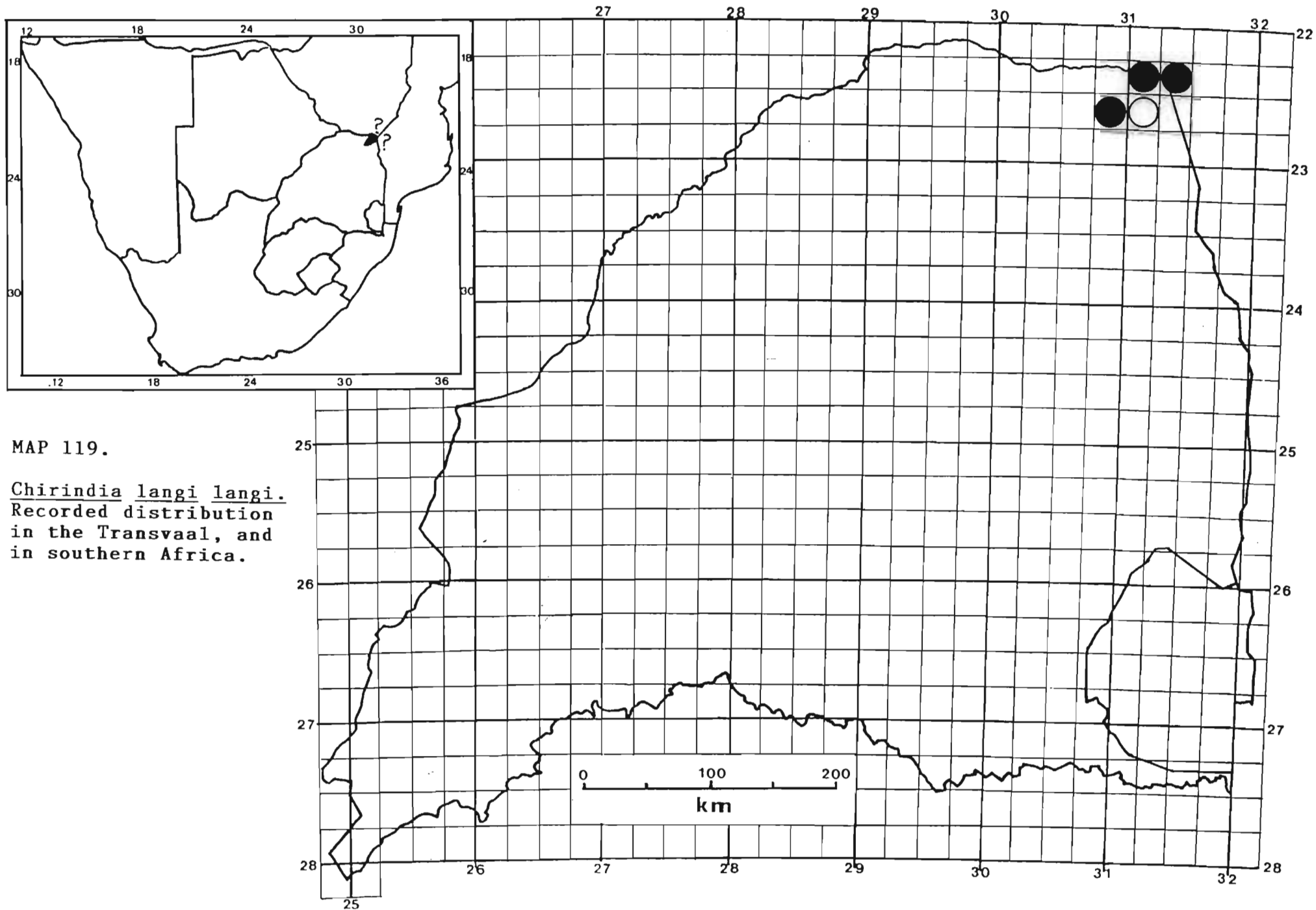
Chirindia langi langi FitzSimons. Jacobsen 1984, pp. 391-397, figs. 3-5; Branch 1988a, p. 104, pl. 42, 1988b, p. 11.

Description: 22 Specimens examined.

Colour: Pale pink to pink throughout.

Lepidosis: Small slender amphisbaenians with inconspicuous head and rounded snout. Body cylindrical tapering shortly to a rounded tail tip. Tail moderate ranging from 8,49 - 11,56% (mostly between 10,0 - 11,5%) of total length. Rostral small and triangular, narrowly separating nasorostrals anteriorly; nostrils pierced near tip of snout; nasorostrals in broad median contact; two frontals in broad median contact and with ocular, 2nd supralabials and two parietals. Parietals in broad contact and with four occipitals. Laterally the nasorostral is followed by two supralabials. The first extends upwards to include the ocular which in some specimens is subdivided to form a discrete ocular. Occasionally an incomplete suture extends forwards from the anterior margin of the 2nd supralabial onto the nasorostral. Temporals 4-6; occipitals 3-4; supralabials 3. Mental triangular; LL 3, first largest and in narrow contact behind mental; one small postmental present; two sublabials bordering posterior lower labials. Body annuli 269-309 (mostly 280-300); segments at midbody 27-30; usually 6 cloacal shields but these may be subdivided; cloacal pores mostly 4, rarely 3,5 or 6. Tail long with 24-30 caudal annuli. Caudal autotomy present with 14/72 (19,44%) of tails truncated between 8-11 caudal annuli.

Size: Largest SVL = 145,0 mm (JN287 - 4 km S. of Tshamavhudzi peak) a mass = 0,8 g (J6702 - Gwalali, KNP).



MAP 119.

Chirindia langi langi.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Mean SVL = 132,98 mm \pm 14,47 (1SD) n = 22, mass = 0,54 g \pm 0,13 (1SD) n = 20. Broadley & Gans (1978) recorded several specimens exceeding the maximum SVL observed during this survey. Their largest specimen measured 158,0 mm SVL.

Distribution

Endemic to the north-eastern Transvaal but is likely to occur in adjacent Mozambique.

Distribution in Transvaal (Map 119).

4 km S. of Tshamavhudzi Peak; Gwalali; Mabyeni Hill; Shabaku.

Literature Records

Below western boundary north of Mutale river; western boundary between Luvuvhu and Mutale rivers; Bobomene; Hape pan; Pafuri; Papkuilfontein to Luvuvhu river; Mahembane to Magovane; Punda Milia; eastern boundary between Pafuri and Saselondonga spruit; eastern boundary between Nyandu sandveld and beacon 7, (Broadley & Gans 1978b).

Habitat and Ecology

Small fossorial amphisbaenians occurring on both north and south-facing slopes. This species appears to be particularly abundant in the sandy Kalahari soils of the northern Kruger National Park but may also inhabit clayey mopani (Colophospermum mopane) woodland. The distribution is especially centred around that of the Lebombo ironwood (Androstachys johnsonii) with 78% of specimens having been found in this habitat. Most

individuals were found under rocks either on the soil surface or in burrows, but on occasions rotting logs also provide a haven. The rocks are usually in partial shade. They are found in veld types 8, 15, 18 and 19 at altitudes ranging from 230-1400 m above sea level.

They are mostly solitary under rocks although occasionally pairs are found. On one occasion five were found under a rotting log in sandy soil. Their distribution within their habitat is patchy and local concentrations occur. Thus at Mabyeni Hill a total of nine were found in an area of 400 m². Some were under adjacent rocks while others were more dispersed. Little is known of their diet but captive specimens readily consumed termites.

Conservation Status (RDB 1988, Restricted)

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. Its distribution falls largely within the extreme northern Kruger National Park and the species can be considered secure.

Remarks

Broadley & Gans (1978b) discussed possible competitive exclusion between Chirindia and Zygaspis, a feature which appears to be responsible for the distribution gap between the two races of Chirindia langi.

Chirindia langi occidentalis Jacobsen 1984

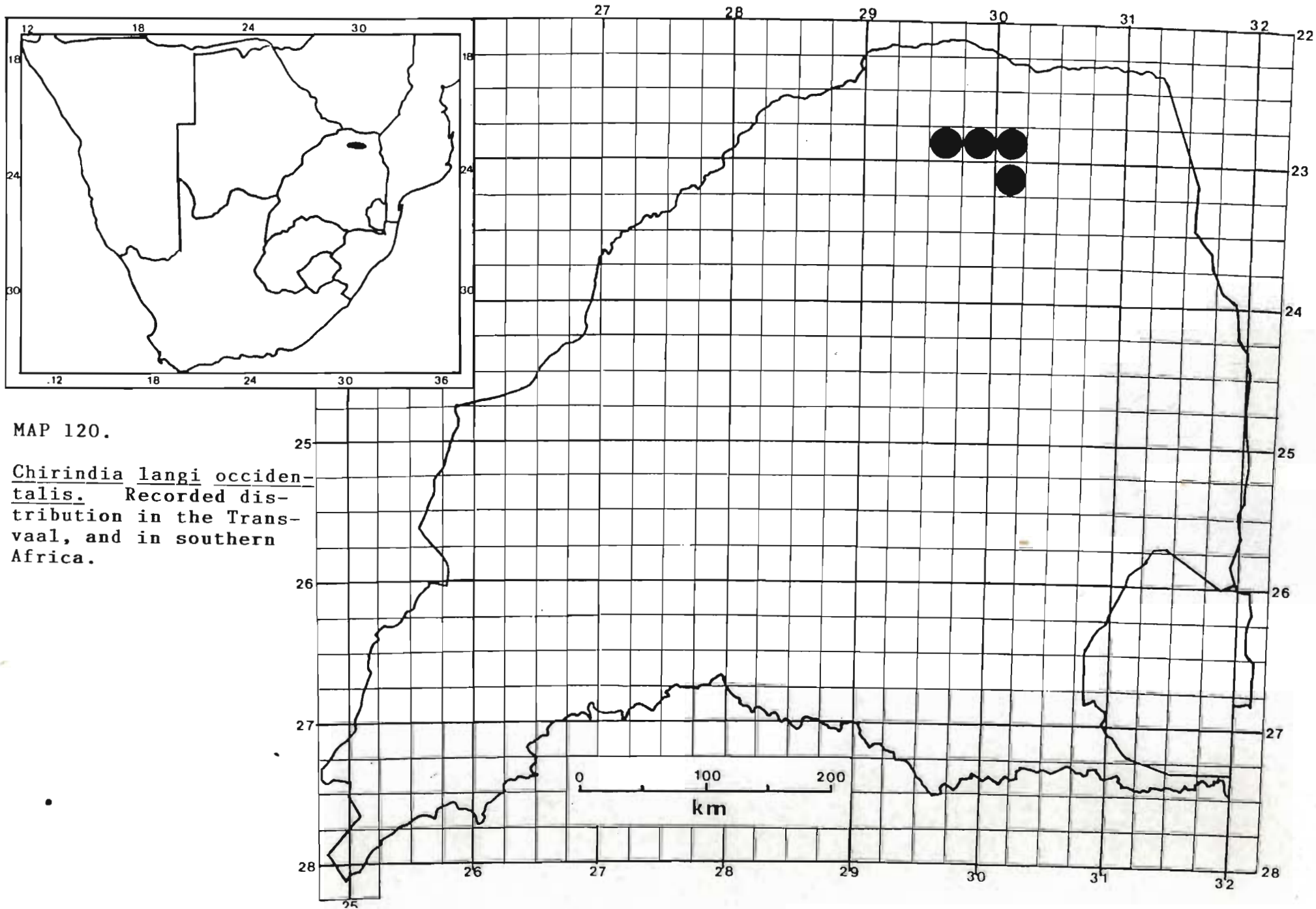
Chirindia langi occidentalis Jacobsen 1984, Ann. Tv1. Mus. 33 (26), pp. 391 - 397, figs. 1-5. Type locality: Farm Crimea 747MS, N. Transvaal. Branch 1988a, p. 104, 1988b, p. 11.

Chirindia langi FitzSimons. Broadley & Gans, 1978b (part), pp. 29-51, figs. 1-17.

Description: 20 Specimens examined.

Colour: Uniformly pink throughout.

Lepidosis: A small cylindrical amphisbaenian but stouter than "langi". Snout rounded and slightly bulbous. Tail long and shortly tapered to a rounded tip. Tail equivalent to between 9,32 - 13,04% (mostly 10,0 - 12,0%) of total length. Rostral large, extending posteriorly; nostril pierced near anterior margin of snout; nasorostrals large and in broad median contact; nasorostrals followed by a pair of frontals, followed by a pair of parietals which abutt onto 3-4 occipitals. Laterally, nasorostral is followed by two supralabials. The first extends upwards to include the ocular; ocular in rare instances is discrete. Similar to "langi" a short suture extends from the anterior part of the first supralabial onto the nasorostral in rare instances. Temporals up to 6; supralabials 3 (including nasorostral). Mental triangular to subtriangular; infralabials 3; a small triangular postmental present; two sublabials flanking posterior lower labials. Body annuli 242-262 ($X = 254,45 \pm 5,76$ (1SD)), with 28-35 (mostly 32-34 (70%)) segments per annulus at midbody. Precloacal plate with 6-8 scales; precloacal pores in males 6 rarely 2,3 or 5; tail long with 24-29 caudal annuli. Caudal autotomy present with 3/20 (15,0%) of tails truncated. The autotomy ring appears between the 9-10 annuli.



MAP 120.

Chirindia langi occidentalis. Recorded distribution in the Transvaal, and in southern Africa.

Size: Largest SVL = 145,0 mm (N7458 - Vhuswinzhe), mass = 1,15 g (N7457 - Vhuswinzhe); Mean SVL = 125,58 mm \pm 13,33 (1SD) n = 18, mass = 0,75 g \pm 0,22 (1SD) n = 6.

Distribution

Endemic to the Soutpansberg, Transvaal.

Distribution in Transvaal (Map 120).

Crimea 747MS; Delamare 731MS; Entabeni Forest Reserve 251MT; Mpefu Location 202MT; Overwinning 713MS; Parkfield 725MS; Robertson 748MS; Vhuswinzhe; Wyliespoort 725MS.

Habitat and Ecology

This subspecies is less associated with Lebombo ironwoods (Androstachys johnsonii) than the nominate form, and many specimens were found in mixed bushveld typical of the climatic and edaphic conditions in this area. These include veld types 8, 18 and 19 at altitudes ranging from 800-1300 m above sea level.

Most specimens were found singly under stones or rocks partially buried in sandy soil, usually on the soil surface or in burrows with the rock as a roof. The rocks were usually in partial shade. On rare occasions (6%) amphisbaenians were observed under rotting logs. This subspecies appears to be less gregarious than the nominate form.

Conservation Status (RDB 1988, restricted).

Protected. Schedule 2, Transvaal Nature Conservation Ordinance 12 of 1983. The species has not been found to

date in a provincial nature reserve. Its rarity and sporadic occurrence coupled with its habitat of stony hillsides renders it secure from most threats. Exceptions would incorporate excessive defoliation of the vegetation, large scale habitat destruction and commercial exploitation.

Remarks

The taxonomic justification for this subspecies was briefly discussed under the nominate subspecies. A recently acquired specimen of C. l. langi had a very low count of 269 body annuli, bringing it closer to that of occidentalis, but geographic separation is still apparent as well as many other attributes such as the six precloacal pores and greater number of segments per midbody annulus.

ORDER : SQUAMATA
SUBORDER: SERPENTES
Family : TYPHLOPIDAE

Genus: Typhlops Opperl, 1811

Typhlops Opperl, 1811, Ordn. Fam. Gattung Rept., p. 54.
Type: Anguis lumbricalis Linnaeus.

A genus of fossorial snakes characterised by having a highly degenerated and specialised skull as well as other anatomical features. The former is much shortened, lacking an ectopterygoid and therefore an incomplete palatomaxillary arch. Teeth are mostly lacking only a few being found on the loosely attached maxilla near the front of the jaw. Lower jaw without teeth. Head not distinct from neck. Rostral shield, nasal, ocular and preocular large; nasal shield more or less divided by a diagonal cleft. Mouth small, situated underneath and posteriorly to the nostrils; upper labials 4 (exceptionally 3). Eyes visible or hidden, through or under the ocular shields, and are sensitive to light.

Unlike the Leptotyphlopidae these snakes have a tracheal lung and lack an enlarged scale in front of the cloaca.

Body cylindrical, covered in smooth, imbricate scales above and below; vestiges of the pelvic girdle present. Tail very short being contained in total length 55 times, a special adaptation to allow these snakes to move forwards or backwards in their burrows. Oviparous to ovo-viviparous. Three species and one subspecies occur in the Transvaal, of which two species are in need of revision.

Key to the Transvaal species

1. Snout more or less rounded in profile;
ventrally width of head more than twice
width of rostral at level of nostrils.
Body robust, diameter 25-37 times into
total length. 30-34 scales at midbody T. bibronii
Snout with a sharply angular,
keratinized horizontal edge in adults;
ventrally width of head less than twice
width of rostral at level of nostrils.
Usually 24-44 scales at midbody 2

2. 24-28 (usually 26) scales at midbody;
maximum length 333,0 mm. Each dorsal
scale with a grey to brown centre, the
size of the spots decreasing laterally T. lalandei
30-44 scales around midbody; dorsal
scales with lateral edges dark, forming
narrow dark longitudinal lines or with
irregular black blotches or speckling;
maximum length 950,0 mm 3

3. Midbody scale rows 36-41; rostral
unguiform in dorsal view, length/width
ratio 1,14-1,54 but usually more than
1,20; dorsum brown to lineolate T. schlegelii
schlegelii

Midbody scale rows 31-36; rostral large,
oval or unguiform, length/width ratio
0,97 to 1,36, usually less than 1,20;
dorsum lineolate to blotched T. schlegelii
mucruso

Typhlops schlegelii schlegelii Bianconi, 1850

Typhlops schlegelii Bianconi, 1850, Spec. Zool. Mossamb., p.13, pl. iii, fig. 1 Type locality: Inhambane, Mozambique.

Typhlops schlegelii schlegelii Bianconi. FitzSimons 1962, p. 73, fig 10, pls ii & iv; 1966, p. 38; Pienaar 1966, p.136; FitzSimons 1970/74, p. 70; Roux-Esteve, 1974, p.166; Pienaar, 1978, p.119; Broadley 1983, p.45, fig. 10; Pienaar et al, 1983, p. 128, pls 54 & 54A; Auerbach 1987, p. 145, pl. 14, fig. 2; Branch 1988a, p. 47, pl. 39, 1988b, p. 11.

Rhinotyphlops s. schlegelii (Bianconi); Jacobsen & Haacke, 1980, p. 10; Welch 1982, p. 127.

Diagnosis: 53 Specimens examined.

Colour: Variable but mostly yellow-brown with dark brown to blackish irregularly more or less transversely disposed spots or blotches or with longitudinal darker lines presenting a striped effect. Underparts a uniform straw yellow. Young specimens usually grey or bluish-grey with numerous blackish spots and blotches, and lateral edges of scales more or less darkened. Ventrally, the underside may have a pinkish tinge, particularly in young specimens (vide Pienaar et al, 1983).

Lepidosis: Snout prominent, with moderate to sharp cutting edge in adults. Rostral unguiform in dorsal view, with a length/width ratio 1,14 to 1,54 but usually more than 1,20; Body stout, diameter 23 to 40 times into total length. Scales 36 to 41 at midbody; scales between prefrontal and tail tip 332-623 (Broadley, 1983). Tail very short, much broader than long and ending in a sharp spike.

Size: Broadley (1983), recorded the species as attaining a total length of 90 cm. The largest specimen actually measured in the Transvaal (TM 4897 -

Komatipoort), has a total length of 670,0 mm with SVL 663,0 and tail 7,0 mm. Diameter of body is 28,0 mm. A specimen measuring 552,0 mm in total length had a mass of 211,0g.

Distribution

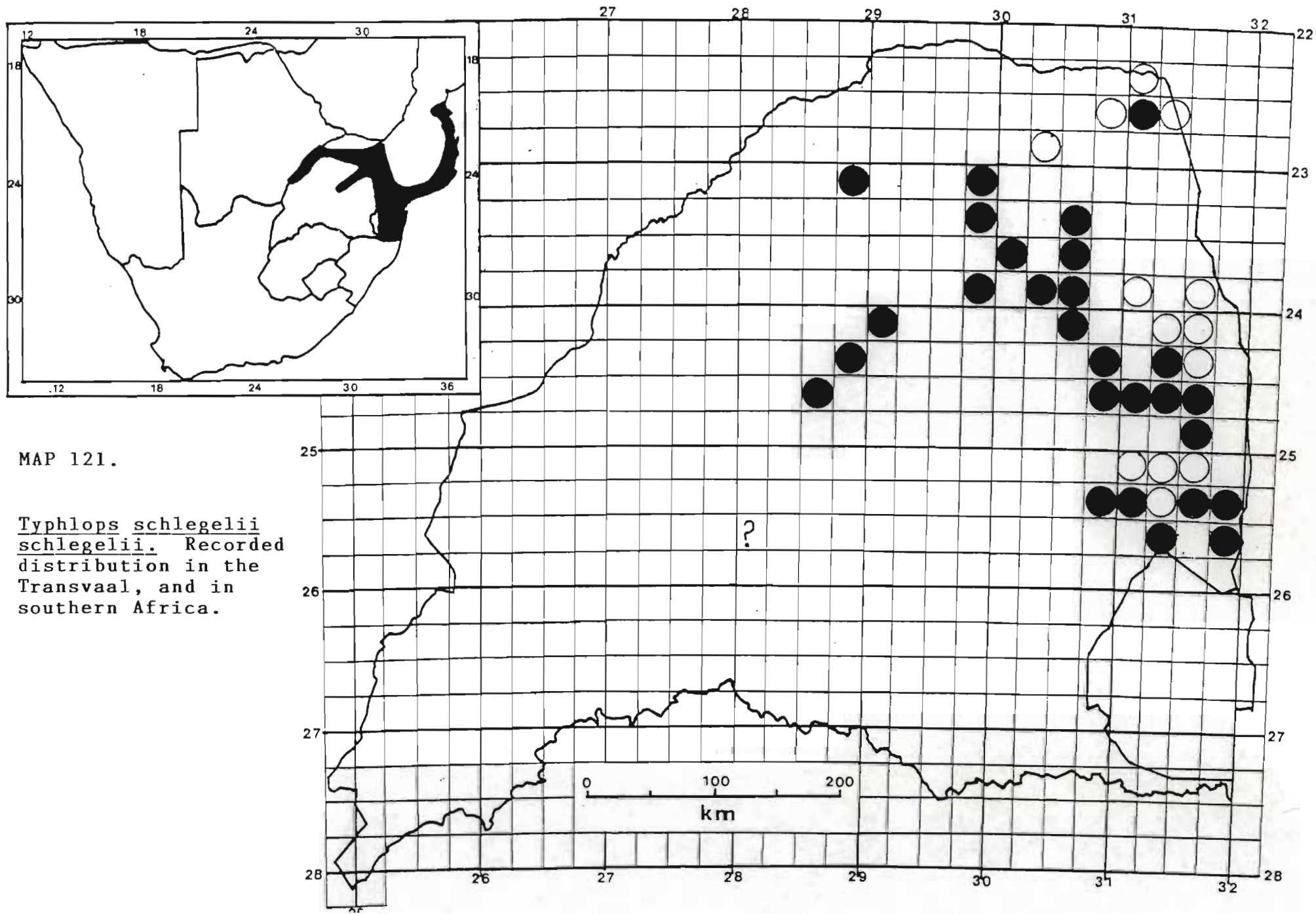
A South-eastern form, ranging over southern Mozambique, northern Zululand, Swaziland and the northern and eastern Transvaal.

Distribution in the Transvaal, (Map 121).

16 km from Hoedspruit; Acornhoek 212KU; Alfa 448JU; Andover 210KU; Ben Lavin Nature Reserve; Between Acornhoek & Ohrigstad; Derdekraal 352KR; Giyani; Gravelotte 783LT; Hans Hoheisen Research Station; Hans Merensky Nature Reserve; Happy Rest Nature Reserve; Hectorspruit 164JU; Helena 400JU; Kaapmuiden 212JU; Komatipoort Townlands 182JU; Krokodilpoort; Ludlow 227KU; Malelane 289JU; Manyeleti Game Reserve, Dixie Hill; Manyeleti Game Reserve, Hermitage; Manyeleti Game Reserve, Main Camp; Manyeleti Game Reserve, Sarabank 323KU; Mokeetsi 376LT; Naboomspruit 348KR; North-Western Transvaal; Northern Transvaal; Nyandu Bush, Wambiya Sandveld; Okkernootboom 211KU; Pietersburg; Pretoria; Punda Milia; Ritavi 2, Mnanopi; Rolvark 350LT; Selati Ranch 143KT; Skukuza; Swadini Dam; Udney 321LR; Vluchtkraal 1040LS; Waterval Boven.

Literature Records

Bandolierkop; Dongola; Kingfisherspruit; Lake Fundusi (FitzSimons, 1962). Pretoriuskop; Batavia picket; Skukuza camp; Malopene road near Malopene; Tswiriri dam



MAP 121.

Typhlops schlegelii
schlegelii. Recorded
 distribution in the
 Transvaal, and in
 southern Africa.

area; Timbavati near Hlangene drift; Malelane quarters; Nahpe road just west of Shithlave; Shabeni hill; Doispane road near Mestel drift; Klopperfontein; Satara camp; Makuleka just north of Mbobomene drift; Boulders picket region; eastern boundary opposite Nwambiya; Nahpe road near Nhlanganine drift; Punda Maria quarters; Wolhuter circle just east of Pretoriuskop; near Stolznek, Pretoriuskop section; Saliji road near Nwatindlopfu drift; just south of Mahembane; between Mahembane and Magovane; between Bvumunyundu and Mapangu drift (western boundary); Mala-Mala picket area; Dongadziba; Pafuri W.N.L.A.; Beacon 7, Nyandu sandveld; between Sabie and Sand rivers, (Pienaar et al, 1983).

Habitat and Ecology

A widespread species in the eastern and northern Transvaal. The species is most common in the lowveld where specimens are frequently seen crossing roads in the Kruger National Park in the rainy season. Schlegels blind snake occurs in veld types 6, 10, 11, 15, 18, 19 and 67 at altitudes ranging from 200-1200 m above sea level. The isolated record from Pretoria in the Transvaal Museum should be treated with caution although the species is known from the Nylstroom and Naboomspruit areas, where its presence is however very rare.

In agreement with Broadley (1983) large specimens were rarely seen although some were collected D.O.R. Most active individuals observed were immatures and subadults with their distinctive grey to blue grey appearance. Large specimens become obese, with enormous accumulations of fat, largely as a result of their relatively specialised termite diet.

Oviparous, from 12-60 ova about 21,0 x 11,5 mm in size are laid in late spring to early summer. The eggs are

well incubated when laid indicating a degree of ovoviviparity and only take a month to six weeks to hatch (Broadley, 1983).

Conservation Status

Semi protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species occurs in at least eight provincial nature reserves as well as the Kruger National Park. It appears to be uncommon over much of its range, but more common in the Kruger National Park. Outside the Kruger National Park, large scale habitat destruction is no doubt affecting its distribution. Currently considered secure.

Remarks

Although the higher midbody scale count of T. s. schlegelii distinguish it from T. s. mucruso over most of its range, both races may have 36 midbody scale rows. Rostral shape may be diagnostic in Zimbabwe and further north but appears less reliable in the Transvaal.

Typhlops schlegelii mucruso (Peters, 1854).

Onychocephalus mucruso Peters, 1854, Monatsb Akad. Wiss. Berlin, p.621. Type locality: Restricted to Macanga, Mozambique by Loveridge, 1933.

Typhlops schlegelii mucruso (Peters). FitzSimons 1962 (part), p.75; 1966, p.39; 1970/74, p.71; Broadley 1983, p.47, fig.10; Auerbach 1987, p. 146; Branch 1988a, p. 47, 1988b, p. 11.

Rhinyotyphlops schlegelii dinga (Peters). Roux-Estève 1974, p.169.

Rhinyotyphlops schlegelii mucruso (Peters). Welch 1982, p. 127.

Diagnosis. 8 Specimens examined.

Colour: Similar to that of T. s. schlegelii but mostly grey to blue grey even as adults. Most specimens are lineolate, i.e. each dorsal scale has a dark spot laterally, forming dark longitudinal lines. Some specimens may be blotched although smaller individuals also exhibit a lineolate pattern. Ventrally white although this colour may be restricted to a narrow median stripe.

Lepidosis: Snout prominent as in T. s. schlegelii; Rostral large, oval or posteriorly pointed (Broadley, 1983) or unguiform (Transvaal), as long to longer than broad in a ratio of 0,97 to 1,36 (Broadley, 1983). Body robust, diameter from 21 to 56 times into total length. Scales in 31 to 36 scale rows at midbody and dorsals 360 to 517 between prefrontal and tip of tail. Tail very short.

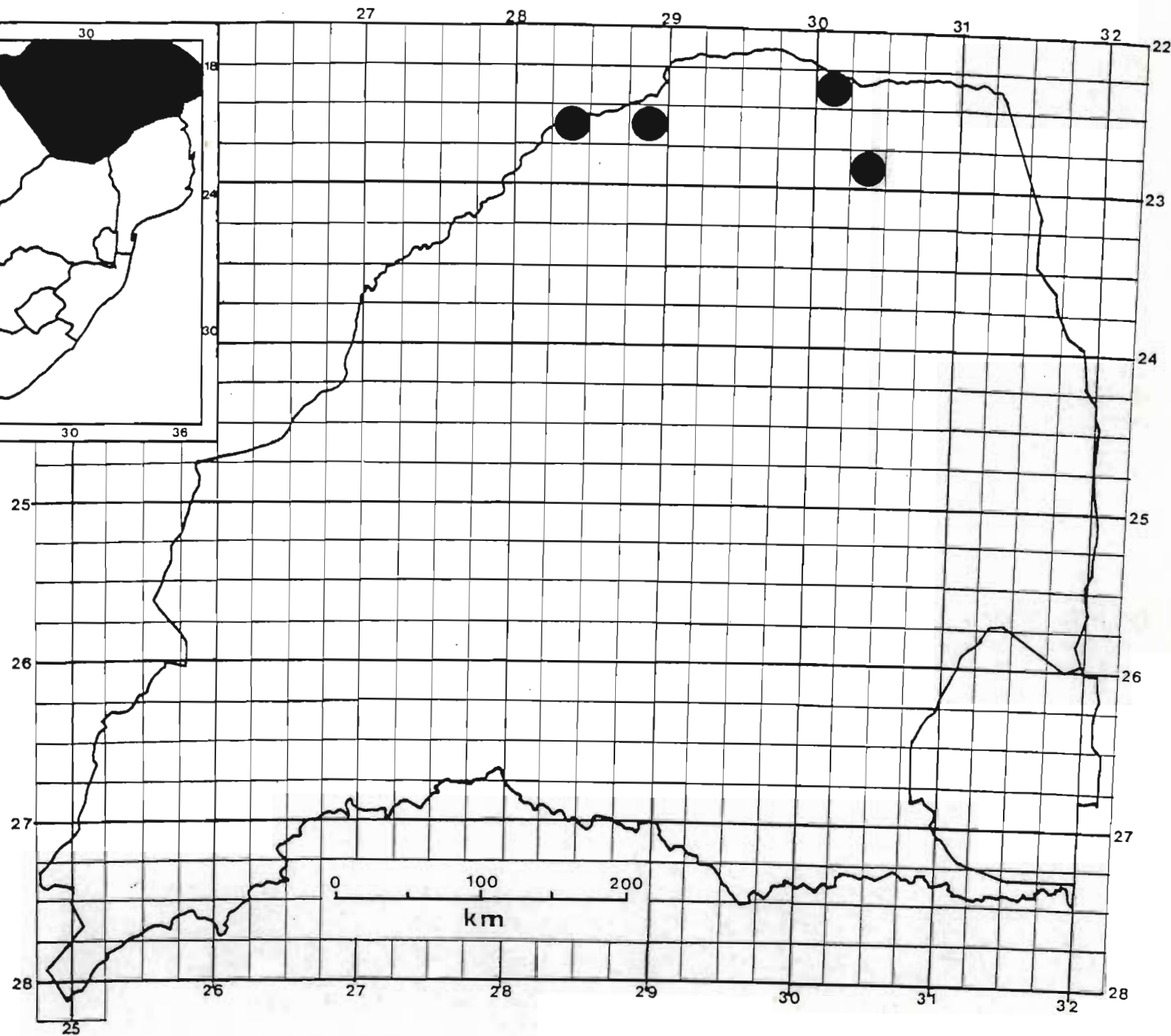
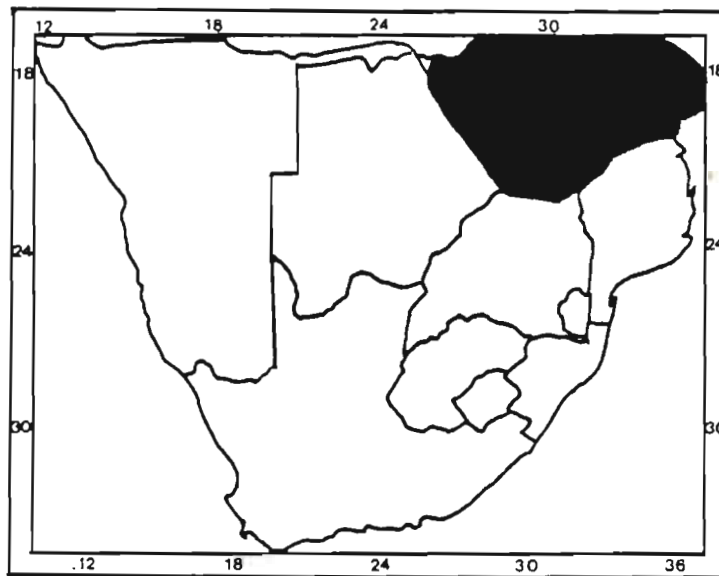
Size: Very large, reaching 895,0 mm in total length (Broadley 1983) or even larger (950,0 mm - Malawi). Only immature Transvaal specimens measured. Mass appears exponential to SVL, one specimen of 170,5 mm SVL having a mass of 3,7 g while another of 280,5 mm SVL had a mass of 18,8 g.

Distribution

Eastern Botswana, northern Transvaal, Zimbabwe and northern Mozambique northwards to Malawi, Tanzania and eastern Kenya. Also Zambia, southern Zaire and north-eastern Angola.

Distribution in Transvaal, (Map 122).

10 km from Messina on Tshipise Road; 16 km from Messina on Tshipise Road; Dover 44MT; Lake Funduzi; Mietjesfontein 220MR; Pietersburg District; Umzinto 36MR.



MAP 122.

Typhlops schlegelii
mucruso. Recorded
distribution in the
Transvaal, and in
southern Africa.

Habitat and Ecology

Similar to that of T. S. schlegelii although a larger subspecies. Appears to be confined to the Soutpansberg and the far northern Transvaal (Map 122), in veld types 14, 15 and 19, at altitudes between 250-900 m above sea level. Broadley (1959) recorded a 645,0 mm female containing 37 eggs measuring 17,0x10,0 mm.

Conservation Status

Semi-protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The paucity of specimens indicates a relative scarcity. However the species is fossorial and only likely to emerge during the rainy season. Although not recorded to date from a provincial nature reserve or the Kruger National Park, it is likely to be found in at least two nature reserves and possibly even the extreme northern KNP. Some habitat destruction is taking place along the alluvial soils flanking the Limpopo river and this has no doubt influenced its distribution and abundance. Currently considered uncommon but secure.

Remarks

A brief discussion was presented under schlegelii. It appears that the presence of mucruso in the Transvaal has been overlooked on several occasions, no doubt because of the large rostral shield of the southern specimens. The low midbody scale count however is typical mucruso. It appears therefore that Transvaal specimens possibly represent the transitional phase with specimens exhibiting features of both phen.

Typhlops bibronii (A. Smith, 1846)

Onychocephalus bibronii A. Smith, 1846, Ill. Zool. S. Africa, Rept., pl. li, fig. 2 & pl. liv, figs. 5-8. Type locality: N. of Latakoo i.e. Kuruman.

Typhlops bibronii (A. Smith). FitzSimons 1962, p. 67, figs. 2 & 6, pls. 1 & I, 1966, p. 38, 1970/74, p. 66; Roux-Estéve, 1974, p. 138; De Waal, 1978, p. 78; Jacobsen & Haacke 1980, p. 8; Welch, 1982, p. 128; Erasmus & Branch 1983, p. 97; Broadley 1983, p. 40, fig. 5, pl. 1; Branch, 1986, p. 285, fig. 2; Auerbach 1987, p. 144, pl. 13, fig. 8; Branch 1988a, p. 47, pl. 39, 1988b, p. 11.

Diagnosis: 245 Specimens examined.

Colour: Brown to dark brown above; ventrally brown to yellow-brown with pale patches under the tail and also under the throat. Rarely bicolored individuals also observed with the dark dorsal colour being sharply delineated laterally by the paler ventral colour. Juveniles may be paler than the adults.

Lepidosis: Snout prominent, with an angular but not a sharp cutting-edge, with the underside more or less flattened. Rostral rounded to oval and large extending posteriorly to the level of the eyes; UL 4; Body cylindrical and moderately stout with the diameter from 25 to 36 times into total length in adults but as much as 40 times in juveniles. Scales in 26 to 34 (mostly 30) in the Transvaal as opposed to 30 to 34 (Broadley, 1983). Two colour phases, incorporating uniform brown individuals and brown with white patches have differing frequencies of midbody scale counts ranging in the former from 26 to 32 ($X=29,86 \pm 3,78$, $n=71$), with 30 most frequent. The latter have midbody scale rows ranging from 29 to 34 ($X=31,49 \pm 1,31$, $n=75$), with 32 most frequent. Scales between prefrontal and tail tip 363-453

(Broadley 1983). Tail very short, equal to or slightly thicker than diameter of body, usually distinctly broader than long and ending in a sharp spike.

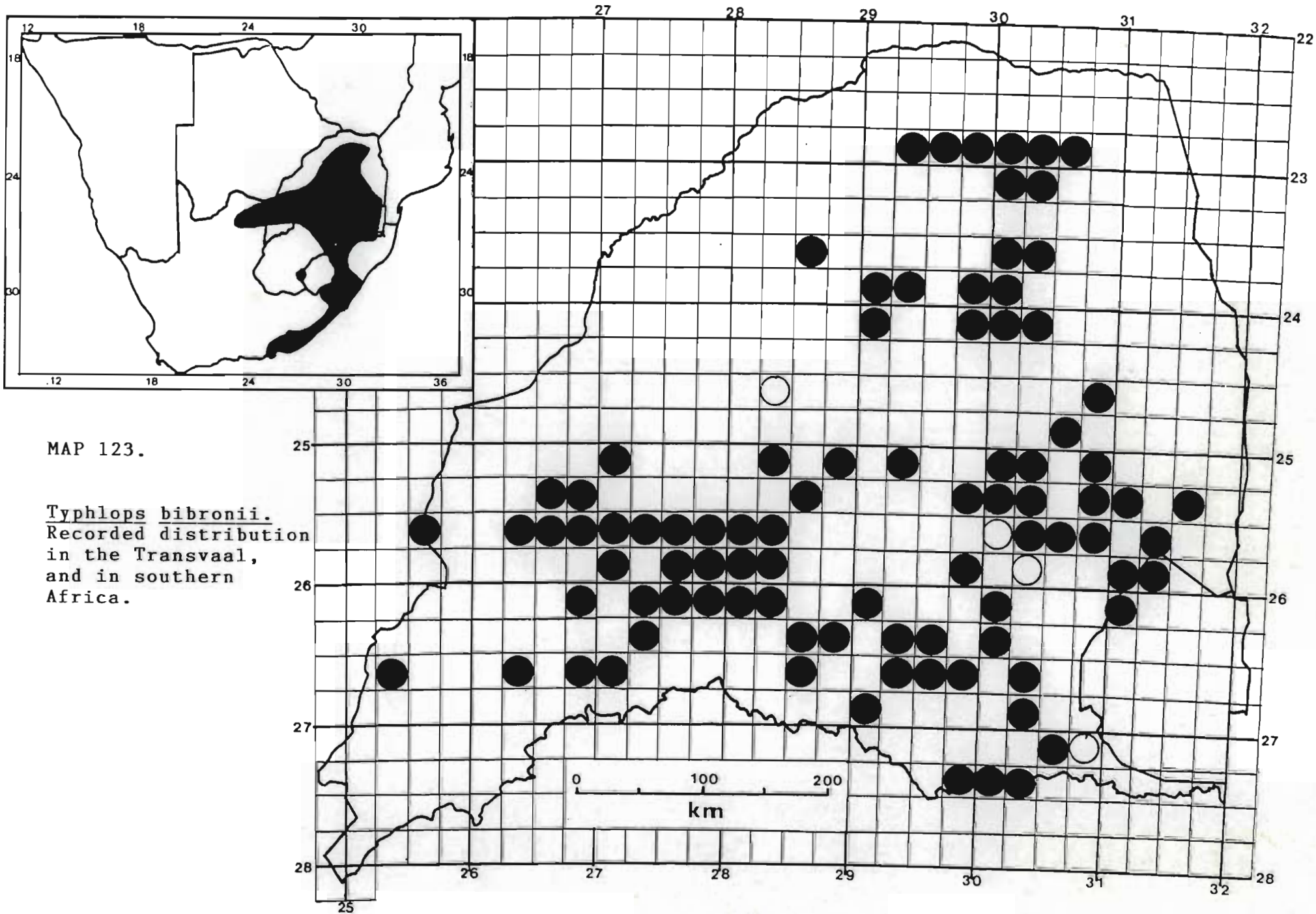
Size: Largest individual SVL = 351,0 mm (N7911 - Loopfontein 298JT), mass = 28,0 g (N5995 - Kranskloof 554KT, gravid female). Mean adult SVL (200,0 mm) = 271,07 mm \pm 43,14 (1SD), n=46, mass = 11,15 g \pm 6,3 (1SD) n = 45.

Distribution

Eastern Cape Province to Natal, Swaziland and Transvaal occurring more rarely in the northern Cape Province, Orange Free State and the eastern highlands of Zimbabwe (Broadley, 1983).

Distribution in the Transvaal, (Map 123).

Barberton Townlands 369JU; Bethal; Bloemfontein; Blyde River Nature Reserve; Boekenhoutskloofdrift 286JR; Boksburg; Boschpoort 284JQ; Bothwell 90IT; Bristol 760MS; Broederstroom 481JQ; Broederstroom, Haenertsburg; Brondal; Buitenzorg 114HT; Bulskop 225IP; Carolina Dist.; Carolina Town and Townlands 431IT; Clearwaters, Haenertsburg; Daggafontein 125IR; Davel; De Berg 71JT; De Bilt 372JU; De Roodepoort 435IS; Delareyville; Diepgelegen 945LS; Diepgezet 388JU; Diepkloof 44JS; Doornbult 624LS; Doornkop School, Witpoort; Doornplaat 177IP; Duurstede 361JU; Dycedale 368JU; Entabeni 251MT; Ermelo District; Fochville; Frederikstad, Potchefstroom; Gedult 270IP; Generaalsdraai 423JS; Gillooly's Farm; Goedgevonden 134HT; Groot Marico; Groothoek 171HT; Grootvlei Mine; Halfway House; Harnham 793MS; Hartebeespoort, Rustenburg Dist.; Hectorspruit 164JU; Holworth 783MS;



MAP 123.

Typhlops bibronii.
 Recorded distribution
 in the Transvaal,
 and in southern
 Africa.

Houtkop 43IQ; Jericho 304IT; Johannesburg;
Johannesburg, Fountain Blue Township; Joubertsdal 448JT;
Kafferskraal 43JQ; Kalkheuwel 493JQ; Kareelaagte 45JO;
Kastrolnek, Wakkerstroom; Krabbefontein; Kranskloof
554KT; Leiden 340IT; Lindleyspoort 220JP; Loopfontein
298JT; Lydenburg; Mac Mac Pools; Marievale Bird
Sanctuary; Matangari; Matlala; Melrose Eastate 541IR;
Modderfontein; Modjadjes Location 424LT; Mooiplaas,
Delmas; Mutshenzheni; Nelspruit; Paardeplaats 177IQ;
Palala River; Percy Fyfe Nature Reserve; Philipstown
390MS; Potgietersrus; Pretoria; Pretoria District;
Pretoria North; Pretoria, Capital Park; Pretoria,
Colbyn; Pretoria, Fairy Glen; Pretoria, Fountains;
Pretoria, Garstfontein; Pretoria, Gezina; Pretoria,
Glenferness Agricultural Holdings; Pretoria, Lynnwood;
Pretoria, Lynnwood Glen; Pretoria, Menlo Park Ext.;
Pretoria, Meyerspark; Pretoria, New Muckleneuk;
Pretoria, Olympus; Pretoria, Pierneefrand, Villieria;
Pretoria, Rietfontein; Pretoria, Rietondale; Pretoria,
Riviera; Pretoria, Silverton; Pretoria, The Willows;
Pretoria, Valhalla; Pretoria, Waterkloof; Pretoria,
West End; Pretoria, Wingate Park; Rietfontein 179JP;
Rietfontein 214JR; Rietfontein 255JT; Rietfontein
313IR; Rietspruit 91KQ; Roodewal 322JQ; Ratomba -
Louis Trichardt; Rust der Winter Nature Reserve;
Rustenburg Nature Reserve; Rusticana 660IR; Sabie;
Schuilhoek 139HS; Serala 5KT; Sheba 219JT; Shilowane;
Smithfield 44IS; Sterkfontein 299IS; Swartkrans -
Krugersdorp; Syferfontein 178JP; Tevreden 56IT; The
Curlews 103JU; The Downs 34KT; Tiegervoort 371JR;
Tonkwanekloof 80 km. W. of Pretoria; Tshakuma;
Tweefontein 467IS; Tzaneen 538LT; Vaalbank, Elands R.;
Verwoerdburg; Verwoerdburg, The Reeds; Vissershoeck
435JQ, Donkerkloof; Vogelfontein 400JP; Wakkerstroom
Townlands 121HT; Waterval Boven; Weimershoek 81JT;
Zeekoegat 673LR; Zuurbron 132HT; Swartkrans 172IQ.

Literature Records

Belfast; Mphome; Nylstroom; Piet Retief; Potchefstroom; Standerton (FitzSimons, 1943). Wolkberg wilderness area (Snyders 1987). 16 km. NE of Carolina; Johannesburg, Honeydew; Outlook 789 MS (NMZB).

Habitat and Ecology

The most common species in the Transvaal with a wide habitat tolerance in veld types 8, 9, 13, 14, 16, 18, 19, 20, 48, 50, 52, 54, 57, 61, 62, 63 and 64 at altitudes ranging from 800-1800 m above sea level. Frequently found in moribund termitaria particularly on the highveld but mostly found under rocks and occasionally, rotting logs. Occasionally come to the surface during the rainy season. These snakes are insectivorous feeding mostly on termites and other small invertebrates, including ant eggs.

The species is ovoviviparous, with the eggs retained in the female for almost the duration of the incubation period. Erasmus & Branch (1983) recorded that the eggs hatched 5 days after laying. Females lay from 5 to 12 eggs. Neonates measured 110,0-124,0 mm. Development of the eggs appears to be lengthy as ova measuring 20,0-21,0x10,0 mm were found, without any recognisable embryos, in a female from Swaziland captured in November. During this survey eggs and hatchlings were found on three occasions during March. One, a gravid female laid the eggs in the bag while the other two were found together with eggs or neonates respectively. Both the latter were found in hollows under rocks. The ova produced in the bag and from which the premature neonates attempted to emerge measured from 16,0-20,5 x 11,5-13,5 mm and masses of 1,40-1,60 g. the neonates with yolk

sacs still attached measured 100,0 - 105,0 mm SVL, 2,0-2,5 mm tail and masses of 0,85-1,0 g. The ova found together with the female under a rock measured 42,0-43,0 x 9,5-10,0 mm with masses of 2,6-2,7 g. One egg was opened and a neonate measuring 106,0 mm SVL and 3,0 mm tail had a mass of 1,1 g. The five newly hatched neonates found with two adults under a rock measured 121,0-126,0 mm SVL, 2,0-3,0 mm tail and had masses ranging from 1,30-1,65 g. This indicates great variability in egg size which is also to a degree reflected in the size of neonates.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species is widespread occurring in 36 provincial nature reserves. Although seriously affected on the highveld by habitat destruction and a seeming dependency on moribund termitaria and rocky outcrops, the species is in a secure position and out of danger.

Remarks

This species possibly also requires revision taking its total distribution into account and the colour and midbody scale count anomalies found in the Transvaal. Branch (1986) described the hemipenes on the basis of a specimen from Natal and another from Waterval Boven, eastern Transvaal both probably of the same phenotype. A specimen from Pretoria for comparison may shed light on the relationships of the brown and bicoloured phases.

Typhlops lalandei Schlegel, 1844

Typhlops lalandei Schlegel, 1844, Abb. Amph., p. 38, pl. xxxii, figs. 17-20. Type locality: Cape of Good Hope. Pienaar 1978, p. 117, pl. 48; Jacobsen 1977, p. 26; Broadley, 1983, p. 43, figs. 7 & 8; Pienaar et al 1983, p. 126, pl. 53; Branch 1986, p. 285, fig. 2; Auerbach 1987, p. 145, pl. 14, fig. 1; Branch 1988, p. 47, pl. 39, 1988b, p. 11.

Typhlops delalandii Dumeril & Bibron. FitzSimons 1962, p. 71, fig. 9, 1966, p. 38; 1970, p. 70; Pienaar 1966, p. 135.

Rhinotyphlops lalandei (Schlegel). Roux-Estive, 1974, p. 158; De Waal, 1978, p. 79; Jacobsen & Haacke 1980, p. 9; Welch, 1982, p. 126.

Diagnosis. 93 Specimens examined.

Colour: Pale to dark brown to slate or greyish brown above, tinged with pink and each scale paler edged to give a chequered effect. Snout usually paler towards the edge. Underparts indicate two phases, (a) colour uniform brown below, which form extends over the southern and south-western Transvaal and (b) a pale yellowish to yellow-brown median stripe (Broadley, 1983, fig. 8) which form occurs over the northern Transvaal and Lowveld. Some overlap in colour patterns and distribution do exist in the northern Transvaal. A white patch is frequently present under the tail and cloacal region. Juveniles more or less fleshy pink throughout.

Lepidosis: Snout very prominent with a sharp cutting edge at least in adults. Juveniles may have an obtuse snout which progressively becomes sharper with age. Rostral large extending backwards to level of eyes; unguiform in brown individuals and oval in bicolored specimens; UL 4; Body cylindrical, slender to moderately stout, diameter 35 to 50 times into total

length (Broadley, 1983) usually exceeding 40 times in adults. Scales in 26 to 30 (usually 28) rows at midbody (Broadley 1983) although in the Transvaal they range from 24 to 28 (mostly 26, 40,86%); Scales between prefrontal and tail tip, 337 to 441 (Broadley 1983). Tail short, a little broader than long and ending in a sharply pointed spine.

Size: Largest individual SVL = 295,0 mm (J4834 - Arundel 788 LT), mass = 12,8 g (N5806 - Rhenosterfontein 560 IQ). Mean SVL (100,0 mm) = 194,90 mm \pm 56,01 (1SD) n = 51, mass = 3,67 g \pm 3,12 (1SD), n = 50.

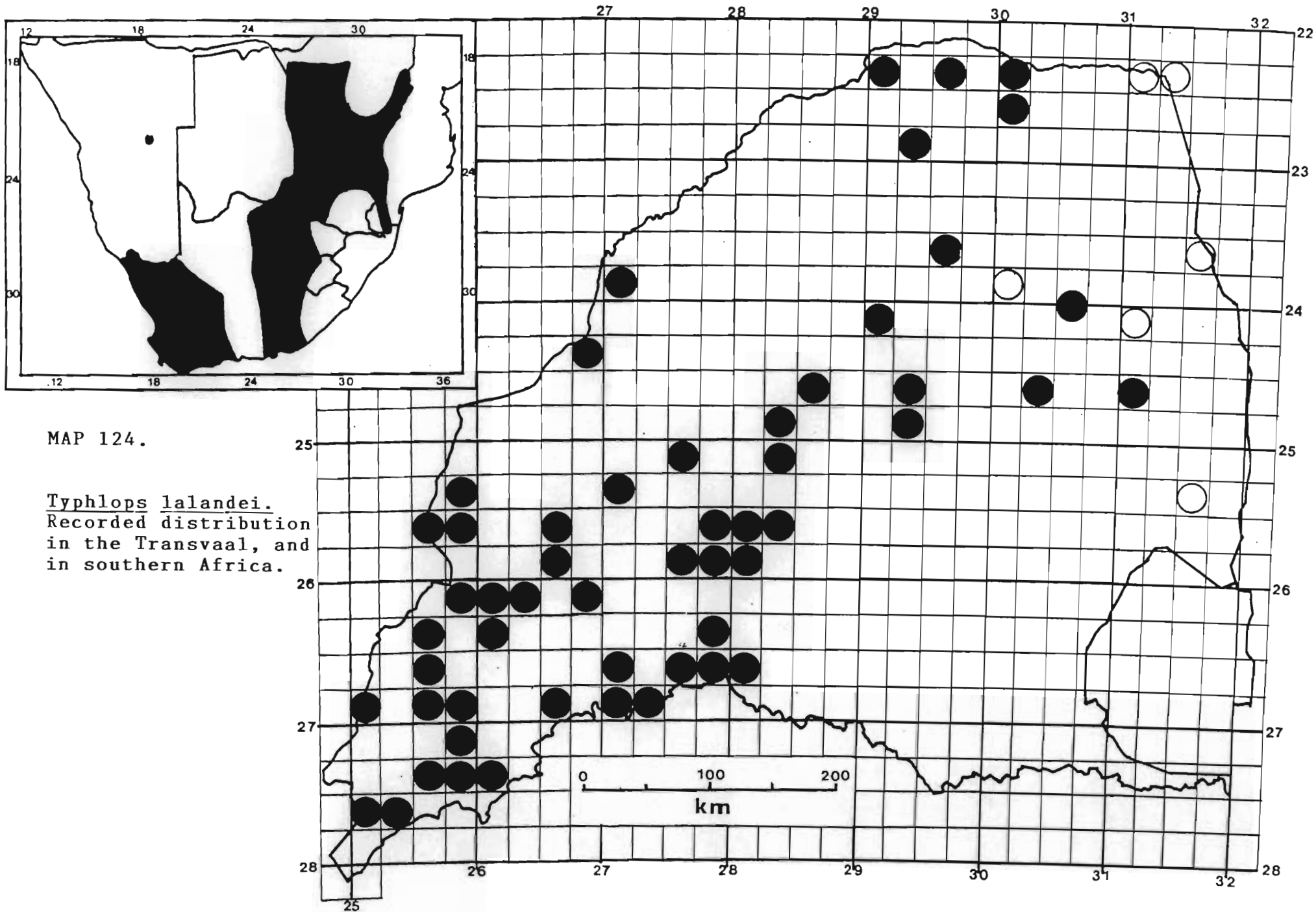
Distribution

From the Cape Province through the Orange Free State, Transvaal to Zimbabwe. Isolated records from South-West Africa/Namibia.

Distribution in Transvaal, (Map 124).

Most common in the south-western Transvaal declining in abundance northwards and eastwards.

8 km West of Dinokana; Arundel 788LT; Barberspan Nature Reserve; Boekenhoutskloof 284JR; Breslau 2MS; Brits; Buffelshoek 471IQ; Calais 563KS; De Gladde Klipkop 763LS; De Wildt; Donald 37KP; Dongola; Doornplaat 177IP; Doreen 108MT; Greylingrus 101HP; Hartebeespoort; Hartebeespoortje 451IQ; Hartebeesthoek 303JR; Hartebeestpoort; Hartebeestpoort - Rustenburg Dist.; Houthaaldoorns 2IP; Houwater 54JQ; Humanskraal 346IO; John Marcus 336LQ; Kareeboomput 286HO; Kareelaagte 45JO; Knoppiesfontein 87IP; Lindleyspoort 220JP; Mabalanes Location; Makapansgat 39KS; Malelane 289JU; Marble Hall 29JS; Messina 4MT; Moilwas Location; Nylsvley Nature Reserve; Onderstepoort 266JR; Orkney 437IP; Panfontein 270HO; Philipstown 390MS;



Potchefstroom Town and Townlands 435IQ; Pretoria North; Pretoria, Capital Park; Pretoria, Zoological Gardens; Rhenosterfontein 560IQ; Rietfontein 240IO; Rietspruit 91KQ; Rolle 235KU, Thulemashi; Roodekuil 183JQ; Roodepoort 302IQ; Roodewal 364IQ; Roodekraal 454JQ; Rooipoortje 453IQ; Smaldeel 36KP; Sonskyn Spa, Messina; Springbokfontein 107IO; Springbokpan 61IO; Springfield 337LQ; Suikerbosrand Nature Reserve; Syfergat 204HO; Tweefontein 523JQ; Vaalboschfontein 188HO; Venterskroon S.E. of Potchefstroom; Vereeniging; Vlakplaats 354JR; Vredeburg 256IO; Warmbaths; Warmbaths area; Witgatboom 316KT; Witpan 20IP; Wolmaransstad Town and Townlands 184HO.

Literature Records

Frederickstad (FitzSimons, 1943). W.N.L.A. quarters, Pafuri; Mahulule kop, western boundary of Letaba section; eastern boundary at Saselandonga gorge; eastern boundary between Nchindo and Tabaglovu beacons; Cabora Bassa line to end of sandveld; Malelane; New tarred road between Luvuvhu and Limpopo rivers, 10-12 km, (Pienaar et al, 1983). Wolkberg Wilderness area, (Snyders, 1987).

Habitat and Ecology

A small, slender species, frequently found in moribund termitaria, under rocks and rotting logs. Has been recorded from veld types 10, 11, 12, 14, 15, 18, 19, 20, 48, 50 and 61 at altitudes ranging from 250-1600 m above sea level. This species feeds on small invertebrates particularly termites and their larvae.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species is known to occur in nine provincial nature reserves and the Kruger National Park. Its widespread distribution and habitat tolerance ensures its continued existence. Locally its abundance and distribution has been seriously affected as in the south western Transvaal. Currently considered secure.

Remarks

The two colour forms, coupled with differing rostral shields and geographical distribution indicate a need for a revision of this species. Transvaal specimens have a lower median (26) count of scales at midbody than that recorded by Broadley (1983).

Branch (1986) described the hemipenes of this species based on a specimen from Jozini in Kwazulu. He observed small discrepancies between this specimen and one from East London. It would no doubt clarify the position if specimens from the south-western and northern Transvaal were compared.

Family: LEPTOTYPHLOPIDAE

Genus: Leptotyphlops Fitzinger, 1843

Leptotyphlops Fitzinger, 1843, Syst. Rept., p. 24.

Type: Typhlops nigricans Schlegel.

Small slender fossorial snakes, distinguishable from the Typhlopidae in their small size and build; ocular shield bordering lip; presence of teeth on the lower jaw (dentary) only; scales at midbody not exceeding 14, the presence of a large preanal shield and tail longer than broad. Rostral, nasal and ocular shields large, frontal small. Eyes vestigial lying under the head shields. Head, neck, body and tail all of equal width. Rudiments of the pelvic girdle present with the rudimentary femur bearing a small claw, the tip of which extends to just under the skin posteriorly but anterior to the cloaca. Body covered in smooth, imbricate scales. The tail is contained 8 to 20 times in total length which still indicates a fossorial existence but less specialised in this respect than Typhlops. Oviparous.

Six forms occur in the Transvaal of which two are in need of revision and three others need to be redefined owing to overlap of morphological characters.

Key to the Transvaal species.

1. A discrete prefrontal separates the rostral from the supraoculars 2
Prefrontal fused with the rostral, which is consequently in contact with the supraoculars 3

2. Total dorsals 266-325 from occiput to tail tip; Subcaudals 34 or more; pale pink brown above, unpigmented below L. longicaudus
Total dorsals 244-289; Subcaudals 27 or less; usually black above and below, rarely light brown L. nigricans
3. 10 Scales round middle of tail 4
12 scales round middle of tail L. distantii
4. Rostral barely extending beyond the level of the posterior borders of the eyes and less than a third the width of the head at this point; total length/tail ratio usually less than 11,5 5
Rostral extending well beyond the level of the posterior borders of the eyes and more than a third the width of the head at this point; total length/tail ratio usually more than 11,5 L. scutifrons scutifrons
5. Dorsals from occiput to tail tip 197-237; Subcaudals 18-28. Tail tip frequently white L. conjunctus conjunctus
Dorsals from occiput to tail tip 230-292; Subcaudals 20-34; tail tip rarely white L. conjunctus incognitus

Leptotyphlops longicaudus (Peters, 1854)

Stenostoma longicaudum Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 621 and 1882, Reise n. Mossamb., p. 3, p. 102, pl. XV, fig. 5. Type locality: Tete, Mozambique.

Leptotyphlops longicauda (Peters). FitzSimons, 1962, p. 80, 1966, p. 40, 1970/74, p. 72; Pienaar 1966, p. 139.

Leptotyphlops longicaudus (Peters). Broadley & Watson, 1976, p. 487, Pienaar 1978, p. 122; Jacobsen & Haacke, 1980, p. 11; Welch, 1982, p. 122; Pienaar et al 1983, p. 131, pl. 55; Broadley 1983, p. 52, fig. 14; Auerbach 1987, p. 149; Branch 1988a, p. 48, pl. 40, 1988b, p. 11.

Diagnosis. 19 Specimens examined.

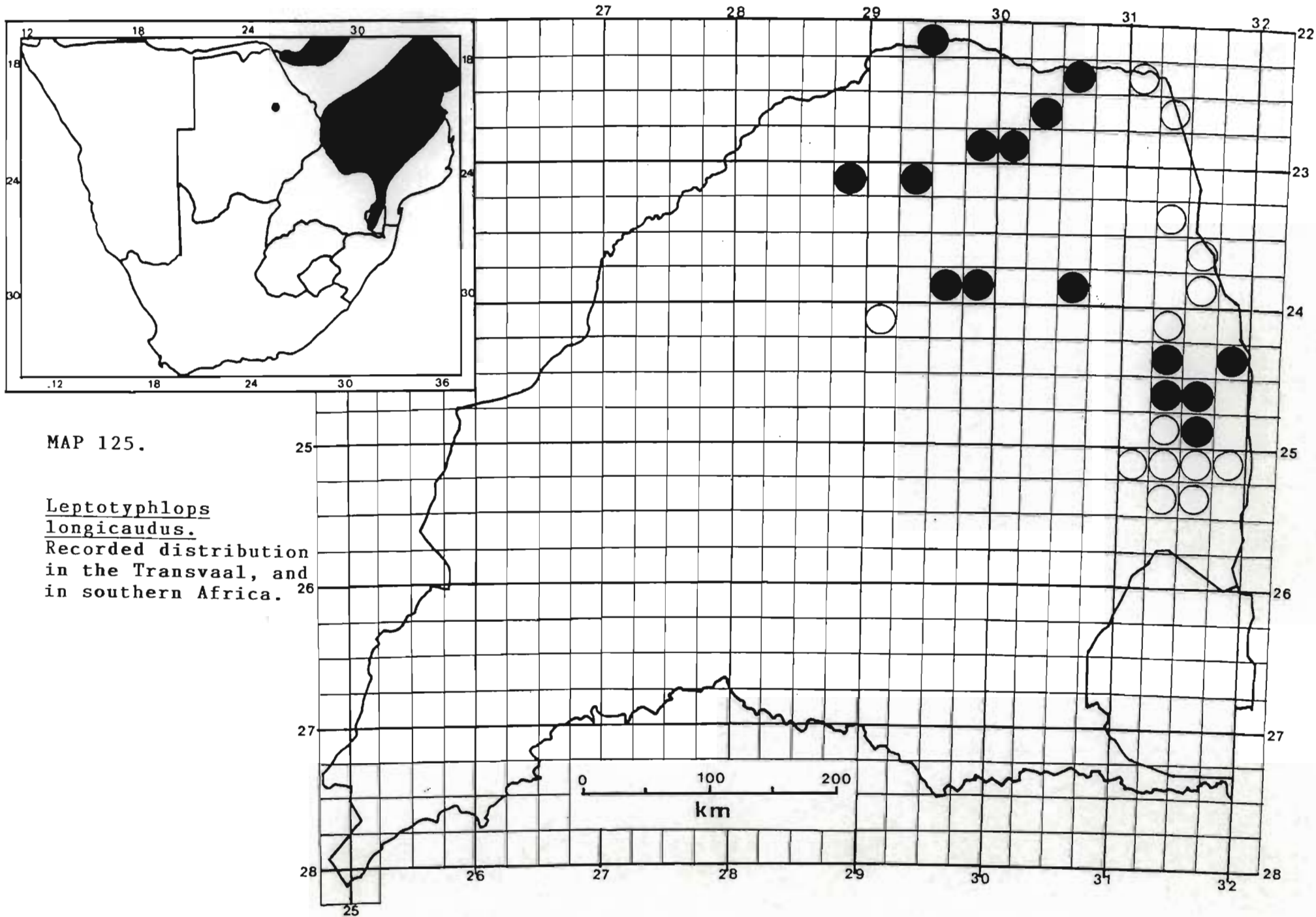
Colour: Lilac to grey or plumbeous above, distinctly tinged with flesh pink; Ventrally flesh pink. Juveniles mainly pinkish throughout.

Lepidosis: Rostral rounded and separated from supraocular by prefrontal; body scales smooth, imbricate and in 14 rows at midbody and 10 rows round middle of tail; from 266 to 325 scales between rostral and caudal spine; subcaudals 34-58, with possible sexual dimorphism between males and females, with 46-58 in the former and 34-46 in the latter (Broadley, 1983).

Size: Largest SVL = 169,0 mm (JN 2801 - Schilderkrans 1041LS), mass = 1,3 g (JN 2801). Mean SVL (100,0 mm) = 151,2 mm \pm 11,73 (1SD), n = 5, mass = 1,05 g \pm 0,17 (1SD) n = 5. Broadley (1983) records a specimen from Sentinal Ranch, Beit Bridge, Zimbabwe (UM 14536) with a SVL of 217,0 mm.

Distribution

Widespread in Africa from Kenya southwards through Tanzania, Mozambique, Zimbabwe, northern and eastern Transvaal and Swaziland.



Distribution in the Transvaal (Map 125).

Gravelotte 783LT; Kalkfontein 1001LS; Malala Drift 83MT; Manyeleti Game Reserve; Manyeleti Game Reserve, Dixie Hill; Mara 38LS; Nwanedzi; Paradise 724MS; Ross 55KU; Schilderkrans 1041LS; Shaholle, Gravelotte; Sweethome 315LR; Trevenna 119MT; Vhuswinzhe; Weipe 47MS.

Literature Records

Hectorspruit; Malelane; Potgietersrus, (FitzSimons, 1983). Free State Mine, (Broadley & Watson 1976). 8,0 km on Hlambamaduba circular route to Malelane; Pretoriuskop near camp; Skukuza staff quarters; Nwashitsaka drift, Skukuza; Ngwari drift through Mlondozi spruit; Msimbit forest along upper reaches of Shinobyeni spruit; Lebombos; drift through Letaba en route to Mala-Mala; eastern boundary between Nchindo and Tabaglovu beacons; Sabie river bank between Lower Sabie camp and Lubyelubyel; Hlangwine camp near Pretoriuskop; between Sabie and Sand rivers; Kingfisherspruit; Eendrag windmill; western boundary near Mutale river; Mutale picket; new tarred road near Swanepoelsnek; Malelane; Olifants camp; Boesmanklip dam site, (Pienaar et al, 1983). Beacon R-S; Nyandu sandveld (NMZB).

Habitat and Ecology

An eastern tropical species which occurs in the northern and eastern Transvaal, it is found in veld types 10, 11, 15, 18, 19 and 67 at altitudes between 200-1400 m above sea level. Usually found under rocks on soil presumably feeding largely on ants and termites as well as their larvae.

Oviparous the species lays two eggs measuring 21,0-23,1x 3,0-4,0 mm with a mass of 0,3 g, which are deposited under a suitable rock in midsummer.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Uncommon, the species occurs in four provincial nature reserves as well as the Kruger National Park. Its secretive habits and habitat renders this species secure.

Remarks

Broadley (1983) mentioned the similarity between this species and L. n. nigricans (Schlegel), however the pink colour is mostly diagnostic.

Leptotyphlops nigricans nigricans (Schlegel, 1839).

Typlops nigricans Schlegel, 1839, Abb. Amph., p. 38, pl. xxxii, figs. 1-24. Type locality: Cape of Good Hope.

Leptotyphlops nigricans (Schlegel). FitzSimons 1962, p. 81, fig. 14, 1966, p. 40; 1970/74, p. 73.

Leptotyphlops nigricans nigricans (Schlegel). Broadley & Watson, 1976, p. 490; Jacobsen & Haacke, 1980, p. 12; Welch 1982, p. 123; Branch 1986, p. 285, fig. 1B, 1988a, p. 49, 1988b, p. 11.

Diagnosis. 22 Specimens examined.

Colour: Uniformly dark brown to black above and below with scales sometimes paler edged.

Lepidosis: Snout rounded; rostral large; nasals large and separate rostral from supraoculars; Body scales smooth, imbricate and in 14 rows at midbody and 10 rows round middle of tail; 199 to 260 scales between rostral

and caudal spine in the Cape population (Broadley & Watson, 1976, fig. 4) and 244-289 in the Transvaal population; Subcaudals 21 to 33 in the Cape population and 18 to 27 in the Transvaal specimens.

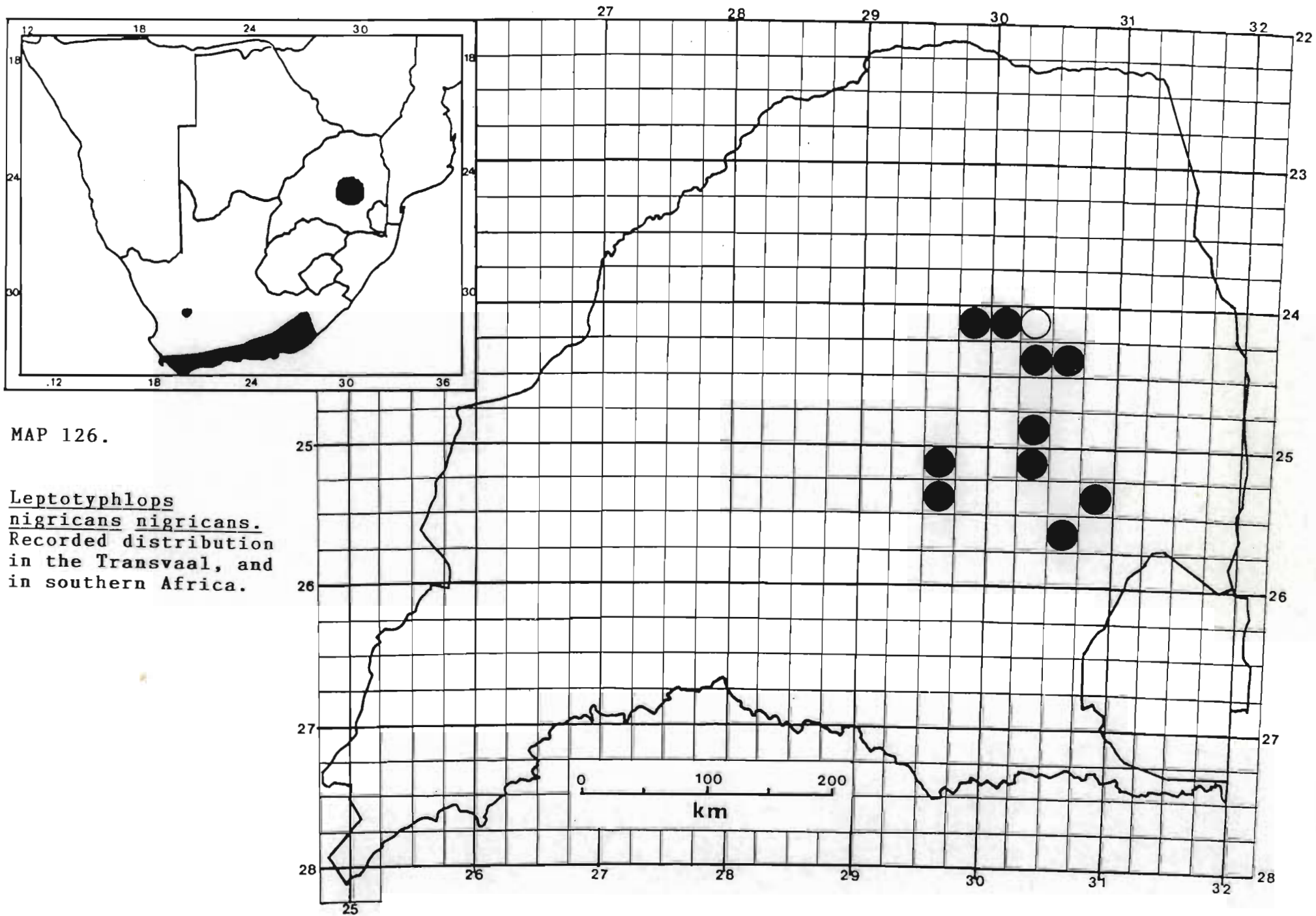
Size: Largest SVL = 196,0 mm (JN 2892 - Morgendal 216KS), mass = 1,3 g (P10914 - Goedgedacht 152JS); mean SVL (100,0 mm) = 151,45 mm \pm 24,99 (1SD) n = 10, mass = 0,73 g \pm 0,33 (1SD), n = 10. Broadley (1983) mentions that the tails of males are contained in total length 8 to 11,5 times and that of females 12 to 15 times. Transvaal material range from 11,86 to 19,6 (n = 11), values which are considerably higher than those recorded by Broadley (1983).

Distribution

The species exhibits an exceptionally discontinuous distribution with a population in the southern Cape Province, and another in the east-central Transvaal, which are widely separated from the principal range of the species. This extends from central Zambia northwards to the southern Sudan. A subspecies L. nigricans pembae Loveridge from Pemba Island off the Tanzania coast is tentatively recognised by Broadley (1983).

Distribution in the Transvaal, (Map 126).

Boomplaats 24JT; Buffelvley 388KT; Elandsfontein 471JT; Farm 387KT; Gibraltar 79KT; Godwan River; Goedehoop 152JS; Haffenden Heights 35KT; Klipdraai 3KT; Klipnek 199JS; Makwens, The Downs 34KT; Morgendal 216KS; Nooitgedacht 392KT; Perkeo 223KT; Rietfontein 255JT.



Literature Records

Shiluvane (Broadley & Watson 1976).

Habitat and Ecology

A small secretive species it has a limited distribution along the eastern Transvaal escarpment flanking the Bushveld basin in the east. Occurs in veld types 8, 9 and 19 at altitudes of 1300-1700 m above sea level. Usually found under stones and more rarely in moribund termitaria. Food consists of invertebrates including termites.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare species only represented by a few specimens in the Transvaal. Its secretive habits and habitat however ensure its continued existence.

Remarks

Broadley & Watson (1976) reported on significant differences between the Transvaal material and those of the nominate form. This is borne out during this study. It is suggested that the Transvaal form be elevated to subspecies status. However, this can only be undertaken through a more intensive investigation of all morphological characters as there is overlap in at least some of these. It is important to establish the degree of overlap between Cape and Transvaal specimens in order to determine relationships. On an assessment of the morphological characters currently analysed it is

considered premature to elevate Transvaal material to subspecific status. A distribution record in Broadley (1983), map 6 at 2427CA appears to be erroneous.

Leptotyphlops conjunctus conjunctus (Jan, 1861).

Stenostoma conjunctum Jan, 1861, Arch. Zool. Anat. Phys., I, p. 189 and Icon. Gen., livr. 2, pls. v & vi, fig. 9. Type locality: Cape of Good Hope, but restricted to the eastern Cape Province by Broadley & Watson, 1976.

Leptotyphlops conjuncta (Jan). FitzSimons 1962, p. 84, figs. 11 & 16, pl. v, 1966, p. 40, 1970/74, p. 74 (part).

Leptotyphlops conjunctus conjunctus (Jan). Broadley & Watson, 1976, p. 493; Welch, 1982, p. 122; Broadley 1983, p. 55, fig. 16; Branch 1988a, p. 49, 1988b, p. 11.

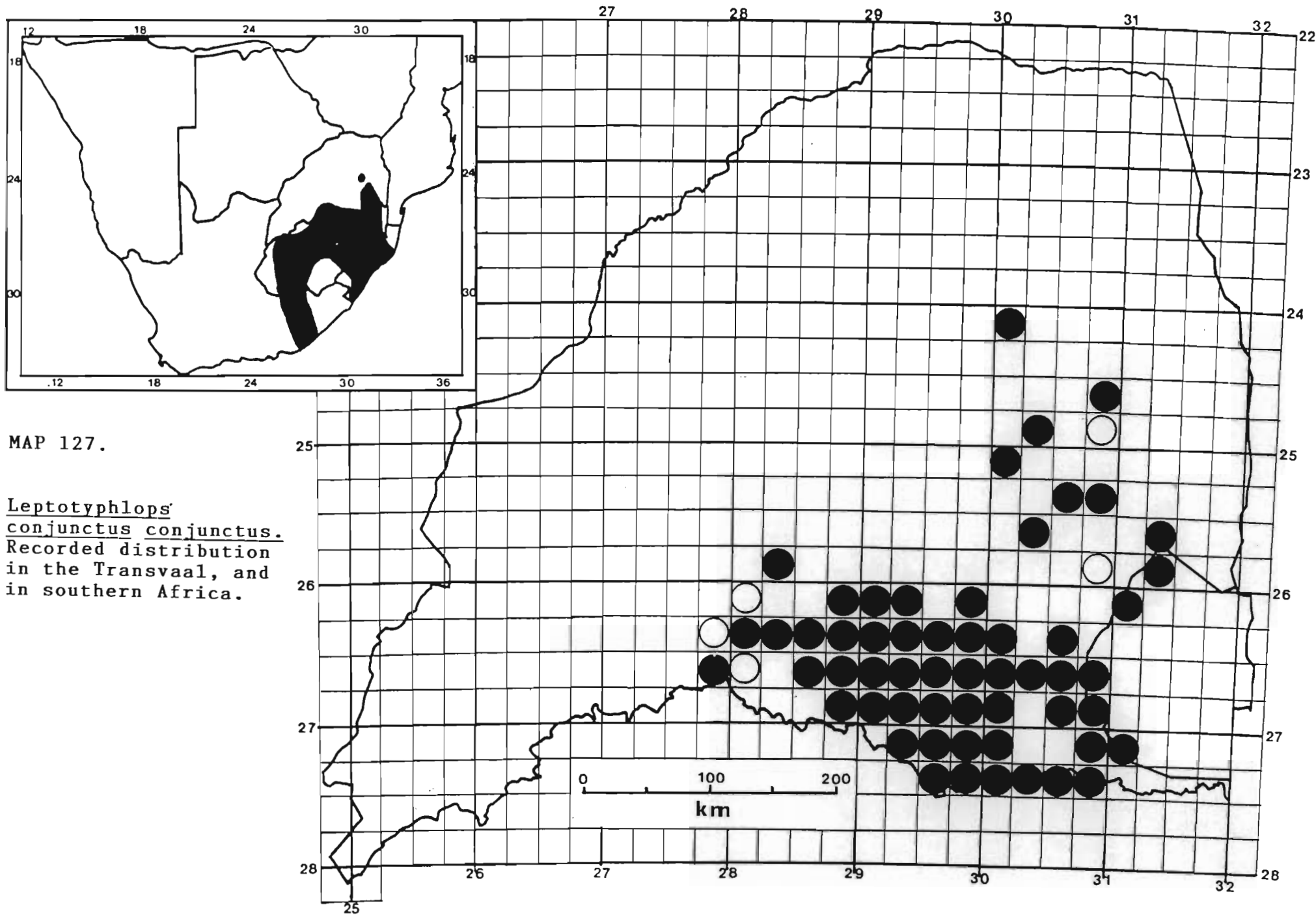
Leptotyphlops conjunctus (Jan). Jacobsen & Haacke, 1980, p. 13; Branch 1986, p. 285.

Leptotyphlops scutifrons scutifrons (Peters). De Waal, 1978, p. 80 (part).

Diagnosis. 143 Specimens examined.

Colour: Uniformly dark brown to shiny black above and below. A white patch on anal plate as well as a white tail tip frequently present. When the snake is dry, the scales are pale edged.

Lepidosis: Snout rounded, rostral a little less than half the width of the head, narrowing sharply to an obtuse point, reaching posteriorly slightly behind posterior margin of eyes. Body scales smooth, in 14 rows at midbody and 10 rows around middle of tail; 192-238 scales between rostral and caudal spine (Transvaal specimens range from 197-237); Subcaudals 20-27 (Transvaal, 18-28).



Size: Largest SVL = 169,0 mm (N8129 - Rietpoort 405 IS), mass = 1,2 g (N9797 - Witbank 236IS). Mean SVL (100,0 mm) = 121,03 mm \pm 15,97 (1SD), n = 62, mass = 0,54 g \pm 0,25 (1SD), n = 60. Tail length goes into total length from 9,25 - 15,86 but mostly does not exceed 13,0.

Distribution

Eastern Cape Province north to the southern Transvaal, Swaziland and Natal (Broadley, 1983).

Distribution in the Transvaal (Map 127).

Bendor 211HT; Buitenzorg 114HT; Charl Cilliers 332IS; Confidence 17HU; De Deur 539IQ; De Krans van Blesbokspruit 305IS; De Roodepoort 435IS; Diepgezet 388JU; Duurstede 361JU; Eendracht; Ermelo; Goedemoed 373IT; Goedeverwachting 334JT; Goedgedacht 38HS; Greylingstad; Haarlem 443IT; Haasfontein 28IS; Haffenden Heights 35KT; Hexrivier 634IR; Holfontein 138IS; Ishlelo 441IT; Kafferskraal 513IS; Kalkoenkrans 366IT; Kastrolnek, Wakkerstroom; Klaserie River Valley, Mariepskop; Kleinfontein 3HT; Kleinkopje 15IS; Klipplaatdrift 504IS; Klipriviersberg 106IR; Kromdraai 263IR; Langzeekoegat 325IR; Lisbon State Forest; Lochleven 233IT; Marievale Bird Sanctuary; Morgenzon; Nooitgedacht 392KT; Normandie 178HT; Onverwacht 273IT; Paardeplaats 101HT; Palmietfontein 110IS; Palmietfontein 337IR; Redcliff 426IT; Rietpoort 405IS; Rietpoort 83HS; Rietvlei 375JT; Rietvlei Dam, Pretoria; Roodekopjes 67HS; Roodepoort 598IR; Roodewal 102HS; Rosehaugh Station; Rustfontein 548IR; Silverbank 611IR; Smalkloof 122HS; Smithfield 44IS; Standerton; Sterkfontein 299IS; Tafelkop 126HT; Tafelkop 270IS; Tweefontein 467IS; Verkyk 88HS; Vlakspruit 42HS;

Waaibeuwel 360JU; Wakkerstroom Townlands 121HT; Wanhoop 78JT; Waterval 128HS; Welbedacht 382IS; Welgedacht 82HS; Welgelegen 107IT; Weltevreden 174IS; Witbank 236IS; Wonderfontein 341IR; Zwartwater 288IT.

Literature Records

Lawley; Mbakulu mountains; Modderfontein; Nelshoogte; Pilgrims Rest; Suikerbosrand Nature Reserve (Broadley & Watson, 1976).

Habitat and Ecology

Like other members of the genus, this species is fossorial spending the day under stones, among the roots of grass tussocks and frequently in moribund termitaria. L. c. conjunctus is found in veld types 8, 9, 48, 52, 54, 55, 57, 61, 63 and 64 at altitudes between 1000-2300 m above sea level.

Oviparous, a female containing three ova measuring 10,5-11,5x2,5-3,0 mm was collected in January. Three hatchlings and an unhatched egg were found under a rock on soil during March. Hatchlings measuring 51,0-68,0 mm SVL, 4,5-7,5 mm tail and a mass of 0,10-0,15 g were recorded during February/March. Juveniles measuring 64,5-75,0 mm SVL, tail = 6,0-6,5 mm and a mass of 0,1-0,15 g were recorded from October to January.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread on the highveld the species occurs in three, possibly four provincial nature reserves. Its habitat is subject to

considerable degradation and destruction from agricultural and mining practices. Currently secure, the species should be monitored.

Remarks

The size and shape of the rostral and the number of dorsal scales from rostral to caudal spine are not always clearcut and overlap with L. c. incognitus and L. scutifrons scutifrons (Peters), particularly the latter. De Waal (1978) also experienced difficulties in separating these taxa, remarking on the ratio of tail length to total length as representing sexual dimorphism. Transvaal specimens, as mentioned above, range from 9,25 to 12,75 with only 4/67 (5,97%) reaching 13,0 or greater. This renders Broadley & Watsonsi (1976) key ineffective and highlights the need to investigate this complex. These authors point out that there is no clear intergradation zone between conjunctus and incognitus and that two specimens from Standerton, key out to one typical and one incognitus. This situation occurs frequently but may be the result of too rigid character assessments or intraspecific variability. The specimens of the conjunctus, icognitus and scutifrons complex need to be morphometrically analysed, in attempt to delineate species, which according to current methods exhibit extensive overlap and sympatry. Broadley (1983) mentions the possibility that 'conjunctus' may be a race of L. scutifrons with intergradation in the Orange Free State and also, now, the Transvaal. A greater "in depth" study of these two species is needed.

Leptotyphlops conjunctus incognitus Broadley & Watson, 1976

Leptotyphlops conjunctus incognitus Broadley & Watson, 1976, Occ. Pap. natn. Mus. Rhod. Ser. B, 5(8), p. 494. Type locality: Umtali, Zimbabwe. Pienaar 1978, p. 123; Welch 1982, p. 122; Broadley 1983, p. 56; Pienaar et al, 1983, p. 132, fig. 56; Auerbach 1987, p. 150; Branch 1988a, p. 49, 1988b, p. 11.

Leptotyphlops conjuncta (not Jan). FitzSimons 1962, p. 84 (part); 1966, p. 40 (part), 1970/74, p. 74 (part); Pienaar, 1966, p. 141.

Leptotyphlops conjunctus (not Jan). Jacobsen & Haacke 1980, p. 13; Branch, 1986, p. 290, fig. 1c.

Diagnosis. 162 Specimens examined.

Colour: Uniform black above and below. Some specimens exhibit a white patch on the anal plate and more rarely on the tail tip. Broadley & Watson (1976) record a small white patch covering the first two infralabials.

Lepidosis: Rostral subunguiform in dorsal view, with rounded apex extending to level of posterior border of the eyes, less than 1/3 rd the width of the head; Body scales smooth, in 14 scale rows at midbody, reducing to 10 (rarely 11) at midtail; 230-292 middorsal scales from rostral to caudal spine; subcaudals 26-35 (20-34 in Transvaal specimens).

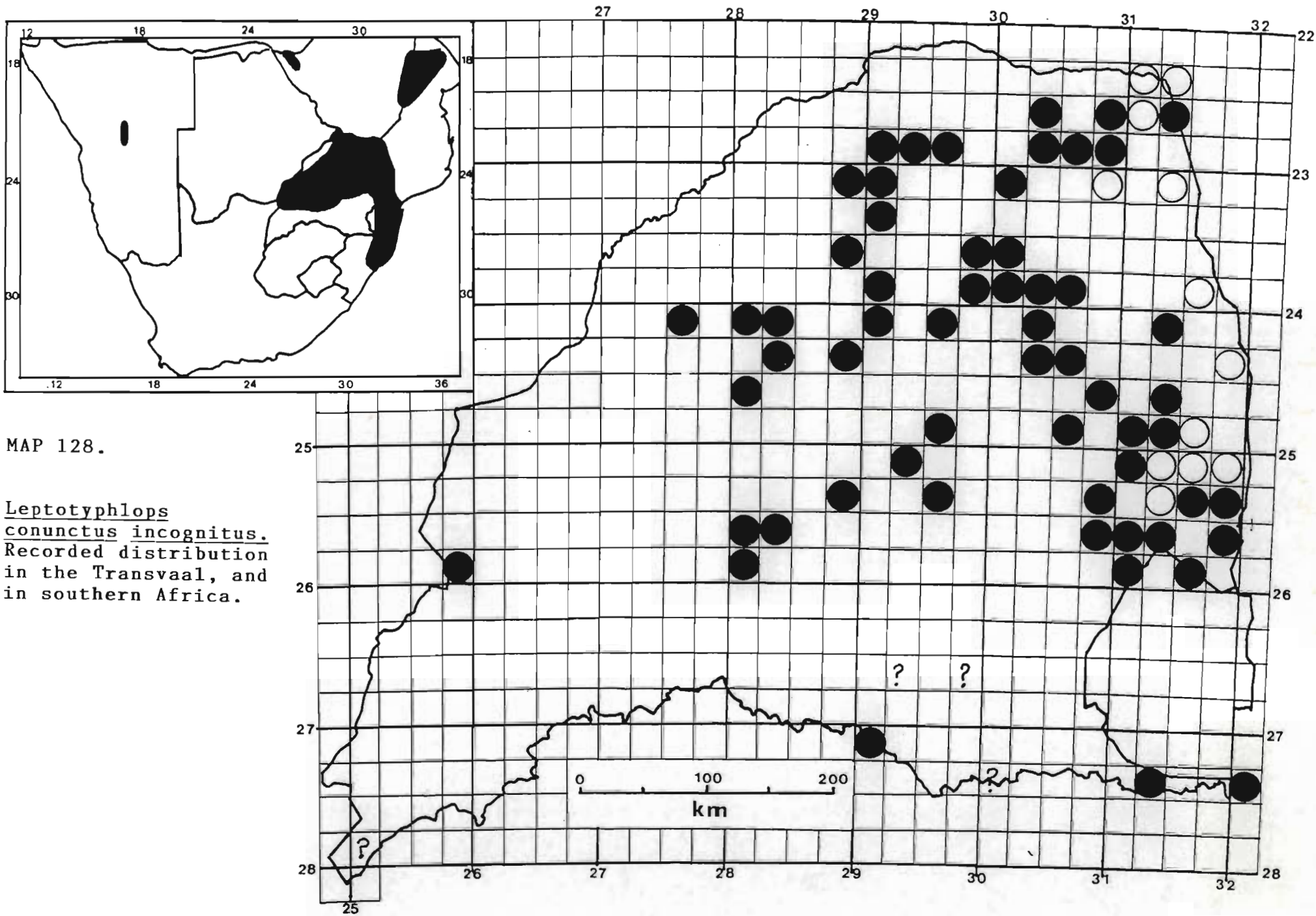
Size: Largest SVL = 166,0 mm (J6937, 8227 - Dantzig 3LS), mass = 1,25 g (N9846 - Sterkfontein 299IS). Mean SVL (100,0 mm) = 124,45 mm \pm 18,95 (1SD), n = 48, mass = 0,41 g \pm 24 (1SD), n = 43. Tail length into total length gives ratios ranging from 8,33 to 12,86 but are mainly less than 11,5. A few specimens 5/64 (7,81%) reach 13,39 or more possibly indicating misidentifications or integrades between cognitus or scutifrons.

Distribution

Southern Zambia, southern Malawi, northern and eastern Zimbabwe, northern and eastern Transvaal, central and southern Mozambique, eastern Swaziland and Kwazulu. An isolated population exists in central South West Africa/Namibia (Broadley & Watson, 1976).

Distribution in the Transvaal, (Map 128).

5 km West of Lukale Hill; 48 km Vaalwater - Ellisras; Altyd Mooi 379LT; Argyle 46KU; Aronsfontein 722LS; Bandelierkop 416LS; Barberton Townlands 369JU; Beauley 260LR; Bellevue C 518JT; Berlyn 670LT; Blouberg; Borkum 143LS; Bultfontein 92JO; Calais 226KT; Christiana 325HU; Clearwaters, Haenertsburg; Dantzig 3LS; De Nyl Zyn Oog 423KR; De Roodepoort 435IS; Diepkloof 186JS; Doorndraaidam Nature Reserve; Eureka City; Excelsior 211JU; F.C. Erasmus Nature Reserve; Geelhoutkloof 195KR; Godlwayo; Griffin Mine, Leydsdorp; Gumela; Gunfontein 71KR; Halfkroonspruitmond; Helena 400JU; Holfontein 126KT; Ka Khayi; Kameelpoort 202JR; Keulen 669LT; Krabbefontein; Ledzee 559LT; Leipsig 274LR; Letaba; Lolamontes 682KS; Loskop Noord 12JS; Louws Creek 271JU; Ludlow 228KU; Malelane 289JU; Mariepskop 420KT; Matangari; Matlala Location; Mgcobaneni; Molepos Location 187KS; Moorddrift 289KR; Mutshenzheni; Nelspruit; Newington 255KU; Nooitgedacht 227KT; Nyandu Bush, Wambiya Sandveld; Parkfield 425MS; Perkeo 223KT; Pretoria District; Pretoria North; Pretoria, Monument Park; Ratomba; Rietvlei 33HS; Riverhead 755LT; Robertson 748MS; Roodeplaat 293JR; Roodewal 251JT; Rustfontein 781LS; S.A. Bantu Trust; Schagen 273JT; Schelem 32KT; Schilderkrans 1041LS; Sekororo; Shilowane; Skukuza; Standerton; Sterkfontein 299IS; Tafelkop 46KR; The Willows 197KT;



MAP 128.

Leptotyphlops
conunctus incognitus.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Vaalboschfontein 188HO; Vaalpenskraal 726LR;
Varkfontein 141KQ; Vhurivhuri Plantation; Wakkerstroom
Townlands 121HT; Welgevonden 36LT; Wintersveld 427MS;
Woodbush; Worcester Mine, Barberton; Zoutpan 459MS.

Literature Records

Pretoriuskop; Numbi area; Gumbandevu ridge, Punda Maria; Olifants camp; Mthlamhala spruit near Phugwane; Shipudze ridge, Punda Maria; Shangoni quarters; Doispane; Shitsokwene ridge near Pumbe; Shingwedzi quarters; Skukuza; rocky outcrop on the south bank of the Luvuvhu river near Shipale spring; Machuluane spruit; Hape area, Pafuri; near Sabie and Sand river confluence; Bangu gorge; Ship mountain; Matukwane ridge, Punda Maria; Msimbit forest along upper reaches of Shinobyeni spruit; Hlanganine sandstone reef; Godleni picket area; Sabie-poort; Lebombos between beacons A and B; Mala-Mala picket area (Pienaar et al, 1983). Beacon R-S; Crocodile Bridge (NMZB).

Habitat and Ecology

A widespread species found in the northern and eastern Transvaal in veld types 8, 9, 10, 11, 14, 15, 18, 19, 20, 63 and 67 at altitudes of 200-1600 m above sea level. Usually found under rocks or rotting logs, occasionally among grass roots adjacent to boulders. Largely insectivorous, feeding on invertebrates such as termites. Presumably oviparous as is the nominate race. Hatchlings and juveniles ranging from 58,0-76,0 mm SVL, tail 5,5-9,0 mm and masses of 0,05-0,15 g were found from September to June indicating a lengthy reproductive season although most were found from March onwards.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread, it occurs in at least two nature reserves and the Kruger National Park. Its status is secure.

Remarks

Difficult to separate from conjunctus and scutifrons although tending to have a low tail to total length ratio as well as higher middorsal scale counts. Overlaps are present and difficult to sort out. Several dubious records exist in the south-eastern and south-western Transvaal which may be attributable to conjunctus and scutifrons respectively. The relationship of the three forms need urgent clarification.

Leptotyphlops scutifrons scutifrons (Peters, 1854)

Stenostoma scutifrons Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 621, 1855, Arch. Naturg, 21, p. 51 and 1865, Monatsb. Akad. Wiss. Berlin, p. 261, pl. fig. 5. Type locality: Sena, Mozambique.

Leptotyphlops scutifrons (Peters). FitzSimons, 1962, p. 86, fig. 18, pl. vi, 1966, p. 40, 1970/74, p. 74; Pienaar, 1966, p. 142, Jacobsen & Haacke, 1980, p. 14.

Leptotyphlops scutifrons scutifrons (Peters). Broadley & Watson, 1976, p. 497, Pienaar 1978, p. 124; De Waal, 1978, p. 80 (part); Welch, 1982, p. 124; Broadley 1983, p. 57, fig. 17; Pienaar et al 1983, p. 133, pl. 57; Auerbach 1987, p. 149, pl. 14, fig. 3; Branch, 1988a, p. 49, pl. 40, 1988b, p. 11.

Diagnosis. 134 Specimens examined.

Colour: Uniform black above and below, scales become pale edged when moisture between the scales evaporates.

Lepidosis: Snout rounded; rostral equal to or broader in width than 1/3 width of head at the level of the posterior margin of the eyes; rostral extending well beyond posterior margin of the eyes. Body covered in smooth, imbricate scales in 14 rows at midbody and 10 (exceptionally 11) rows at midtail; middorsal scales 197 to 307 (Broadley & Watson, 1976) between rostral and caudal spine; subcaudals 19 to 30.

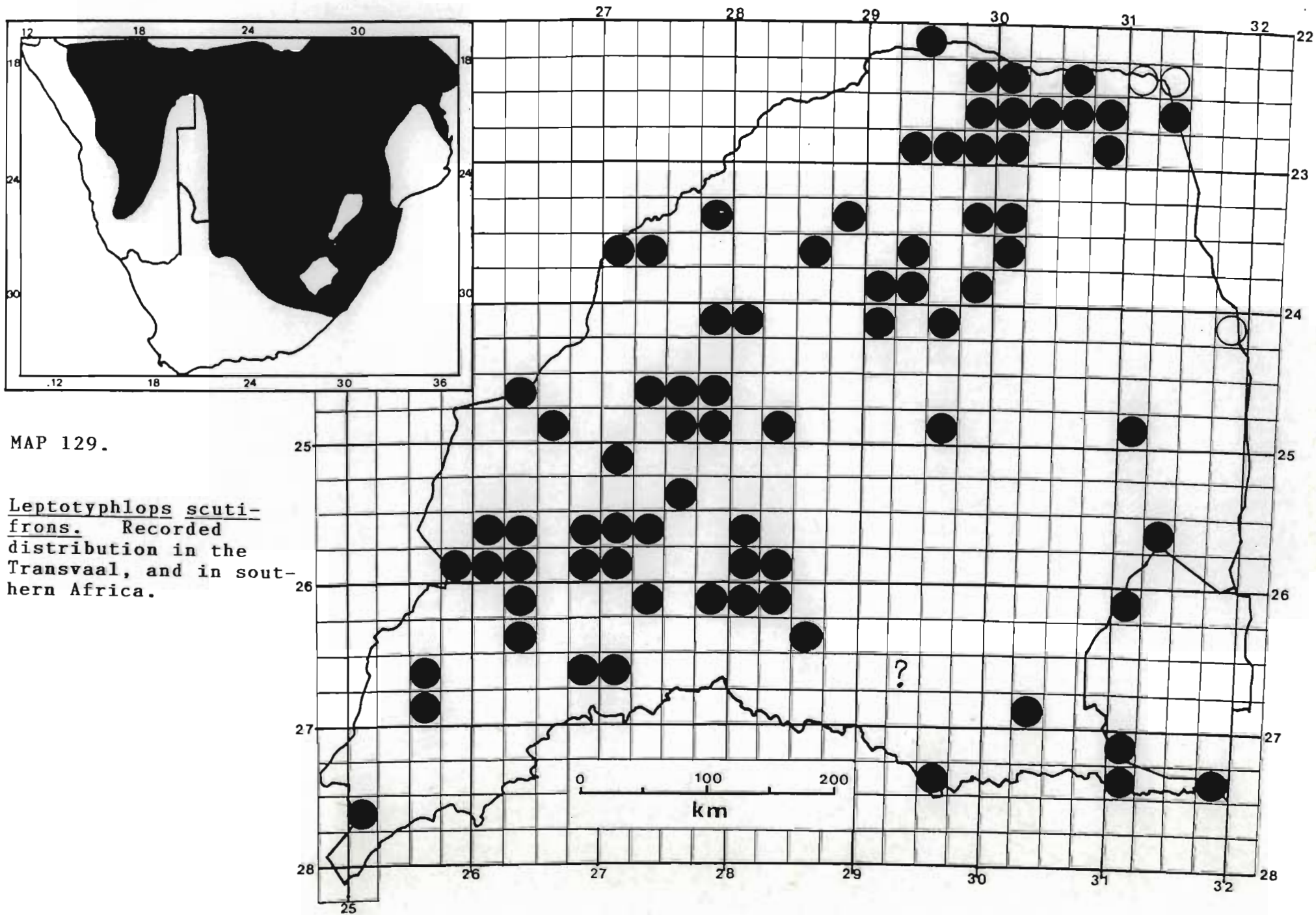
Size: Largest SVL = 207,0 mm (JN 234 - Malonga flats), mass = 1,45 g (JN 234). Mean SVL (100,0 mm) = 140,14 mm + 25,36 (1SD), n = 63, mass = 0,59 g + 0,32 (1SD), n = 59. Ratio of tail length to total length ranges from 8,78 - 18,0 but is mostly 11,0 to 16,0. The lower ratio may indicate incognitus or integrades between this species and scutifrons.

Distribution

Southern Tanzania, south to Natal, westwards to Angola and South West Africa/Namibia.

Distribution in the Transvaal, (Map 129).

5 km West of Lukale Hill; 13 km N.E. Messina; 13 km W. Thabazimbi; Barend 523MS; Bergplaats 25HU; Blouberg; Boschpoort 284JQ; Bulskop 225IP; Bultfontein 92JO; Confidence 17HU; Crimea 747MS; De Krans van Blesbokspruit 305IS; De Pan 51IQ; Diepgezet 388JU; Doornbult 624LS; Doreen 108MT; Evelyn 159MS; Excelsior 266KU; Grootdoorn 292LQ; Grootvlei Mine; Gunfontein 71KR; Harriet's Wish 393LR; Hermanusdoorns 204KQ; Kafferskraal 43JQ; Kalkfontein 615LS; Kameelpan 276HO; Klipbank 406LS; Klipfontein 12IR; Klipkuil 352JP;



Knoppieskraal 484KQ; Kromdraai 106MT; Krugersdorp;
Kuilfontein 324JP; Leiden 340IT; Leonard 360IO;
Lolamontes 682KS; Louws Creek 271JU; Lucerne 198MS;
M'Pefu 202MT; Malonga Flats; Marievale Bird Sanctuary;
Marius; Matlala Location; Molepos Location 187KS;
Mooiville, Rustenburg; Nieuwpoort 516KQ; Olievenbosch
506KQ; Ostend 63MT; Paradise 724MS; Pentonville 216LQ;
Percy Fyfe Nature Reserve; Philipstown 390MS;
Pietersburg; Pipe Klip Berg 21HU; Pongola Nature
Reserve; Potchefstroom; Pretoria; Pretoria, Mayville;
Prince's Hill 704MS; Rhenosterhoekspruit 466KQ;
Rietvlei Dam, Pretoria; Rondavelskraal 290JP; Roodewal
322JQ; Rustenburg Nature Reserve; Saselandongaspruit;
Schrikfontein 715LR; Smaldale 225KP; Sonskyn Spa,
Messina; Springs District; Stompiesfontein, PK.
Strijdom - Germiston; Thabazimbi; Tilburg 145LQ;
Transvaal; Trevenna 119MT; Tshamavhudzi Peak; Twee
Rivier 197JQ; Uitenpas 2MT; Umkoonyan 42HU; Vaalbank
110IP; Vhurivhuri Plantation; Vogelfontein 400JP;
Vygeboompoort 456KR; Warmbaths; Warmbaths area;
Waterberg, pbly; Waterval 128HS; Waterval 273KU; Weipe
47MS; Welgevonden 312IO; Witpan 20IP; Witrand 457JP;
Wonderfontein 258JP; Woodbush; Zaailand 662LS; Zeerust
Townlands; Zoetfontein 137LT; Zuni Zuni 96KP.

Literature Records

Nyandu sandveld; Pumbe sandveld; Selati (NMZB).

Habitat and Ecology

Widespread over the whole of the Transvaal being found in most veld types at altitudes ranging from 200-1600 m above sea level. Usually found under stones, rotting logs or among grass roots adjacent to rocks or moribund

termitaria. Occasionally found on the surface during or after heavy rains. Oviparous, up to five elongate ova are laid at a time.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread in the Kruger National Park and at least in two provincial nature reserves, the status of this species is secure.

Remarks

A larger species than both conjunctus and incognitus, with a higher tail to body length ratio. However, overlaps of most characters occur, making the identification of many specimens difficult. In some cases specimens collected at the same locality and close to one another were identified as belonging to two different species. A more detailed investigation of the conjunctus - scutifrons complex is needed. Branch (1986) has examined the hemipenes of an "aberrant" conjunctus from Sibaya and scutifrons from Durban which show some differences. It is necessary to obtain good examples of each taxon and concentrate on morphological differences including hemipenal shape and ornamentation and ultimately also protein and enzyme analyses. Morphological characters can be analysed once the relationships of the various forms have been clarified.

Leptotyphlops distanti (Boulenger, 1892)

Glauconia distanti Boulenger, 1892, in Distant, "A. naturalist in the Transvaal", p. 175 & figs. Type locality: Pretoria, Transvaal.

Leptotyphlops distanti (Boulenger). FitzSimons, 1962, p. 88, fig. 18, 1966, p. 41; 1970/74, p. 74; Pienaar 1966, p. 143, 1978, p. 125; Broadley & Watson, 1976, p. 501, fig. 17; Jacobsen & Haacke, 1980, p. 15; Welch 1982, p. 122; Broadley 1983, p. 59, fig. 19 & 20; Pienaar et al, 1983, p. 135, pl. 58; Branch 1988a, p. 49, pl. 40, 1988b, p. 11.

Diagnosis. 88 Specimens examined.

Colour: Uniform black above and below, the scales become pale edged when the moisture between the scales has evaporated. This results in a spotted appearance.

Lepidosis: Snout rounded; rostral large, unguiform in dorsal view. Rostral and prefrontal fused; rostral about two thirds width of head at the level of the eyes; occipital usually divided. Body covered with smooth, overlapping scales, in 14 rows at midbody and 12 rows at midtail; middorsal scales range from 239 to 307 from rostral to caudal spine; Subcaudals 19 to 30.

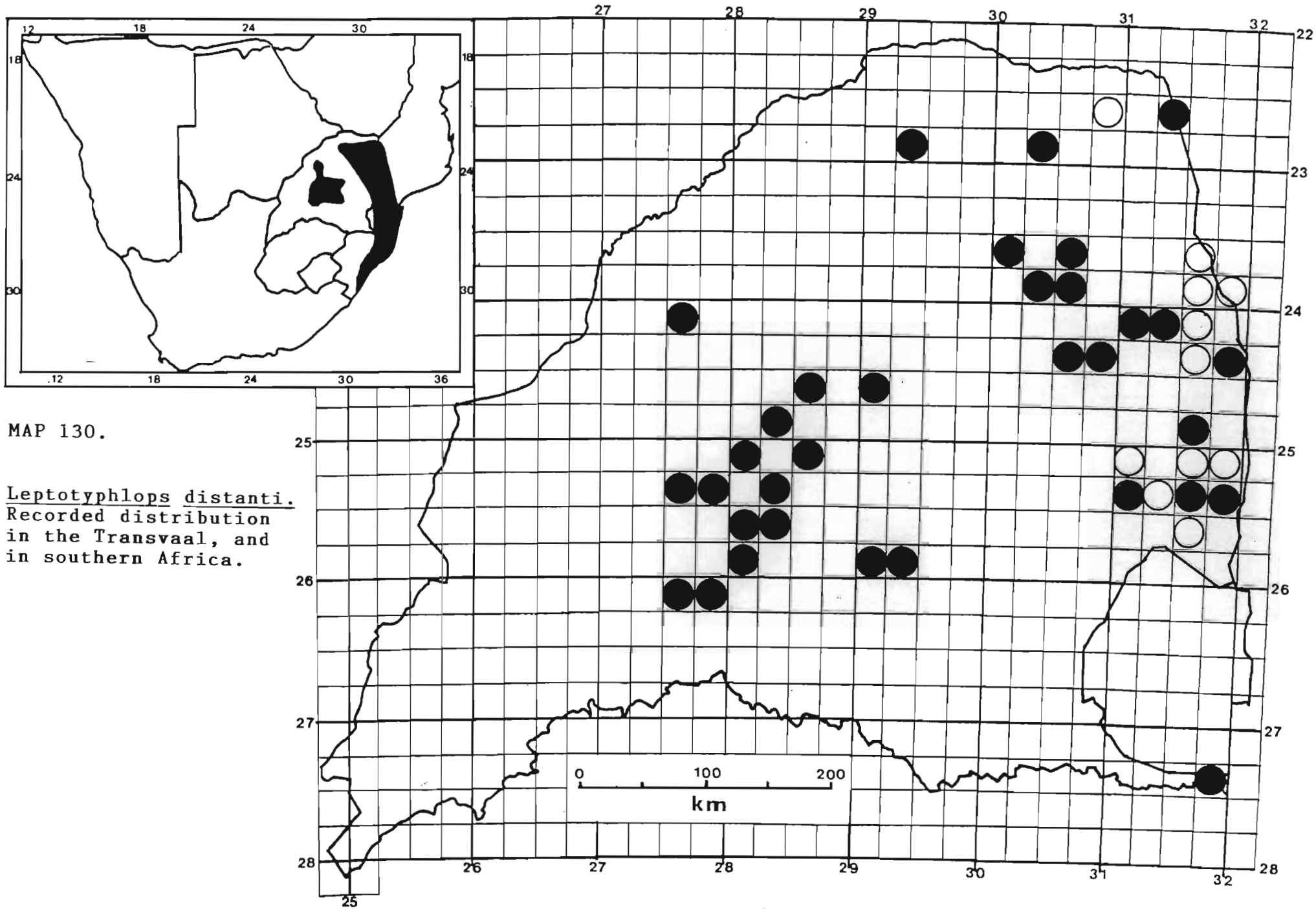
Size: Largest SVL = 183,0 mm (P10555 - Leeuwpoot 283JS), mass = 1,5 g (P10555). Mean SVL (100,0 mm) = 136,43 mm \pm 24,41 (1SD), n = 14, mass = 0,58 g \pm 0,33 (1SD), n = 14. Ratio of tail to total length range from 10,07 to 19,12 with males probably ranging from 10,0 - 13,0 and females from 14,0 - 20,0.

Distribution

Central, northern and eastern Transvaal, southern Mozambique and Natal/KwaZulu.

Distribution in the Transvaal, (Map 130).

24 km N.E. of Pretoria; Berlyn 670LT; Blyolifants Nature Reserve; Broedershoek 129JU; Calais 226KT; Gewenscht 562KS; Gollel 73HU; Griffin Mine, Leydsdorp;



Halfkroonspruit; Hans Merensky Nature Reserve;
Hartebeestpoort E 215JQ; Hectorspruit 164JU; Hlaralumi;
Kaapmuiden 212JU; Lake Fundudzi; Leeuwkraal 92JR;
Leeuwpoort 283JS; Lyttelton 381JR; Meidingen 423LT;
Nwanedzi; Nyandu Bush, Wambiya Sandveld; Nylsvley
Nature Reserve; Philipstown 390MS; Pinedene; Plat
River, Pretoria Dist.; Pretoria; Pretoria District;
Pretoria North; Pretoria, Koedoespoort; Pretoria,
Mayville; Pretoria, Meintjieskop; Pretoria,
Pienaarsrivierdam; Pretoria, Proclamation Hill;
Pretoria, Pyramid; Pretoria, Quaggaspoort; Pretoria,
Sunnyside; Rust der Winter Nature Reserve; Skukuza;
Swartkrans - Krugersdorp; Transvaal; Varkfontein 141KQ;
Vygeboompoort 456KR; Waterberg District; Waterval
220JQ; Witbank Townlands; Zeekoegat 12KU; Zwartkops
356JR; Zwartkrans 172IQ; pibly Waterberg.

Literature Records

Pretoriuskop; Numbi circular drive; Matukwane ridge,
Punda Maria; Olifants camp; Munweni, eastern boundary;
Mabakana spruit headwaters in the Lebombos; Skukuza;
near confluence of Sabie and Sand rivers; eastern
boundary between Mathlakuza pan and Nwambiya; Hlanganine
sandstone reef; upper reaches of Shinobyeni spruit,
Lebombos; eastern boundary between Nchindo and Tabaglovu
beacons; Crocodile bridge camp (Pienaar et al, 1983).
Irene; Pretoria, Rietfontein; Pumbe Sandveld (NMZB).

Habitat and Ecology

Widespread in the Transvaal being found in veld types 9,
10, 11, 12, 15, 18, 19 and 61 at altitudes ranging from
250-1600 m above sea level. Usually found under stones
or logs or among grass roots. Insectivorous it feeds on

termites and other small invertebrates usually found in the upper 20 cm of soil. The species is preyed upon by Atractaspis bibronii.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species is under no threat and occurs in the Kruger National Park and at least two provincial nature reserves.

Remarks

Broadley & Watson (1976) report on the difference in the mean middorsal scale counts of populations from the central and northern Transvaal and those from the Lowveld. The former range from 239 to 290 and the latter from 252 to 309.

Family : BOIDAE

Genus Python Daudin, 1803

Python Daudin (part), 1803, Mag. Encycl., p. 434 and Hist. Nat. Rept., 5, p. 226. Type: Coluber molurus Linnaeus.

Head flattened, elongate and distinct from neck. Premaxillary, maxillary and mandibular teeth present and recurved decreasing posteriorly. Head shields small and relatively symmetrical. Anterior upper and some lower labials have heat sensory pits. Eye round with a vertical pupil. The body is stout and covered with small smooth scales; ventrals moderately developed, distinctly narrower than body width. Tail short to moderately long and prehensile; Subcaudals mostly in two rows. Oviparous. Only one species, sebae occurs in the Transvaal incorporating the subspecies natalensis (Broadley, 1983, 1984).

Python sebae natalensis A. Smith, 1840

Python natalensis A. Smith, 1840, Ill. Zool. S. Africa, Rept., pl. ix. Type locality: Port Natal.

Python sebae (not Gmelin). FitzSimons, 1962, p. 93, pl., 1966, p. 41, 1970/74, p. 75; Pienaar, 1966, p. 144, 1978, p. 127; Jacobsen & Haacke, 1980, p. 16; Welch 1982, p. 132.

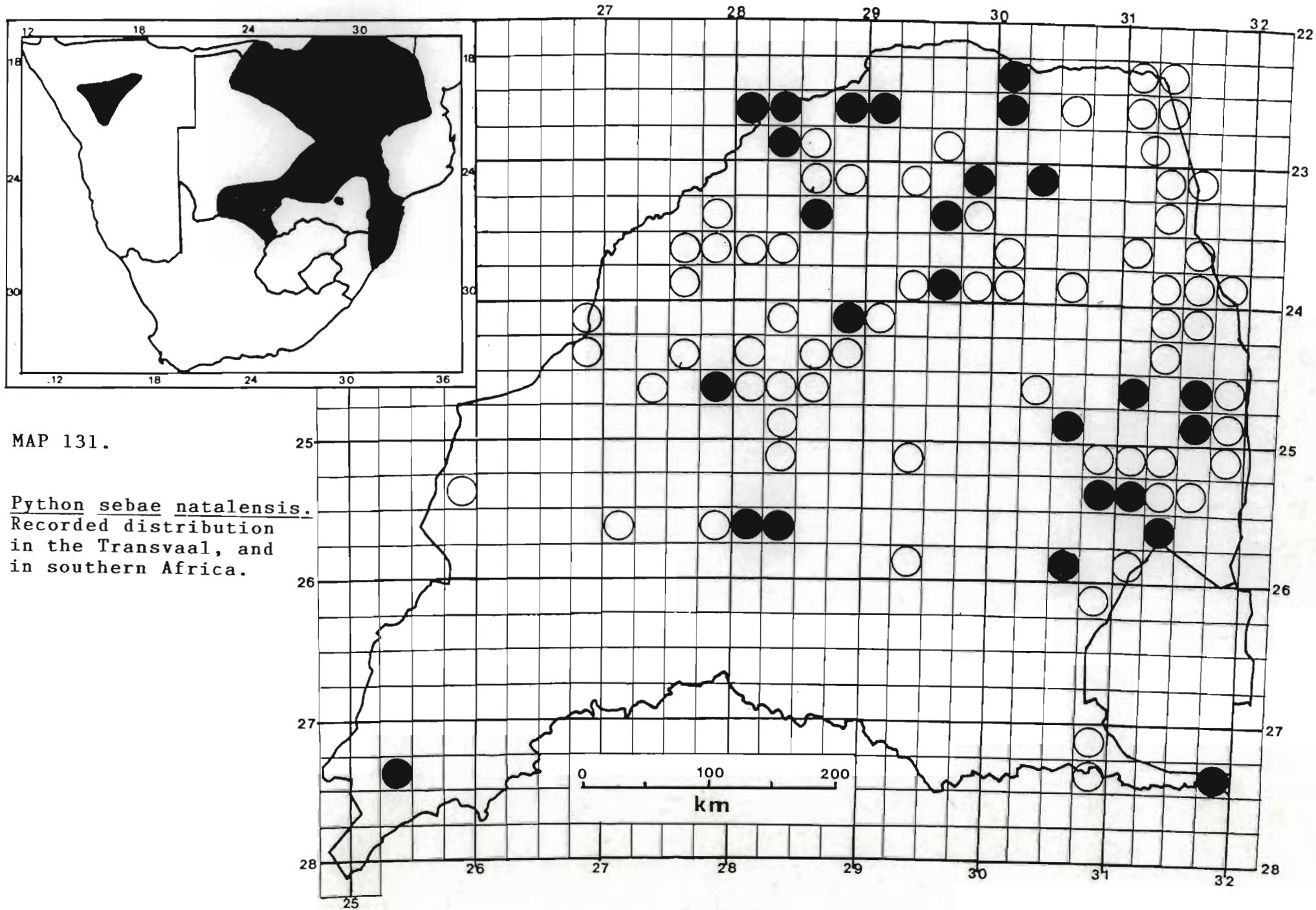
Python sebae natalensis A. Smith. Broadley, 1983, p. 64, fig. 25, pl. 7, 1984, p. 359, fig. 1; Pienaar et al, 1983, p. 136, pl. 59; Branch, 1986, p. 285. Auerbach 1987, p. 152, pl. 14, fig. 4; Branch 1988a, p. 51, pl. 17, 1988b, p. 11.

Diagnosis. 40 Specimens examined.

Colour: Variable, but ground colour above usually a light brown to brown, with dark brown, black edged, somewhat sinuous crossbars or transverse blotches, which are more or less connected by a continuous or interrupted very dark brown band running along on either side of the back forming a ladder-like pattern. The sides are finely spotted with black and with a series of large, irregular, dark, often pale centred spots, which may coalesce with the dark markings above. A large spearhead-shaped dark brown marking with apex pointing forwards on the crown of the head, bordered on either side by a light to pinkish brown stripe beginning at the tip of the snout and passing back above the eye to the temple. Tail above with pale vertebral stripe, bordered by a black edged, dark brown stripe. Underparts white or yellowish white more or less speckled and spotted with dark brown or black.

Lepidosis: A large snake with a cylindrical body and elongated head. Rostral as broad as deep with two obliquely arranged pits sited one on either side; supralabials 10-16; infralabials 17 - 24; circumorbitals 8-13; intrasupraoculars 2-7. Body scales smooth and 78-99 at midbody; Ventrals 260-291; subcaudals 63-84. Vestiges of the hindlimbs are visible as claw-like spurs on either side of the vent.

Size: The species may attain a length of six metres. A male 4,25 m in length had a mass of 44 kg during the summer months. The same individual at the end of the cold season, two years later had a mass of 36 kg (Jacobsen, 1977). A 4,3 m female had a mass of 41 kg while captive fed snakes five metres long have been known to achieve a mass of 55 kg (Broadley, 1983).



Distribution

Southern Angola, south-eastern and eastern Zaire, Zambia, Burundi and southern Tanzania south to northern South West Africa/Namibia, Botswana and the north-eastern parts of South Africa. Has been reintroduced to the eastern Cape Province.

Distribution in the Transvaal, (Map 131).

Andover 210KU; Ben Lavin Nature Reserve; Berg en Dalen 53MR; Canterbury 254MR; Coventry 261MS; Doornhoek, Komati R.; Doornveld 426LS; Doreen 108MT; Eureka City; Karino Farm 134JU; Klaserie; Levubu 15LT; Malamala 359KU; Manyeleti Game Reserve, Main Camp; Matjeskraal 1047LS; Middelbosch 139HO; Nelspruit; Ohrigstad; Okkernootboom 211KU; Pongola Nature Reserve; Preezburg 400LR; Pretoria, Koedoespoort; Pretoria, Roberts Heights; Pretoria, Wonderboompoort; Rankin's Pass; Sterkwater, Potgietersrus; Transvaal; Tuli 56MR; Umzinto 36MR; Umzumbi 21MR.

Literature Records

Barberton; Blouberg; Brits; Brondal; Burgersfort; Comondale; Gollel; Gravelotte; Hectorspruit; Houtbosdorp; Kaapmuiden; Kingfisherspruit; Kralingen; Krantzkop; Krokodilpoort; Letaba Camp; Leydsdorp; Linokana; Lochiel; Louis Trichardt; Louws Creek; Lower Sabie; Maasstroom; Mala-Mala; Mara; Marken; Mataffin; Melkrivier; Messina; Mestelspruit; Middelburg; Mooketsi; Naphe; Nhlavulume; Nylstroom; Overysseel; Pafuri; Palala; Pietersburg; Piet Retief; Potgietersrust; Punda Milia; Rivulets; Rustenburg; Rust der Winter; Sabie; Schagen; Shilowapoort;

Skukuza; Tendi River; Thabazimbi; Timbavati; Tolwe; Tshokwane; Vaalwater; Warmbaths; Waterpoort; White River; Zoekmekaar (FitzSimons, 1962). Lower Sabie road; Tsende river near Mabohlelene; Punda Maria; Nhlarulume spruit; Kolwane spruit; Makadze spruit near Tambuti waterhole; Mlondozi spruit near Nténté; Shilowa poort; Machai pan; Nwatindlopfu drift, main road; Pafuri, near Hape; Lower Sabie road near Skukuza; Manung dam; Mlondozi spruit at Mbaduankomo; western boundary at Buffelshoek; between Timbavati drift and Shisakashangondzo dam; near Hartebeesfontein dam; Tsumanene spruit, Nwanedzi section; Munweni; eastern boundary; upper reaches of the Nwashitsaka spruit (Nahpe road); Hartebeesfontein camp; Saliji road near Sand river mouth; near Nwatimhiri-Sabie river junction; Mala-Mala picket; Mestel spruit; between the Sabie and Sand rivers; Leeupan; Mlondozi-Sabie river junction; Olifants river road near Ndsio drift; Mashetse koppies. Mbyashishe; Nwaswitsontso koppies, western boundary; near Shirombe pan turn-off Nyandu firebreak; "Msimbit" pass en route to Shipale spring; near Madziringwe picket; Magovane picket; between the Olifants and Letaba rivers east of Mangwainduna; near Majekejekene windmill; Mondzweni windmill; Timfeneni; Malelane gate; Chauke waterhole, Mlambane spruit; Shilauri koppie; Klipkoppies drift, Letaba river; Mtjulu spruit; Klipkoppies; Babalala; Balule; west of Red Rocks; Dzombo spruit (Pienaar et al, 1983). Wolkberg wilderness area (Snyders, 1987).

Sight Records

Doreen 108MT; Glen Alpine 304LR; Tilburg 145LQ; Canterbury 254MR; Tuli 56MR; Bottellang 115MR; Berg en Dal 53MR; Wonderboomhoek 550LQ; New York 490LQ; Buffelskraal 486LR; Doornvlei 426LS; Klein Engeland

9KP; Smaldeel 36KP; Doorndraai 282KE; Bergfontein 277KQ; Klaserie; Ben Lavin Nature Reserve.

Habitat and Ecology

The species is equally at home among rocky kopjes as among bushveld being found in all veld types with the exception of the highveld i.e. veld types 48, 52, 54, 55, 57 and 62 and occurs at altitudes ranging from 300-1700 m above sea level. It is therefore very versatile, living in the holes of other animals including those of mongooses, springhares and antbears but also in rock crevices and holes under rocks. Broadley (1983) has given a detailed account of the ecology and behaviour of the species. Both diurnal and nocturnal they feed on a great variety of prey including birds, rodents and larger mammals, reptiles and even fish. When feeding at night the heat sensory pits at the front of the snout guide the snake to the prey. The Southern African python is oviparous laying up to 60 ova (Broadley 1983, Branch, 1980 and others). The ova are almost spherical when hardened and leathery measuring about 10 cm in diameter with a mass of 150 g. The female assists incubation by elevating her body temperature by up to 6,5°C to reach 30°C. Incubation is variable but on average two months. The hatchlings slit the egg with an eggtooth on the snout and the young snakes from 45-60 cm in length emerges. Dispersal takes place within the first month after birth.

Conservation Status (RDB 1988, vulnerable)

Partially protected. Transvaal Nature Conservation Ordinance 12 of 1983. The species is vulnerable but is well represented in the Kruger National Park and many provincial nature reserves. However most populations are

small and possibly non-viable. Until details of density are available a vulnerable status is justified.

Remarks

Broadley (1984) discussed the status of natalensis as a valid subspecies and showed justification for the reinstatement of this taxon. Branch (1984) compared the hemipenes of African pythons indicating the great difference between dwarf species and those of P. s. natalensis. It remains to determine how the nominate race sebae fits into the patterns so far established.

Family : COLUBRIDAE

Genus: Lycodonomorphus FitzSinger, 1843

Lycodonomorphus Fitzinger, 1843, Syst. Rept. p. 27.

Type: Coronella rufula Schlegel = Coluber rufulus Lichtenstein.

A group of aquatic snakes found south of the equator. Medium sized to small snakes with slender to moderately robust cylindrical bodies and a head slightly flattened and wider than the neck. Eyes are moderately large with round to elliptic pupils. Tail short to medium length, longer in males. Dorsal scales are smooth, imbricate and in 19-25 rows at midbody. Subcaudals are paired. Oviparous.

Three species are found in the Transvaal mostly along the moister escarpment but one species extends into the moister bushveld areas.

Key to the Transvaal species

1. Subcaudals less than 60 in males; less than 50 in females L. whytii obscuriventris
 Subcaudals more than 60 in males, more than 50 in females 2

2. Pupil round or subcircular; first upper labial with a backward prolongation which may make contact with the loreal L. laevisimus fitzsimonsi
 Pupil vertically elliptic; first upper labial without a backward prolongation ... L. rufulus

Lycodonomorphus laevissimus fitzsimonsi Raw, 1973

Lycodonomorphus laevissimus fitzsimonsi, Raw, 1973, Ann. Natal Mus. 21(3), p. 715. Type locality: Lothair, Transvaal. Jacobsen & Haacke, 1980, p. 17; Welch 1982, p. 153; Broadley 1983, p. 75, fig. 30; Branch 1988a, p. 57, 1988b, p. 12.

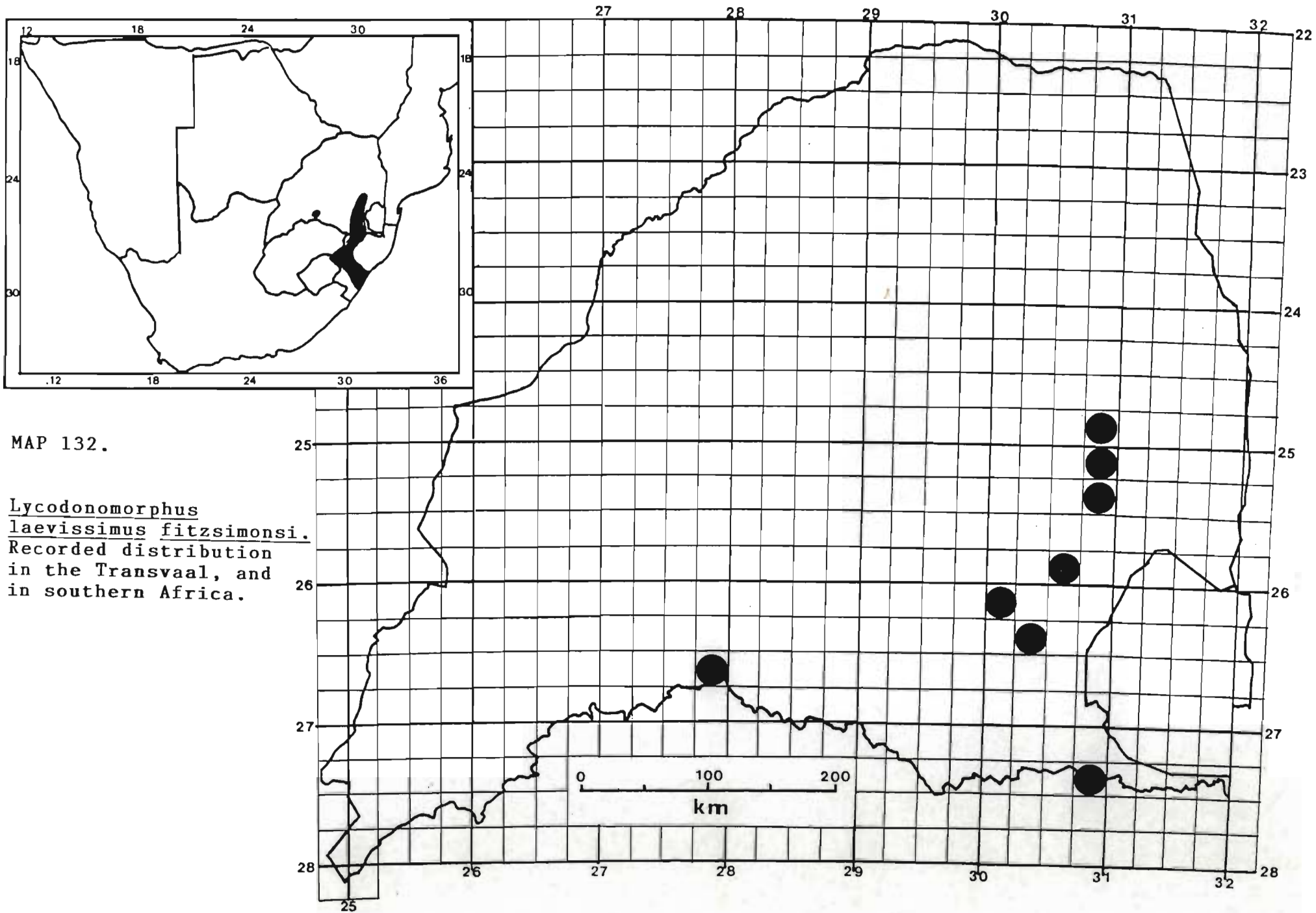
Lycodonomorphus laevissimus (Günther) (part). FitzSimons 1962, p. 104, 1966, p. 47, 1970, p. 82, 1974, p. 82.

Diagnosis. 9 Specimens examined.

Colour: Dark olive grey to brownish black or glossy black above and on the sides or one or two outer scale rows pale like the underparts and each bearing an elongated dark spot to form thus a broken lateral streak. Upper lips spotted. Sometimes an indistinct pale streak extends from behind the eye up to the angle of the jaw. Below yellowish white to yellow. Can usually be positively identified by a conspicuous longitudinal median plumbeous to blackish, irregular band or a series of more or less coalescent spots from the chin or base of throat to end of tail. Exceptionally the entire undersurface may be dark except for the chin and throat.

Lepidosis: Similar to typical laevissimus but differs in having mostly 21 scale rows (range 17-21) at midbody. Preocular 1 (rarely 2); postoculars 2; UL 8 (rarely 7) with 4th and 5th (rarely 3rd and 4th) entering the orbit; Body scales smooth and imbricate; Ventrals 170 to 174 in males and 171 to 173 in females, although a female from Boschrand 283JT had an exceptionally low count of 166; Subcaudals 68-86 in males, 62-69 in females. Caudal autotomy evident with 1/9 (11,1%) of tails truncated.

Size: Largest SVL recorded by Broadley (1983) from Natal was 867,0 mm. Two specimens measured in the Transvaal, had SVL's of 488,0 mm and 642,0 mm with masses of 50,0 g and 67,4 mm respectively.



Distribution

Natal midlands northwards to the south-eastern, eastern and southern Transvaal.

Distribution in the Transvaal, (Map 132).

Badplaas; Bendor 211HT; Blyde River Nature Reserve; Boschrand 283JT; Carolina Town and Townlands 43IT; Lisbon Falls; Lothair 124IT; Three Rivers; Vergenoeg 177JT.

Sight records

An unconfirmed record from the farm Enkeldoorns 35JT (P. Baragwanath, pers. comm.).

Habitat and Ecology

An uncommon species associated with veld types 8, 48, 57, 63 and 64 at altitudes ranging from 1200-1700 m above sea level. Usually found alongside perennial streams in grassland, it may take to the water if disturbed. The species feeds on amphibians and is oviparous. Raw (1973) recorded the largest specimen as containing 17 ova. Another specimen TM44100 contained 4 ova, indicating a great variability possibly coupled to size and age.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Uncommon, the species appears to have a wide distribution in the Transvaal and occurs in at least one provincial nature reserve. According to S. Botha (pers. comm.) the species is not uncommon around Vereeniging. Can be considered secure at present.

Remarks

The subspecies fitzsimonsi appears to show variations linking it with laevissimus and to a lesser extent natalensis. Three of nine specimens had midbody scale counts of 19 or less. While a fourth had 20. This indicates a less clearcut difference between the nominate race and fitzsimonsi. One female mentioned previously had a ventral scale count of 166, almost within range of natalensis. A clinal distribution cannot be ruled out, and the species may be in need of revision.

Lycodonomorphus rufulus (Lichtenstein, 1823)

Coluber rufulus Lichtenstein, 1823, Verz. Doubl. Zool. Mus. Berlin, p. 105. Type locality: South Africa.

Lycodonomorphus rufulus rufulus (Lichtenstein).
FitzSimons 1962, p. 106, 1966, p. 47, 1970, p. 83;
Pienaar 1966, p. 150.

Lycodonomorphus rufulus (Lichtenstein). FitzSimons, 1974, p. 83; Pienaar, 1978, p. 132; Jacobson & Haacke, 1980, p. 18; Welch, 1982, p. 153; Broadley, 1983, p. 76, figs. 32 & 33; Pienaar et al, 1983, p. 143, pl. 60; De Waal, 1978, p. 85; Auerbach, 1987, p. 155, pl. 14, fig. 6; Branch 1988a, p. 58, pl. 32, 1988b, p. 12.

Diagnosis. 146 Specimens examined.

Colour: Like the previous species, a medium sized snake, easily recognisable by its uniform dark brown to olive brown colour above. Older specimens may become glossy black. Upper lip and underparts of the body usually a delicate pale to salmon pink, but may be yellow or even have a mother of pearl colour. Underside of the tail often with an irregular bluish-grey or brown median band from vent to tip. Eyes dark brown and flecked with red. The pupil edged with reddish brown.

Lepidosis: A moderately slender snake, with a head small but distinct from the neck; pupil of eye vertically elliptic and first upper labial without a backward prolongation. Body scales smooth, imbricate and in 19 (rarely 21) scale rows at midbody; Ventral scales 158-179 (usually 166-176); anal scale entire (exceptionally divided) and subcaudals 53-86 seldom exceeding 69 in females or less than 68 in males, however two males from Woodbush and the farm Rustfontein 1030LS had 63 and 64 respectively.

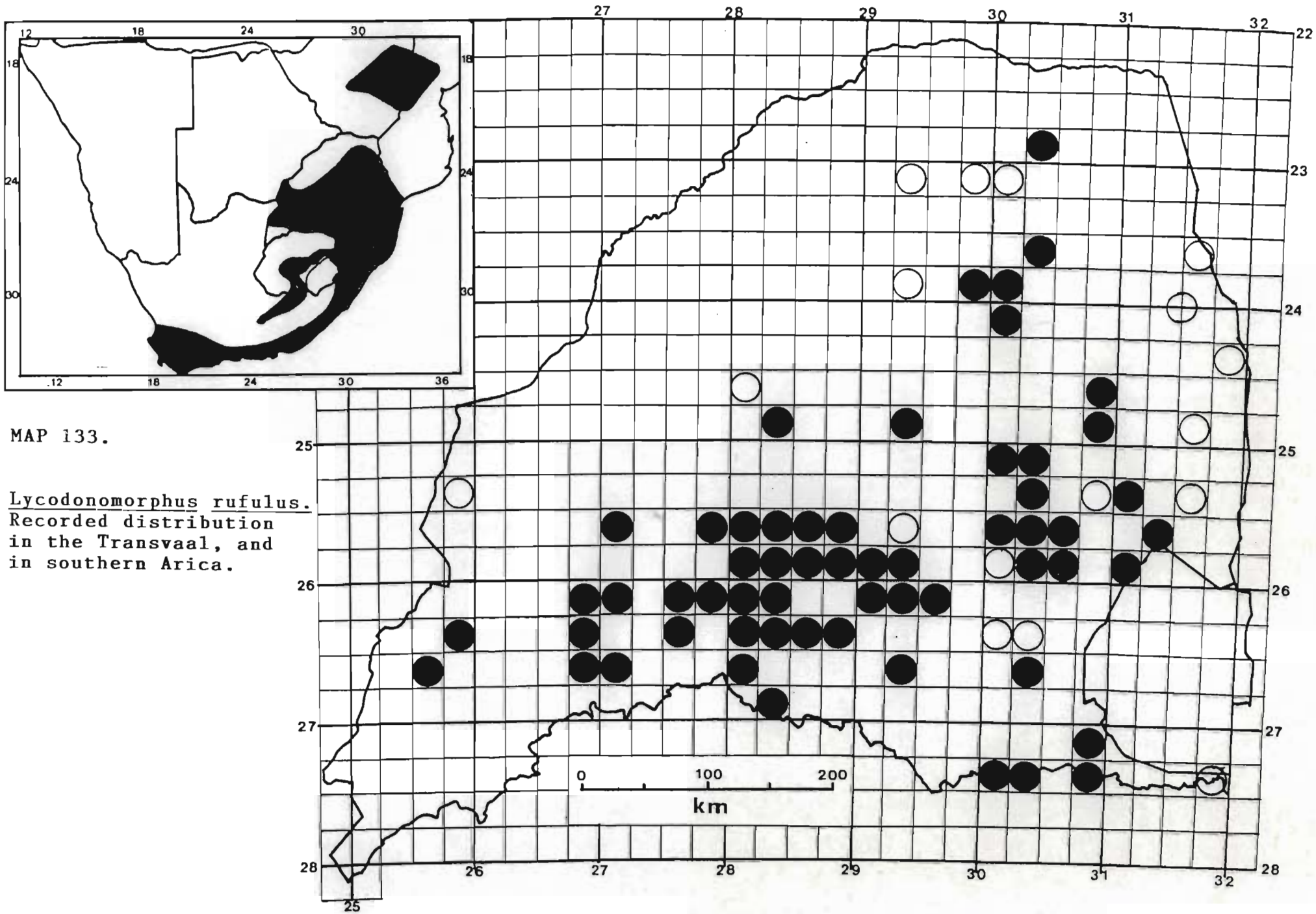
Size: Largest male SVL = 511,0 mm (N7909 - Loopfontein 298JT), mass = 40,5 g (P10422 - Suikerboschfontein 422JT); Largest female SVL = (JN 3738 - Dap Naude dam); Mean male SVL (250,0 mm) = 373,57 mm \pm 79,89 (1SD), n = 21, mass = 24,27 g \pm 12,47 (1SD), n = 21; Mean female SVL (250,0 mm) = 403,70 mm \pm 83,28 (1SD), n = 10, mass = 33,04 g \pm 21,27 (1SD), n = 10. This is considerably smaller than the average length of 60-75 cm recorded by Broadley (1983). Duncan (1979) reports a specimen from Rivonia, Johannesburg measuring just over 100,0 cm.

Distribution

Widespread in southern Africa from south of the Zambesi to the eastern Cape Province.

Distribution in the Transvaal, (Map 133).

5 km East of Kempton Park; 32 km E. of Pretoria; Bakenkop 157HT; Bendor 211HT; Bethal; Blesboklaagte 181IR; Boekenhoutkloof; Boekenhoutskloof; Bovenste Oog van Mooi Rivier 68IQ; Brits, Crocodile R.; Britsville 483IR; Broederstroom, Haenertsburg; Bronkhorstspruit; Clearwaters, Haenertsburg; Clewer; Cullinan; Dap Naude Dam; De Bilt 372JU; De Kroon; De Kroon, Crocodile R.;



De Kuilen 205JT; Derdepoort 327JR; Driefontein, Jhb. nr. Dalmore Stn.; Elandsfontein 727JT; Elandskuil 208IP; Enkeldoorns 35JT; Entabeni 251MT; Entabeni 251MT, Matiwa Lookout; Gemsbokfontein 290IQ; Goedvertrouwd 499JR; Grootvlei Mine; Halfway House; Hartebeespoort Dam; NW. area of Heidelbergkloof; Irene; Johannesburg; Johannesburg, Robin Acres; Johannesburg, The Willows; ;Jukse River, Alexandra; Kaapmuiden 212JU; Kafferskraal 381IR; Kafferstad 195IS; Lake Fundudzi; Lakenvlei 355JT; Langzeekoegat 325IR; Loopfontein 298JT; Lydenburg; Malemetsa; Maloney's Eye 169IQ; Marble Hall 29JS; Mariepskop 420KT; Mauchsberg; Middelburg Town and Townlands 287JS; Middelkraal 50IS; Modderfontein; Normandie 178HT; Oshoek 69JT; Pilgrim's Rest; Pinedene; Potchefstroom Town and Townlands 435IQ; Pretoria; Pretoria District; Pretoria, hazelwood; Pretoria, Kameeldrift East; Pretoria, Lazaretto; Pretoria, Moreleta Spruit; Pretoria, Murrayfield; Pretoria, Sunnyside; Pretoria, University Farm; Rhenosterfontein 494JP; Rietfontein 313IR; Roodeplaat 293JR; Rooipoort 354IP; Rustenburg; Rustfontein 1030LS; Serala 5KT; Somerset 150JT; Suikerboschfontein 422JT; Tzaneen 538LT; Vierfontein 61IS; Vlakfontein 457JR; Vlakspruit 308IS; Vygeboom; Waaihoek 286IT; Wakkerstroom Townlands 121HT; Waterval Boven; Welgevonden 312IO; White River 64JU; Witbank; Wolkberg - Haenertsburg; Woodbush; Zooihuis 148IO; Zoutpansberg Dist.; Zuurbron 132HT.

Literature Records

Botschabelo; Brondal; Gollel; Hectorspruit; Kralingen; Lake Chrissie; Leeupan; Letaba Causeway; Linokana; Lothair; Louis Trichardt; Machadodorp; Magaliesberg; Mara; Mataffin; Mphome; Pietersburg;

Piet Retief; Premier Mine; Ratomba; Satara (FitzSimons, 1962). Skukuza; Sabie river 3,2 km west of Skukuza; Letaba river causeway; Olifants river near Nhlarulume mouth, (Pienar et al, 1983). Johannesburg, Rivonia (Duncan 1979). Wolkberg wilderness area, (Snyders, 1987). Sewefontein, Carolina; the Downs (NMZB).

Habitat and Ecology

A widespread species, it is aquatic and most commonly found around permanent water such as streams, rivers, pans and quarries, usually under rocks or other debris and in holes close to water or in swampy terrain. Nocturnal, it enters water readily feeding mostly on frogs but also fish. They can remain submerged for considerable periods of time. They feed frequently, often consuming several prey items in a night. Usually solitary, several specimens may be found in favourable areas. J1016 was found in the company of two common night adders (Causus rhombeatus) approximately 100 m from the nearest water. The species is highly versatile, being found at altitudes ranging from 1000-2000 m in veld types 8, 9, 10, 11, 15, 18, 48, 50, 52, 55, 57, 61, 63 and 64. Oviparous the species lays from 3-10 eggs during midsummer. The ova measure 36,0x14,0 mm with a mass of 4,8 g. Four eggs incubated at between 20,7-31,5°C hatched in 37 days, the neonates measuring 161,0-176,0 mm SVL with a mass of 2,70-2,75 g Dyer (1979) recorded two clutches, one of which numbered 10 eggs. Egg sizes ranged from 29,5-30,0x15,0-17,0 mm. One clutch took 46 days to hatch. Specimens ranging from 132,0-173,0 mm SVL were collected in the field from October to May indicating a lengthy reproductive season.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Being a widespread species it is found in the Kruger National Park and many provincial nature reserves. The species appears to be most common on the highveld and escarpment. Its status appears secure.

Remarks

The species appears to be consistent as far as lepidosis is concerned. However three specimens from Woodbush and the farm Rustfontein 1030LS have 21 scale rows at midbody. Two of these were males with subcaudal numbering 63 and 64 respectively, which is lower than that recorded by Broadley (1983). All specimens were darkly coloured ventrally.

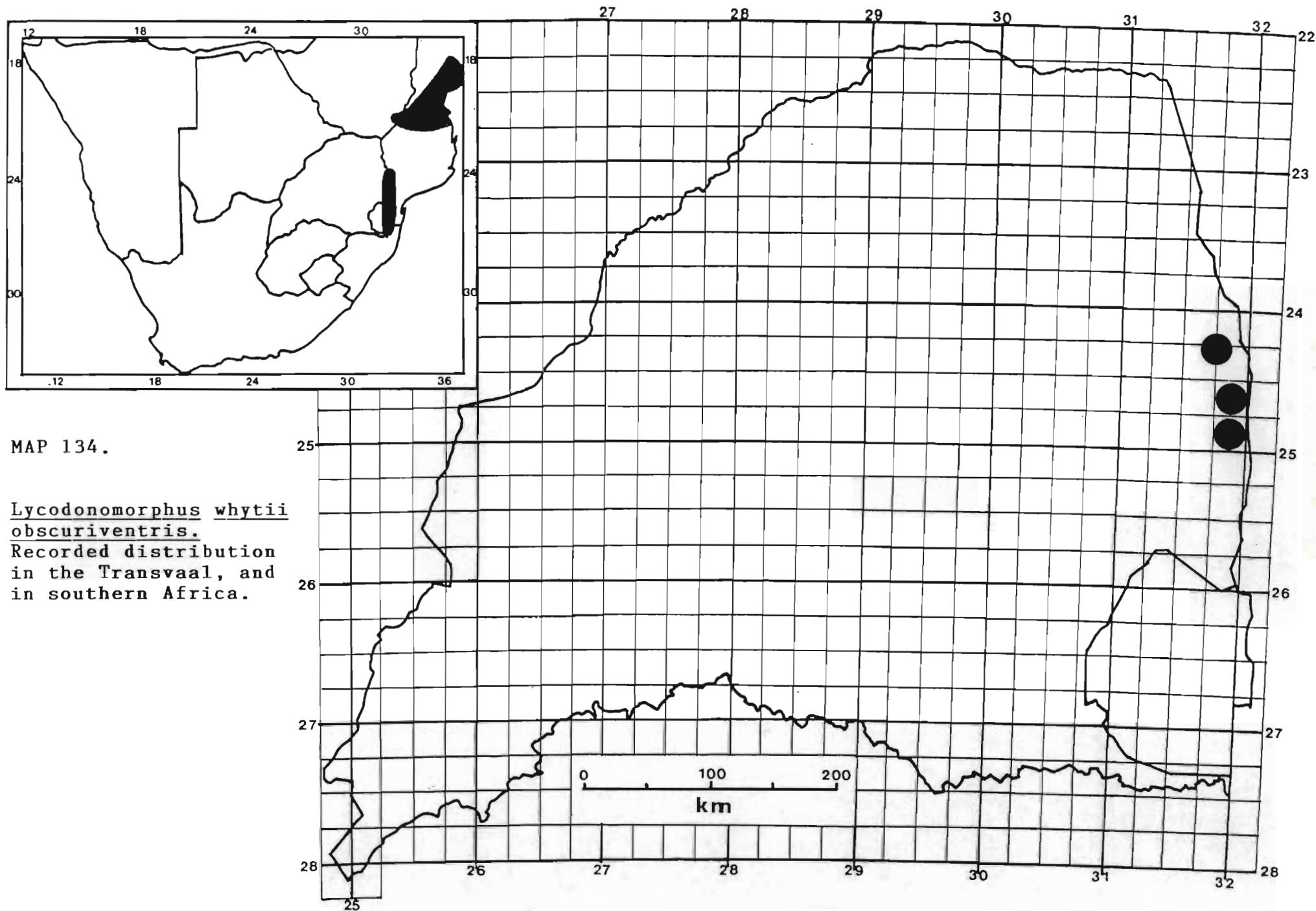
Lycodonomorphus whytii obscuriventris FitzSimons, 1964

Lycodonomorphus whytii obscuriventris FitzSimons, 1964, Koedoe 7, p. 26. Type locality: Ngirivane windmill, Kruger National Park, Transvaal. FitzSimons, 1966, p. 47, 1970, p. 86; Pienaar, 1966, p. 151, 1978, p. 133; Broadley, 1983, p. 78, figs. 34 & 35; Pienaar et al, 1983, p. 144, pl. 61; Branch, 1988a, p. 58, pl. 33, 1988b, p. 12.

Lycodonomorphus whytii (Boulenger). FitzSimons, 1974, p. 86; Jacobsen & Haacke, 1980, p. 19; Welch, 1982, p. 153.

Diagnosis: 3 Specimens examined.

Colour: Uniform shiny dark olive brown to blackish above. Upperlip pale but slightly sooty at the lower edge. Chin and throat pale below with dusky markings



MAP 134.

Lycodonomorphus whytii
obscuriventris.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

along the edges of the lower lip, chin and over the belly. These become more pronounced towards the midbelly region which becomes completely darkened towards the tail tip.

Lepidosis: A small species with a robust body and short tail. Head distinct from neck. Pupil of eyes round or semicircular, first upper labial with a backward projecting prolongation. Body scales smooth and imbricate and in 19 scale rows at midbody; Ventrals 164-165 in males, 167-175 in females, anal scale entire; Subcaudals 51-52 in males and 37-42 in females (Broadley, 1983).

Size: Broadley (1983) recorded the SVL of the largest male (UM17627 - Marhumbeni, Zimbabwe) = 250,0 mm while the largest female SVL = 575,0 mm (UM8956 - Beira, Mozambique).

Distribution

Floodplains of Mozambique south of the Zambesi to northern KwaZulu, west to Zimbabwe, the Southern Kruger National Park and eastern Swaziland.

Distribution in the Transvaal, (Map 134).

Leeupan; Mazite Dam; Ngirivane Windmill.

No additional specimens have been collected but it is likely that the species occurs in the Komatipoort area.

Habitat and Ecology

Appears to favour standing bodies of water including pans and dams, foraging for food among the grass at the waters edge. Has been collected both during the day and at

night. Feeds primarily on amphibians which it finds among the vegetation around the pans. Culverwell (pers. comm.) mentions that in Swaziland the species may be locally common around pans. Found in veld types 10 and 11 at 200-300 m altitude.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. To date only known to occur in the central district of the Kruger National Park, in Transvaal. Rare, additional surveys are needed to establish the presence of the species outside of the KNP.

Genus: Lamprophis Fitzinger, 1843

Lamprophis Fitzinger, 1843, Syst. Rept., p. 25. Type: Coluber aurora Linnaeus.

A group of small to medium sized, slender to stocky snakes widespread in tropical and southern Africa and extending into Arabia. Head small but wider than neck. Body cylindrical and stout as an adaptation to prey capture. Tail short. Body covered in smooth, imbricate scales in 17-31 rows at midbody. Anal scale entire and subcaudals paired. Mostly terrestrial or partially rupicolous, and nocturnal, this group is fairly divergent in appearance, and anatomy, which has led to divergent viewpoints considering relationships (Visser 1979). Oviparous. There are six species in the Transvaal one of which is widespread while four species occur mainly along the eastern highveld and escarpment zone.

Key to the Transvaal species.

1. Scales in 17 rows at midbody;
subcaudals 75-91 L. swazicus
Scales in 19 or more rows at midbody;
Subcaudals less than 75 2

2. Scales in 19 rows at midbody; uniform
olive brown above; upper lip and outer
two rows of scales on either side of body
yellow L. fuscus
Scales in 21 or more rows at
midbody 3

3. Midbody scale rows 21-23 (rarely 25);
no pale stripes on top of head 4
Midbody scale rows 27-35 (rarely 25);
a pair of pale stripes extending from
tip of snout through eye and along the
upper temporal border L. fuliginosus

4. Rich olive to olive green above, with
a well defined yellow to orange vertebral
stripe; Subcaudals 46-58 in males,
35-48 in females L. aurora
Brown, grey-brown, dark olive or blackish
above, with or without dark blotches;
Subcaudals 58-72 in males, 45-56 in
females 5

5. Eye diameter greater than its distance
from the lip; Yellow-brown to grey-
brown above usually with blotches which
may be confluent to form a zigzag pattern
particularly anteriorly; Ventrals 186-
230 L. guttatus
Eye diameter subequal to its distance
from the lip; Uniform olive grey to
black above; Ventrals 170-196 L. inornatus

Lamprophis fuscus Boulenger, 1893

Lamprophis fuscus Boulenger, 1893, Cat. Snakes 1, p. 322, pl. xx, fig. 4. Type locality: Cape of Good Hope. FitzSimons, 1962, p. 109, 1966, p. 46, 1970/74, p. 86; De Waal 1978, p. 85; Jacobsen & Haacke, 1980, p. 20; Welch 1982, p. 152; Broadley 1983, p. 80, figs. 37 & 38; Branch 1988a, p. 60, pl. 32, 1988b, p. 12.

Diagnosis: 2 Specimens examined.

Colour: Uniform olive brown to olive green above. Upper-lip, sides and belly yellow, usually brighter on sides than below.

Lepidosis: A small moderately slender snake with the head not very distinct from the neck. Scales on body smooth and imbricate, without apical pits and in 19 scale rows at midbody; ventrals 165-201; subcaudals 51-74.

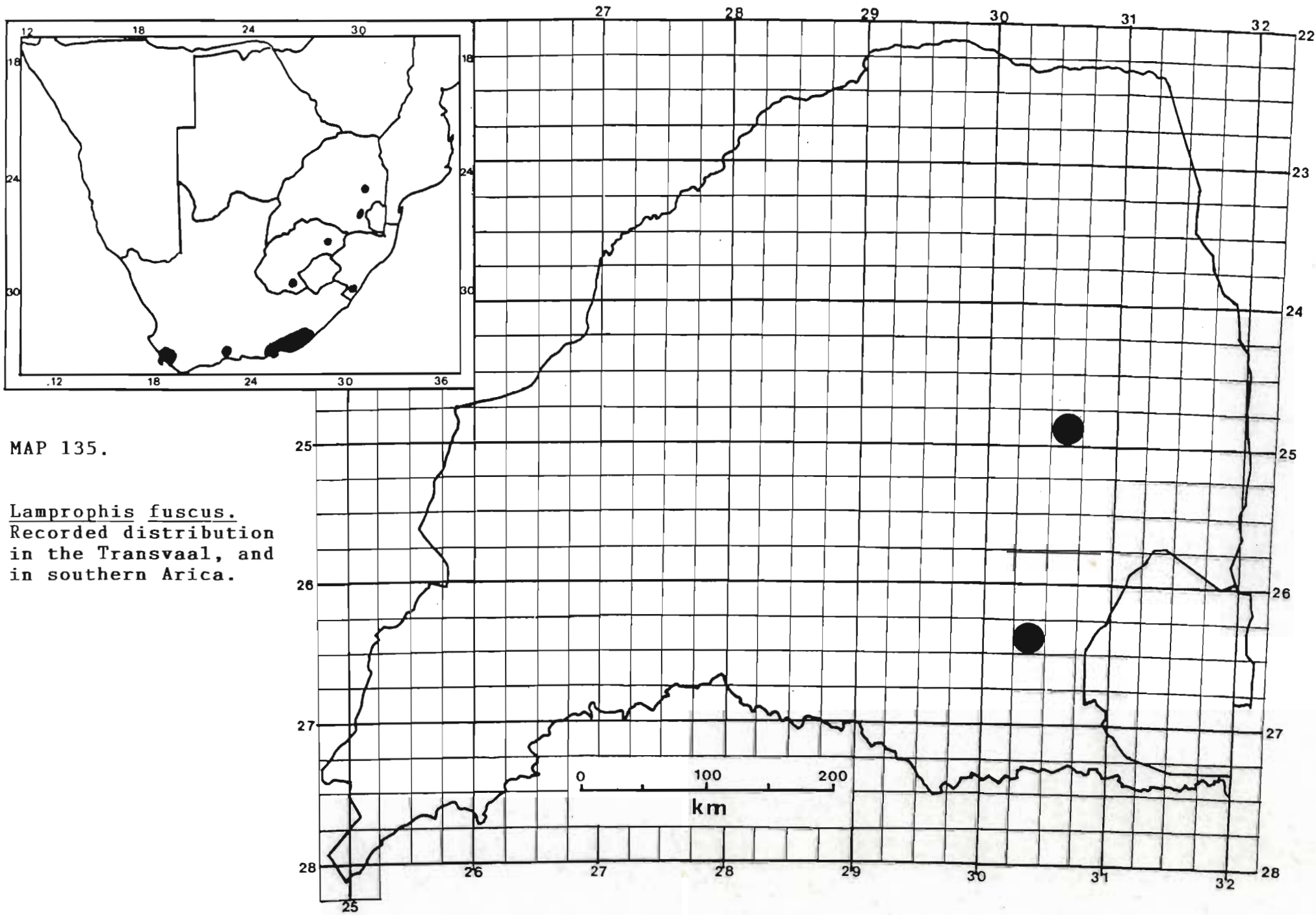
Size: Broadley (1983) recorded that the largest specimen actually measured (SAM 43769 - Witsand) had a SVL = 273,0 mm. Boulenger (1893) gives the SVL of the type male as 460,0 mm, this being the greatest length so far recorded for this species.

Distribution

From the Cape Peninsula through the Orange Free State to the south-eastern Transvaal.

Distribution in the Transvaal, (Map 135).

Doornhoek 545KT; Lothair 124IT.



MAP 135.

Lamprophis fuscus.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Habitat and Ecology

Little is known of this rare species which has been found under stones and in moribund termitaria in open grassland. Found in veld types 8 and 57 at altitudes of 1700-1800 m in the Transvaal.

Conservation Status (RDB 1988, rare)

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare vulnerable species, it is not known to occur in any provincial nature reserve. The current status is vulnerable and details of habitat and habits as well as total distribution are urgently needed.

Remarks

The Lothair specimen, a female, appears atypical with its higher ventral (201) and lower subcaudal (51) counts.

Lamprophis aurora (Linnaeus, 1754)

Coluber aurora Linnaeus, 1754, Mus. Adolph. Frid., p. 25, pl. xix, fig. 1 and 1758, Syst. Nat., ed. 10, p. 219. Type locality: America, (erroneus).

Lamprophis aurora (Linnaeus). FitzSimons, 1962, p. 112, 1966, p. 46, 1970/74, p. 87, De Waal 1978, p. 86; Jacobsen & Haacke 1980, p. 21; Welch, 1982, p. 151; Broadley 1983, p. 83, fig. 41; Branch 1988a, p. 59, pl. 32, 1988b, p. 12.

Diagnosis: 78 Specimens examined.

Colour: Usually a clear shiny olive to bright olive green, green or yellowish citrine above. A vertebral stripe of orange, yellow brown or yellow-orange, is a very good distinguishing character. The young appear

much darker, due to black-edged, green-centred body scales.

Lepidosis: A robust snake with head moderately distinct from the neck. Internasals shorter than prefrontals; loreal longer than deep; Body scales smooth and imbricate in 23 (rarely 21) scale rows at midbody; Ventrals 165-185 (mostly 171-183 in the Transvaal); Subcaudals 35-58 (46-58 in males and 35-48 in females). Tail short. Broadley (1983) discusses the shape and position of the hemipenes.

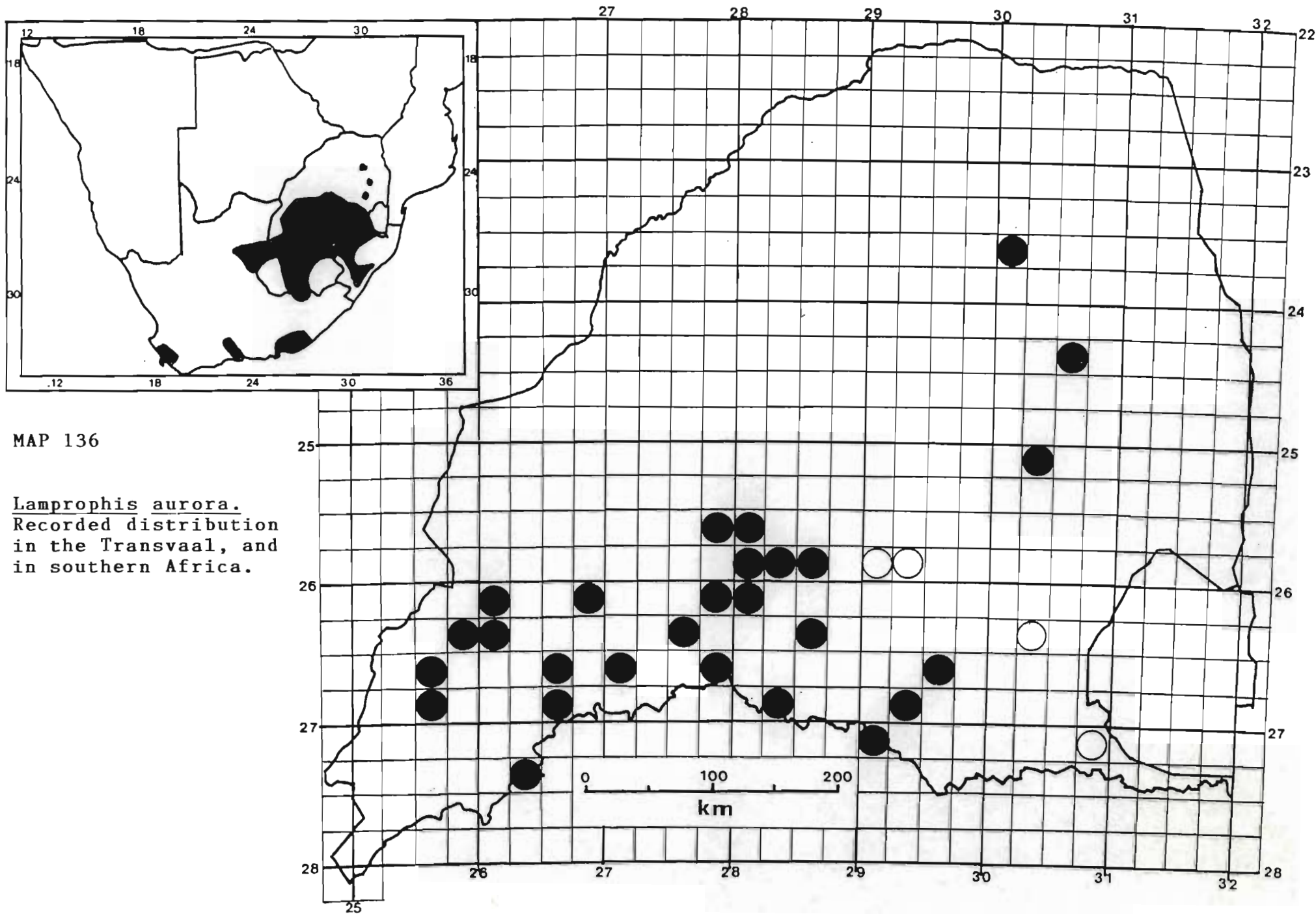
Size: Broadley (1983), records the SVL of the largest male measured as 459,0 mm (TM 6026 - Brits) and the largest female (BM 3333 - Olive Hill, O.F.S.) has a SVL of 643,0 mm. The largest female measured in the Transvaal has as SVL of 575,0 mm (N9657 - Klipspruit 89HP). Mean SVL (250,0 mm) = 385,50 mm \pm 116,69 (1SD), n = 5, mass = 35,38 g \pm 22,34 (1SD), n = 5.

Distribution

Southern Cape Province north to Lesotho, southern Natal, Orange Free State, South and Central Transvaal.

Distribution in the Transvaal (Map 136).

Barberspan Nature Reserve; Bedford View; Brits; Bronkhorstspuit; Daspoort Range; De Deur 539IQ; Doornbult 81IP; Germiston; Halfway House; Hondsrivier 508JR; Irene; Johannesburg; Johannesburg - Hartebeespoort Dam; Johannesburg, Parktown; Johannesburg, Rivonia; Johannesburg, Wadeville; Kaalfontein; Kempton Park, Cresslawn; Klerksdorp; Klipspruit 89HP; Krabbefontein; Leonard 360IO; Lichtenburg Town and Townlands 27IP; Lydenburg; Mahemsvlei 365IP; Marievale Bird Sanctuary; Modderfontein; Morgenzon; Nooitgedacht alias Vetpan



131IP; Perkeo 223KT; Pleizier 113IQ; Potchefstroom
Town and Townlands 435IQ; Pretoria; Pretoria, Aapies
River; Pretoria, Arcadia; Pretoria, Claremont;
Pretoria, Clubview; Pretoria, Gezina; Pretoria, New
Muckleneuk; Pretoria, Queenswood; Pretoria,
Rietfontein; Pretoria, Rietvlei Dam; Pretoria, Riviera;
Pretoria, Rosslyn; Pretoria Villieria; Pretoria,
Waterkloof; Pretoria, Waverley; Pretoria, Zoological
Gardens; Randfontein; Randfontein, Kloof Mine;
Rietfontein, Derdepoort; Rietvlei 33HS; Standerton;
Tiegerpoort 371JR; Vaaldam; Verwoerdburg.

Literature Records

Derdepoort; Lothair; Middelburg; Piet Retief;
Welgedacht; West Rand; Witbank (FitzSimons, 1962).

Habitat and Ecology

Mostly a highveld species it occurs in veld types 16, 48, 50, 52 and 61 at altitudes ranging from 1400-1700 m above sea level. Usually found in grassland, often alongside or close to streams, under stones or more rarely in moribund termitaria. Nocturnal, it feeds mostly on lizards and small rodents.

Oviparous, 8 to 12 eggs measuring 35,0x20,0 mm are laid in summer. Broadley (1983) records that the average total length of neonates is 200,0 mm. Dyer (1979) recorded a clutch of nine eggs measuring on average 41,0x19,0 mm which had an incubation period of 72-78 days.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. An uncommon although

widespread species it appears to be more common on the highveld than in the rest of the Transvaal.. Although occurring on several provincial nature reserves, more detailed surveys of the reserves is needed to fully establish their status. Currently considered secure but needing monitoring.

Remarks

Transvaal specimens appear to fall into the ranges of values discussed by Broadley (1983).

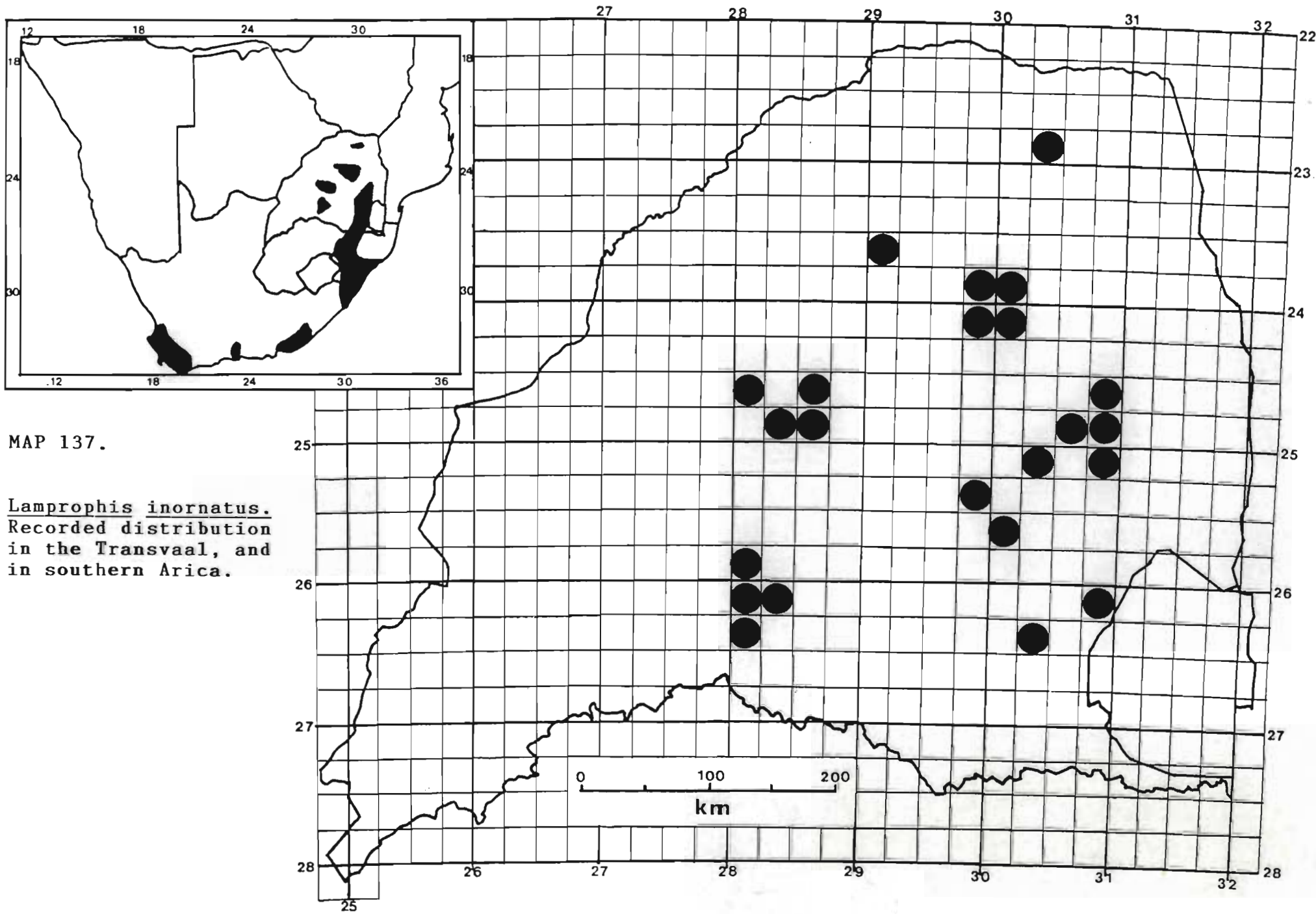
Lamprophis inornatus Duméril & Bibron, 1854

Lamprohis inornatus Duméril & Bibron, 1854, Erp. Gen., 7, p. 464. Type locality: Environs of the Cape of Good Hope. FitzSimons 1962, p. 114, 1966, p. 46, 1970/74, p. 87, De Waal, 1978, p. 87; Jacobsen & Haacke 1980, p. 22; Welch, 1982, p. 152; Broadley, 1983, p. 84, fig. 42; Branch 1988a, p. 59, 1988b, p. 12.

Diagnosis: 42 Specimens examined.

Colour: Uniform dark olive, olive grey, olive brown to brownish black or black above. Underparts uniformly dark grey with, on occasions, chin, throat and forepart of body pale lemon, dull yellowish to greyish white or plumbeus. An irregular dark band may occasionally be present along the middle of the belly. Eye is orange to orange brown.

Lepidosis: A stout snake with the head only moderately distinct from the neck. Head slightly depressed. Internasals shorter than prefrontals; loreal longer than deep; eye diameter subequal to its distance from lip; Body covered in smooth, imbricate scales without apical pits and arranged in 21-23 scale rows at midbody;



Ventrals 170-196 (174-189 in Transvaal); Subcaudals 45-70, with males having 58-70 and females 45-56.

Size: Broadley (1983) records the species as attaining 130 cm in total length. The largest male SVL in the Transvaal = 760,0 mm (N11721 - Pilgrims Rest), mass = 220,0 g (N11721); Largest female SVL = 500,0 mm (J1138 - Matiwa lookout, Entabeni). Mean SVL (300,0 mm) = 543,5 mm \pm 198,36 (1SD), n = 3, mass = 94,83 g \pm 108,44 (1SD), n = 3.

Distribution

From the western Cape Province eastwards to Natal and the eastern and northern Transvaal.

Distribution in the Transvaal (Map 137).

Benoni; Berg en Dal 378JT; Boschhoek 36JT; Bourkes Luck 454KT; D.R. De Wet Forest Station; Diepgelegen 945LS; Doornkop School, Witpoort; Entabeni 251MT, Matiwa Lookout; Holme Park; Irene; Johannesburg; Johannesburg, Mondeor; Johannesburg, Orange Grove; Johannesburg, The Hill; Kralingen 395KR; Lochiel 192IT; Lothair 124IT; Mariepskop 420KT; Middelfontein; New Agatha Forest Station; Pilgrim's Rest; Rondefontein 974LS; Rustfontein 1030LS; Sabie; The Downs 34KT; Tonteldoos; Tzaneen 538LT; Warmbaths; Wolkberg; Woodbush; Zandfontein.

Literature Records

Germiston (FitzSimons, 1962). Wolkberg wilderness area (Snyders, 1987).

Habitat and Ecology

An uncommon nocturnal species, most common on the highveld and escarpment. Found in veld types 8, 57 and 64 at altitudes of 1500 - 1800 m above sea level. Usually found under rocks on soil, in or under rotting logs in grassland and more rarely forest. Feeds mainly on lizards and rodents, one specimen having consumed a Mabuya varia and another a Mabuya s. punctatissimus. Oviparous, 6-12 eggs measuring 38-40x24-26 mm are laid in early to midsummer, (Broadley, 1983). A clutch of 11 eggs collected under a rock on 20.11.79 measured 31,8-42,8x22,9-25,6 mm with a total mass of 180,0 g or approximately 16,36 each. Haagner & Carpenter (1987) record a clutch of 7 eggs measuring 38,2-45,2x24,2-25,1 mm, while Bates (1985) recorded a clutch of 5 eggs measuring 35-39x20 mm. The incubation period is 73-74 days (Haagner & Carpenter, 1987). Hatchlings measure 192,0-226,5 mm with a mass of 4,5-7,3 g. Bates (1985) discusses a case of sperm retention in the species based on a female which laid eight eggs after a year without a male. This however does not prove sperm retention as the eggs, which failed to hatch, could have been infertile.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare snake in the Transvaal the species is not secure and monitoring is necessary. However it is more common elsewhere in South Africa.

Remarks

The records from the Waterberg are atypical as far as habitat is concerned and of rare occurrence and should be re-examined. De Villiers (1983) reported a case of albinism in this species from the Cape Province. The colour of the snake varied from uniform light mustard yellow dorsally to whitish yellow ventrally. The eyes and tongue were pink.

Lamprophis guttatus (A. Smith) 1843

Lycodon guttatus A. Smith, 1843, Ill. Zool. S. Afr., Rept. pl. xxiii. Type locality: "Beyond Kurrichane", probably in error for Cape Province.

Boaedon guttatus (A. Smith). FitzSimons 1962, p. 116, 1966, p. 45, 1970/74, p. 88; De Waal, 1978, p. 88;

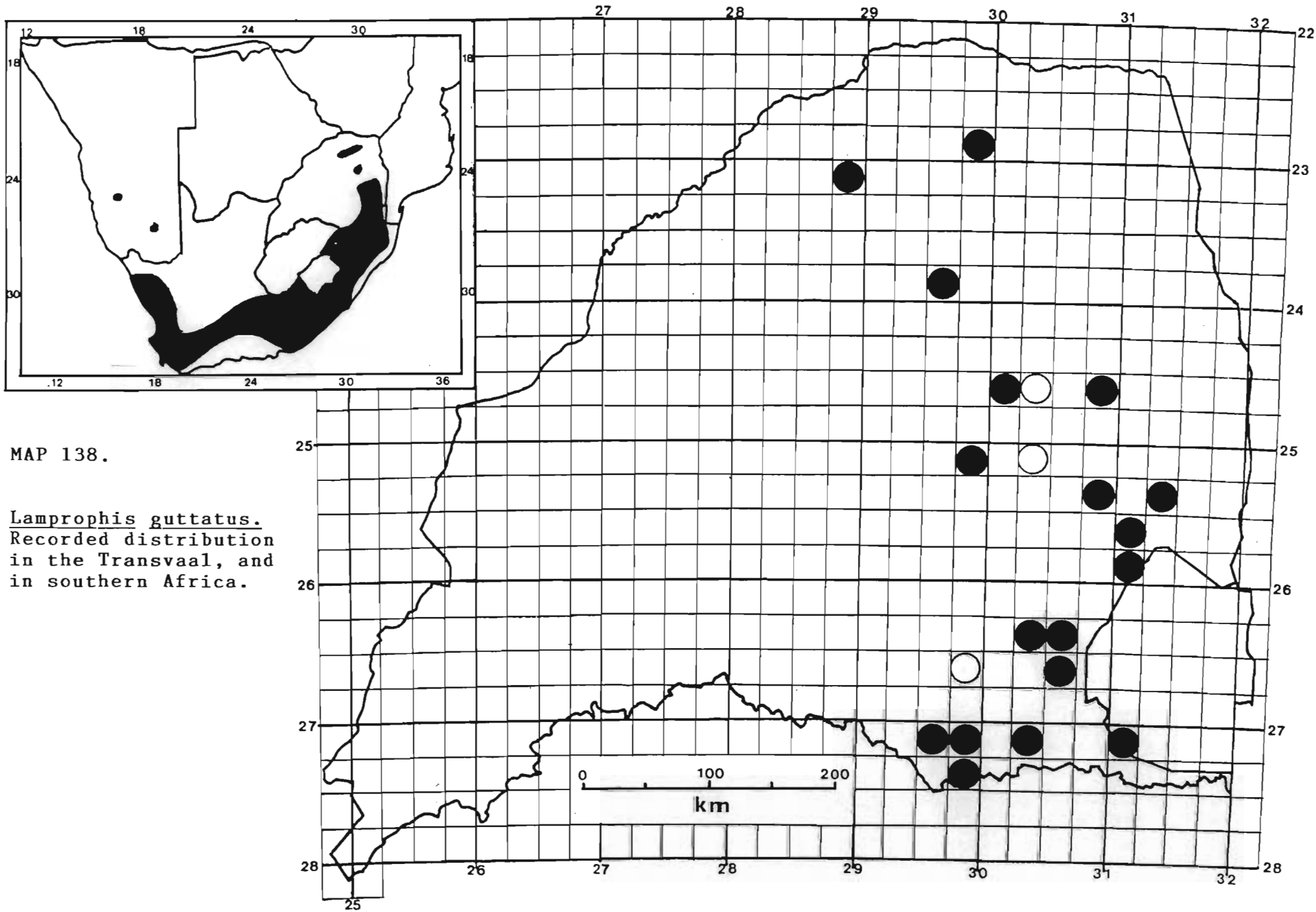
Lamprophis guttatus (A. Smith). Jacobsen & Haacke, 1980, p. 24; Welch, 1982, p. 152; Broadley, 1983, p. 86, figs 43 & 44; Jacobsen & Pienaar 1983, p. 142;

Branch 1988a, p. 59, pl. 17, 1988b, p. 12.

Diagnosis. 25 Specimens examined.

Colour: Yellowish brown to pinkish brown above with several series of reddish to dark brown blotches or spots which are arranged in either alternating or confluent pairs, and are usually more distinct in young specimens than in adults. Sides of body irregularly spotted with brown and dark spots on the head. Below yellowish white with or without irregular, pale reddish, brown spots, aggregated towards the sides. In south-eastern Transvaal the dorsal spots are large and usually black.

Lepidosis: Head flattened and distinctly broader than neck. Body moderately stout. Pupil of eye vertically elliptic. Internasals shorter than prefrontals; loreal



longer than deep; Body scales smooth, imbricate and in 21-25, (mostly 21-23) scale rows at midbody; Ventrals 181-231 and according to Broadley (1983) seldom exceeding 210 in males and usually over 210 in females; Anal scale entire; Subcaudals 44-68 usually divided, some rarely entire; Broadley (1983) records subcaudals in males usually exceeding 60 but seldom exceeding 52 in females. In the Transvaal, males range from 57-68 and females from 44-54. De Waal (1978) records males having 64-65 subcaudals and 48-51 in females.

Size: Small to medium sized snakes; Largest male SVL = 427,0 mm (N9906 - Maandagshoek 254KT), mass = 42,0 g (P10933 - Tweefontein 97HS); Largest female SVL = 615,0 mm (N10950 - Leipsig 264LR), mass = 66,5 g (N10950). Mean male SVL (300,0 mm) = 412,4 mm \pm 14,71 (1SD), n = 5, mass = 29,04 g \pm 8,48 (1SD), n = 5; Mean female SVL (300,0 mm) = 452,0 mm \pm 143,64 (1SD), n = 5, mass = 31,62 g \pm 21,95 (1SD), n = 5.

Distribution

The southern Cape Province northwards to Namaqualand and east to Natal, Swaziland, the eastern and northern Transvaal and Mozambique.

Distribution in the Transvaal, (Map 138).

10 km from Amsterdam; Barberton Townlands 369JU; Bloemkrans 121IT; Elandsfontein 36HT; Khandizwe; Leipsig 264LR; Maandagshoek 254KT; Mahamba 7HU; Maryvale 248IT; Melkboomfontein 919LS; Mooimeisjesfontein 77HS; Nelspruit; Outlook 789MS; Renosterkop; Schagen 273JT; Schuilhoek 139HS; Tonteldoos; Tweefontein 97HS; Uitkyk Nature Reserve; Dientje 453KT; Wilkenshof 252JT; Wolkberg Foothills approx. 50 km S.E. of Tzaneen; Sandkraal 99HT.

Literature Records

Ermelo; Lydenburg; Perth; Vaalhoek; Vergelegen
(Broadley, 1983).

Habitat and Ecology

An uncommon and secretive snake, it has wide distribution in rocky and mountainous areas. Usually found under rocks or in crevices between rocks at altitudes ranging from 800-2300 m a.s.l. in veld types 8, 9, 10, 19/20, 52, 54, 57, 62, 63 and 67. Mainly feeds on lizards including Afroedura sp., Pedioplanis burchellii, P. lineo-ocellata and Mabuya varia as well as rodents. Prey is seized and constricted with the coils. On occasions, small prey may be swallowed alive.

Oviparous the female lays 3-6 elongate eggs (38,0x20,0 mm) in midsummer (Branch, 1988).

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species, although uncommon can be considered to be secure as its habitat is secure. Known to occur in the southern Kruger National Park (Jacobsen & Pienaar, 1983).

Remarks

Some variation in lepidosis between the various populations appear to be present. However, sample size is small and the variations appear to be clinal.

Lamprophis fuliginosus (Boie), 1827

Lycodon fuliginosus Boie, 1827, Isis von Oken, 20, col. 551. Type locality: Java-erroneus.

Boaedon fuliginosus fuliginosus (Boie). FitzSimons 1962, p. 119, 1966, p. 45, 1970; p. 88 and 1974, p. 89; Pienaar 1966, p. 152, 1978, p. 135; De Waal 1978, p. 89; Jacobsen & Haacke, 1980, p. 25.

Lamprophis fuliginosus fuliginosus (Boie). Pienaar et al, 1983, p. 146.

Lamprophis fuliginosus (Boie). Welch, 1982, p. 151; Broadley, 1983, p. 88, fig. 45; Auerbach 1987, p. 155, pl. 14, fig. 7; Branch 1988, p. 58, pl. 28, 1988b, p. 12.

Diagnosis. 308 Specimens examined.

Colour: Normally light to yellowish or reddish brown above, but in some cases olive to dark olive brown to almost black especially in very old specimens. Two pale streaks on either side of the head, one from the tip of the snout, through the upper half of the eye and along the side of the head. The other from the eye to the angle of the mouth. On occasion the sides of the neck and head may be mottled or blotched. Both the latter features are more pronounced in young snakes and are distinguishing characters. Underparts white, creamy and rarely yellowish. Eye light to dark brown.

Lepidosis: A small to medium snake, the head is long and distinct from the neck. Pupil vertically elliptic. Internasals shorter than prefrontal; loreal longer than deep. Body covered in smooth overlapping scales ranging from 23-31 (usually 27 or 29) at midbody. Ventrals from 186-232, 192-216 in males and 205-232 in females; anal scale entire; subcaudals 37-65, 57-65 in males and 37-57 in females.

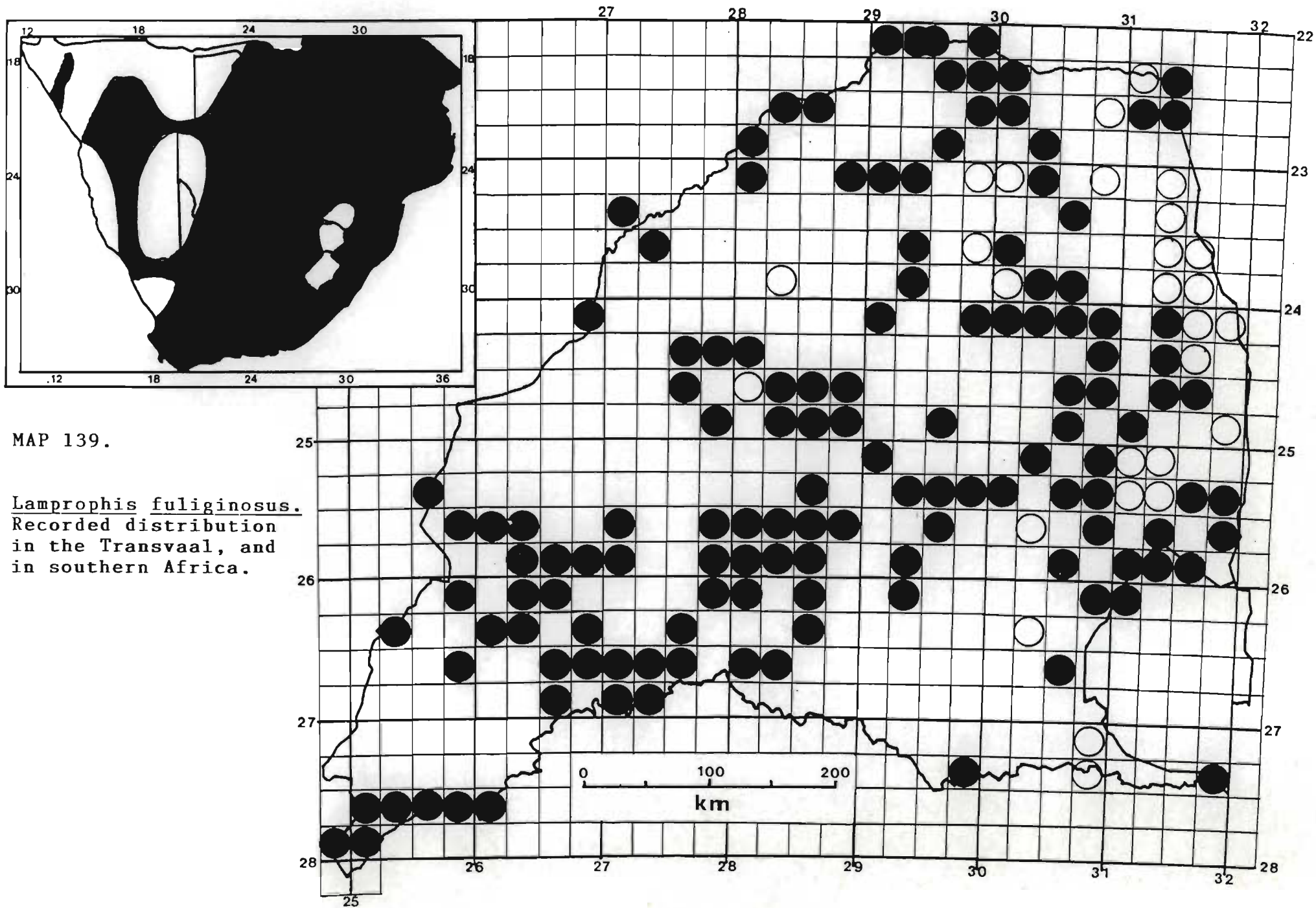
Size: Largest male SVL = 656,0 mm (P10308 - Vergelegen 728JT), mass = 108,0 g (P10308); Largest female SVL = 783,0 mm (N2390 - Witkop 287LQ), mass = 157,0 g (N2390). Mean male SVL (300,0 mm) = 440,96 mm \pm 85,74 (1SD), n = 27, mass = 40,91 g \pm 21,49 (1SD), n = 26. Length of tail into total length, 3,41-6,97 times in males and 6,45-9,09 times in females.

Distribution

Throughout southern Africa, extending northwards to southern Sudan and Ethiopia in the east and to Senegal and West Africa - south of the Sahara in the west (Broadley, 1983).

Distribution in the Transvaal, (Map 139).

16 km W. of Pretoria; 17 km W. of Pretoria; Antioch 240KT; Appeldraai 182IP; Approx. 15 km. E. Sabie; Barberton Townlands 369JU; Beacon 603, Shamiriri; Beaulay 260LR; Belvedere 184MS; Bergfontein 277KQ; Bloemheuwel 327HO; Bloemhofdam Nature Reserve; Blyde River Nature Reserve; Boekenhoutskloofdrift 286JR; Bognafuran 318LR; Boschfontein 445KQ; Botanical Lab, Pretoria; Broederstroom 481JQ; Buffelshoek 471IQ; Buffelspoort 421KR; Bushbuckridge; De Kroon, Brits; Diepgezet 388JU; Dongola; Donkerhoek 365JR; Doornfontein 345IP; Doornkop School, Witpoort; Doornkraal 420JR; Doreen 108MT; Driefontein Gold Mine; Duivelskloof 436LT; Dullstroom; Elandsfontein 366JQ; Entabeni 251MT; Freya 145MS; Garstfontein 374JR; Gestoptefontein 349IO; Greefswald 37MS; Griffin Mine, Leydsdorp; Groenfontein 429JP; Groenfontein 526JR; Groenkloof 358JR; Groote Zwart Bult 290LQ; Grootplaats 29HN; Haasfontein 28IS; Halfway House; Hartebeestfontein 437IQ; Hectorspruit 164JU; Heidelberg; Hoedspruit 346JS; Irene; Johannesburg;



MAP 139.

Lamprophis fuliginosus.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Johannesburg, Honeydew; Johannesburg, Zoo Lake;
Kaalberg; Kaapmuiden 212JU; Kaapsche Hoop 483JT;
Kafferskraal 381IR; Kalkfontein 49JS; Kalkfontein
615LS; Kalkheuvel 493JQ; Kareeboomput 286HO; Keulen
669LT; Killaloe 235MS; Klein Engeland 9KP; Klerksdorp;
Koedoespoort 325JR; Komatipoort Townlands 182JU;
Krabbefontein; Krugerskraal 583KR; Kuilfontein 324JP;
Kunana Location 4IO; Kwarriefontein 280JP; Letsitele
652LT; Lilliput 246MS; Loskopdam Nature Reserve;
Lunsklip; Lydenburg; Lyttelton 381JR; Mabalanes
Location; Magalakwin River, Potgietersrus Dist.;
Malelane 289JU; Malta 65KT; Manyeleti Game Reserve,
Hermitage; Manyeleti Game Reserve, Main Camp; Manyeleti
Game Reserve, Sarabank 323KU; Manyeleti Game Reserve,
Snuifspruit; Mapochsgronde 500JS; Marico Bosvelddam;
Mariepskop 420KT; Mdzabivlei; Melkbosch 49MR;
Modderfontein 35IR; Moilwas Location;
Mooimeisjesfontein; Mooimeisjesfontein 254KQ; Morgendal
216KS; Morgenrood 354LT; Mossiesdal, Middelburg;
Nelspruit; Nwambiya Sandveld, KNP; Nylsvley Nature
Reserve; Ohrigstaddam Nature Reserve; Pafuri; Percy
Fyfe Nature Reserve; Pietersburg; Pinedene; Pongola
Nature Reserve; Pont Drift 12MS; Potchefstroom Town and
Townlands 435IQ; Potgietersrus; Pretoria; Pretoria
District; Pretoria North; Pretoria, Arcadia; Pretoria,
Brooklyn; Pretoria, Capital Park; Pretoria, Constantia
Park; Pretoria, Fairy Glen; Pretoria, Iscor; Pretoria,
Lynnwood Drive In; Pretoria, Lynnwood Glen; Pretoria,
Meyerspark; Pretoria, Moreleta Spruit; Pretoria,
Proclamation Hill; Pretoria, Pyramid; Pretoria,
Riviera; Pretoria, Roberts Heights; Pretoria, Rosewood;
Pretoria, Silverton; Pretoria, Sunnyside; Pretoria, The
Willows; Pretoria, Union Buildings; Pretoria, Valhalla;
Pretoria, Villieria; Pretoria, Waltloo; Pretoria,
Waterkloof; Pretoria, Waterkloof Agricultural Holdings;
Pretoria, Zoological Gardens; Punda Milia; Redcliff

426IT; Rhenosterfontein 560IQ; Riekertsvraag 593KR;
Rietfontein 214JR; Rietfontein 255JT; Rietfontein
536KQ; Rietfontein, Johannesburg; Rietpoort 193IR;
Rietvallei 256JT; Rochdale 700MS; Rolvark 350LT;
Rondavelskraal 290JP; Roodekuil 496KR;
Rooijantjesfontein 89IP; Rooipoortje 453IQ; Ross 55KU;
Rosslyn, Pretoria; Rustenburg; Rustkraal 129HP; S.A.
Lombard Nature Reserve; Saselandongaspruit KNP;
Schaapplaats 664LS; Schelem 32KT; Schoongezicht 124IP;
Schuilhoek 139HS; Sekororo; Selati Ranch 143KT;
Settlers; Shiyalongubo Dam; Shlaralumi; Slagboom;
Springbokpan 611O; Springvalley 200KU; Squamans 416JU;
Steilties, Nelspruit; Sterkspruit 412KT; Sterkstroom -
Rustenburg Dist.; Steynskraal 399IR; Swartwater; Tata
7LR; Tshakuma, Venda; Tshipise 105MT; Tugela 171MR;
Udney 321LR; Vaalbank 110IP; Vaalbank 355HO;
Vaalwater; Vergelegen 728JT; Vivo; Vlakfontein;
Vlakplaats 354JR; Waterpan 292IQ; Weergevonden 173IT;
Weipe 47MS; Weltevreden 822KS; Witbank Townlands;
Witfontein 521JR; Witklipbank 202IR; Witkop 287LQ;
Witkoppies 382IQ; Witpan 20IP; Witpoortjie 245IQ;
Witrandsfontein 348IP; Worcester Mine, Barberton;
Worthing 511KR; York 188KT; Zandfontein 317JR;
Zandfontein 317JR; Zandrivier 138KR; Zusterstroom
447JR; Zuurfontein, Johannesburg.

Literature Records

Andalusia; Brondal; Comondale; Damwal;
Kingfisherspruit; Kralingen; Leydsdorp; Lothair;
Louis Trichardt; Machadodorp; Mara; Marico; Mataffin;
Middelburg; Middelfontein; Moepel; Munnik; Olifants
Camp; Piet Retief; Plaston; Pretoriuskop; Ratomba;
Renosterpoort; Satara; Schagen; Shingwidzi; Skukuza;
Springbok flats; Waterberg; Waterpoort; White River;

Wonderboom (FitzSimons, 1962). Satara camp; Luvuvhu river near picnic spot, Pafuri; Letaba quarters; Olifants camp; Matukwane drift; Punda Maria; Skukuza; Pretoriuskop quarters; Shangoni; Mashikiri windmill; Malelane camp; Kingfisherspruit; just north of Sabie river causeway; Godleni picket area; Tshokwane; Shilowa experimental plots; Sandveld plateau between Saselandonga gorge and Pafuri; eastern boundary between Saselandonga gorge and Mathlakuza pan; Mcosene near Numbi gate; between Letaba drift and Mala-Mala picket; eastern boundary between Nchindo and Tabaglovu beacons; Pumbe sandveld; between beacons R and S; between beacon 7 and Nyandu sandveld; Malonga spring; between beacons 9 and 10; new tarred road north of Luvuvhu river; Klipkoppies; near Shabaku (Pienaar et al, 1983). Wolkberg wilderness area (Snyder, 1987).

Habitat and Ecology

One of the commonest and most widespread of Transvaal snakes it occupies most available habitats being especially able to exploit man-made environments. The Brown house snake is usually found under rocks, logs, building and other debris, in holes in the ground, even under the bark of trees and in moribund termitaria, but only where sufficient shelter is available. They are found in veld types 6, 8, 9, 11, 12, 14, 15, 16, 18, 19, 20, 48, 50, 54, 57, 61, 63 and 67 at altitudes between 400-1800 m a.s.l.

Although feeding mostly on lizards and mice, snakes, birds and bats may be consumed. Prey include Cordylus vittifer, Lygosoma sundevallii, Steatomys sp., Mus. minutoides and an unidentified snake. Often found in the company of other reptiles including lizards such as Pachydactylus bibronii and Cordylus t. jonesi.

Oviparous, the species lays up to 16 eggs (mostly 6-10)

which are elongated and oval ranging in size from 25,0-50,0 mm x 12,0-24,0 mm but average at about 30,0 x 15,0 mm. Clutch size and total length of females are correlated with numbers of eggs produced increasing with increasing length, (Haagner, 1987). The eggs are laid in spring to midsummer. The young measure 194,0-250,0 mm in total length, hatch out throughout the spring and summer, neonate size specimens having been collected in September/October and March, April and May. Haagner (1987b) records that most clutches were laid during October/November, thereby indicating that the less than 250,0 mm SVL neonates collected during September/October were perhaps hatchlings from the previous season but this appears dubious. However Werb (1981) recorded mating taking place during April with nine ova being laid during mid July. These eggs were incubated at 79°F (26°C) and hatched out 59-66 days later during mid September. This indicates egg deposition occurs during the mid winter as well with the resultant early neonates found. The incubation period was recorded by Dyer (1979) as ranging from 50-88 days. Haagner (1987b) exhibited the relationship between incubation temperature and incubation period indicating the latter as ranging from 56-93 days.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread in the province and highly adaptable, the species is under no threat.

Remarks

The species appears variable in lepidosis although possibly indicating character gradients from north to

south. Thorpe & McCarthy (1978) observed that in West Africa the striped form was distinct from the unstriped form and sympatric with it. They reinstated L. lineatus (Duméril & Bibron) and referred to those specimens from the east and south as L. fuliginosus a move accepted by Broadley (1983).

Lamprophis swazicus Schaefer, 1970.

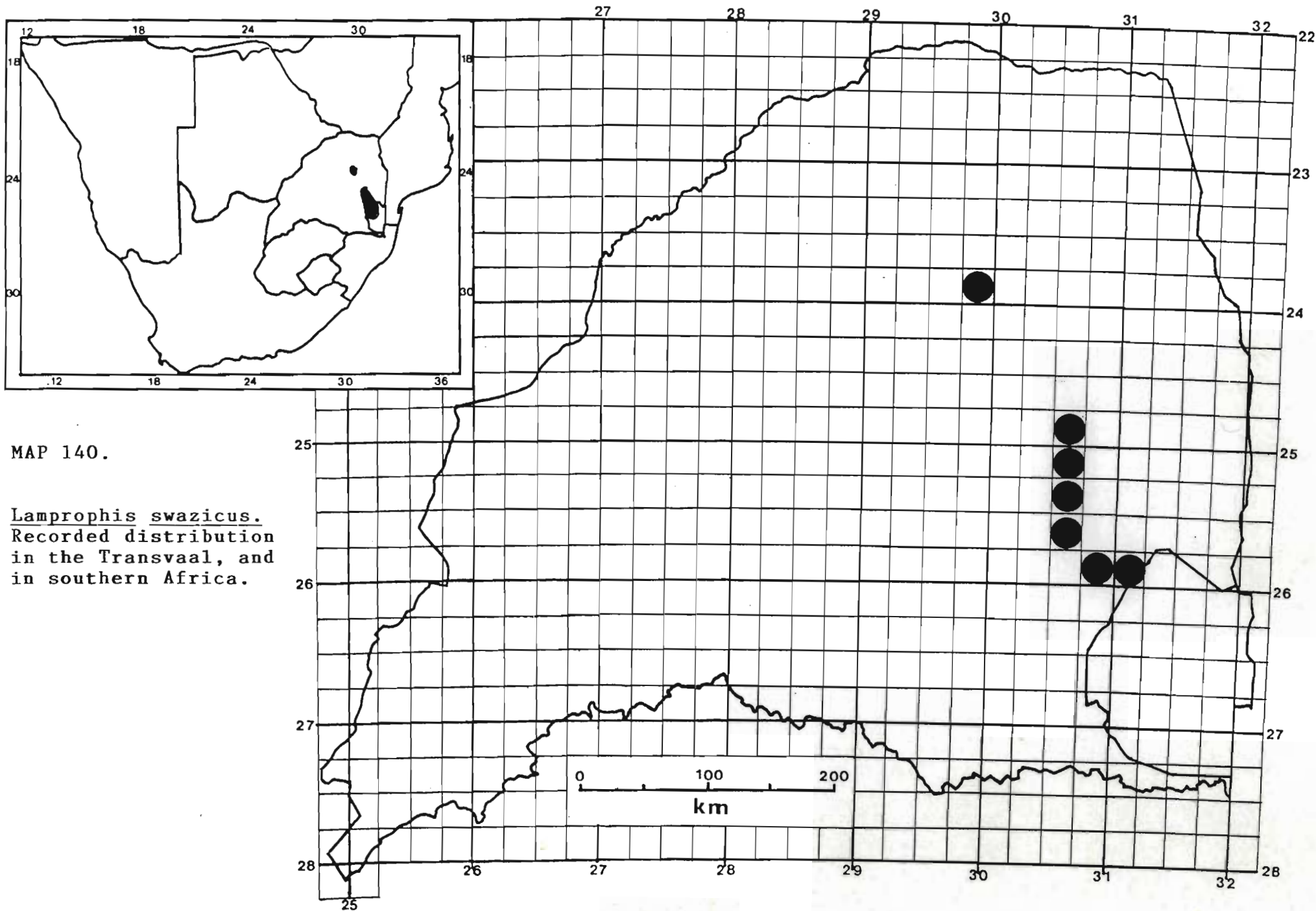
Lamprophis swazicus Schaefer, 1970, Ann. Cape Prov. Mus. 8, p. 205, fig. 1. Type locality: Forbes Reef, Swaziland. FitzSimons, 1974, p. 88; Visser 1978, p. 11, 1979, p. 31; Jacobsen & Haacke 1980, p. 23; Welch 1982, p. 152; Broadley 1983, p. 90, figs. 46 & 47; Branch 1988a, p. 60, pl. 28, 1988b, p. 12.

Diagnosis: 12 Specimens examined.

Colour: Uniform brown to red-brown above and lighter below fading to pale reddish brown to yellow-brown below.

Lepidosis: A slender-bodied snake with a broad head, very distinct from the slender neck. Pupils vertically elliptic; internasals slightly shorter than prefrontals; loreal slightly longer than deep. Scales on body smooth with single apical pits and in 17 scale rows at midbody. Ventrals 195-206; subcaudals 68-86, 68-72 in females and 71-86 in males.

Size: The largest specimen recorded (TM34836 - Havelock, Swaziland) has a SVL of 540,0 mm. Four Transvaal specimens measured 329,0, 333,0, 423,0 and 465,0 mm SVL respectively. Mean SVL = 387,50 mm \pm 67,40 (1SD), n = 4, mass = 9,64 g \pm 3,69 (1SD), n = 4. Tail long and slender, from 4,23 - 5,06 times into total length.



MAP 140.

Lamprophis swazicus.
Recorded distribution
in the Transvaal, and
in southern Africa.

Distribution

Eastern Transvaal and western Swaziland.

Distribution in the Transvaal, (Map 140).

2 km N. of Mt. Sheba; 13 km N.E. Turfloop; 26 km Sabie - Lydenburg; Dycedale 368JU; Kranskloof 554KT; Long Tom Pass; Loopfontein 298JT; Nelshoogte Plantation; Rietfontein 255JT.

Habitat and Ecology

Similar to that of the Spotted house snake, this species appears to be restricted to rocky mountains and hillsides as well as rocky outcrops. Usually found under rock on rock or in narrow crevices between rocks. Vegetation usually montane grassland and the species is found in veld types 9, 18 and 57 at altitudes of 1400-1900 m a.s.l.

Appear to feed on lizards, N5989 - Kranskloof 554KT, regurgitated a Mabuya varia.

Conservation Status (RDB 1988, rare).

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare snake occurring along the Transvaal Drakensberg. Its rarity and habitat choice make the species secure provided that large scale afforestation is avoided.

Remarks

Visser (1979) described the hemipenes of L. swazicus, showing the taxonomic importance of these organs which are very different from those of other Lamprophis

species. On this, and on account of the slender build, climbing ability and Telescopus-like appearance, Visser (1979) concludes that this species is wrongly placed in the genus Lamprophis.

Genus Lycophidion Fitzinger, 1843

Lycophidion Fitzinger, 1843, Syst. Rept. p. 27.

Type: Lycodon horstokii Schlegel = Lycodon capensis
A. Smith.

The wolf snakes are peculiar to Africa and characterised by the enlarged anterior maxillary and mandibular teeth which are proportionately very large for the size of the animal. The snakes are small and slender to moderately stout and slow moving. Head small, depressed and wider than neck. Eyes small, round with a vertically elliptical pupil. Body covered in smooth, imbricate scales in 15 to 17 rows at midbody. Tail short but longer in males; anal scale entire; subcaudals paired. Oviparous.

Mostly terrestrial but also to a limited extent rupicolous, only two species are known to occur in the Transvaal.

Key to the Transvaal species.

1. First upper labial separated from the postnasal L. variegatum
First upper labial in contact with the postnasal L. capense capense

Lycophidion capense capense (A. Smith, 1831).

Lycodon capensis A. Smith, 1831, S. Afri. Quart. Journ. 1, p. 18 and 1938, Ill. Zool. S. Afr. Rept. pl. v. Type locality: restricted to Port Elizabeth, C.P. by De Waal (1978).

Lycophidion capense capense (A. Smith). FitzSimons 1962, p. 124, 1966, p. 51, 1970, p. 89 and 1974, p. 90; Pienaar, 1966, p. 154, 1978, p. 136; Branch, 1976, p. 1;

De Waal 1978, p. 91; Jacobsen & Haacke, 1980, p. 27; Welch 1982, p. 162; Broadley, 1983, p. 92, fig. 48; Pienaar et al, 1983, p. 148, pl. 63; Auerbach 1987, p. 156, pl. 14, fig. 8; Branch, 1988a, p. 60, pl. 36, 1988b, p. 12.

Diagnosis. 196 Specimens examined.

Colour: Variable but usually black above, with white specks on the tip of each scale giving a speckled appearance. May on occasion be light brown or plumbeous to reddish brown, dark brown, purplish brown or plain black. When speckled as above, the head is vermiculated with a filigree of white silver grey in intricate patterns. The head is somewhat depressed. Underparts uniformly white to yellowish-white usually darkly infused with steel grey or brownish. On occasion an irregular dark medial stripe may be present.

Lepidosis: A small moderately stocky snake with a distinct head and short tail. Nostril pierced near posterior border of a single nasal, followed by a small postnasal. First upper labial in contact with the postnasal; Body scales smooth and overlapping each with an apical pit and in 17 rows (exceptionally 19) at midbody. Ventrals 163-200, numbering 170-180 in males and 176-194 in females (Broadley, 1983). Transvaal specimens range from 170-192 (with one exceptional 166), males range from 170-191 and females 171-192; subcaudals range from 23-42, males 34-42 and females 23-37 (mostly 25-32).

Size: Largest male SVL = 307,0 mm (J4580 - Medford Park 52JP), mass = 17,0 g (N5964 - Bloemhof Nature Reserve); Largest female SVL = 460,0 mm (9526 - Bakenkop 152HT), mass = 34,5 g (N7756 - Barberton Dorpsgebied). Mean male SVL (200,0 mm) = 255,65 mm \pm 25,66 (1SD), n = 17, mass = 8,58 g \pm 3,18 (1SD), n = 17; Mean female SVL (200,0 mm) = 297,29 mm \pm 69,13 (1SD), n = 26, mass = 13,49 g \pm 8,25

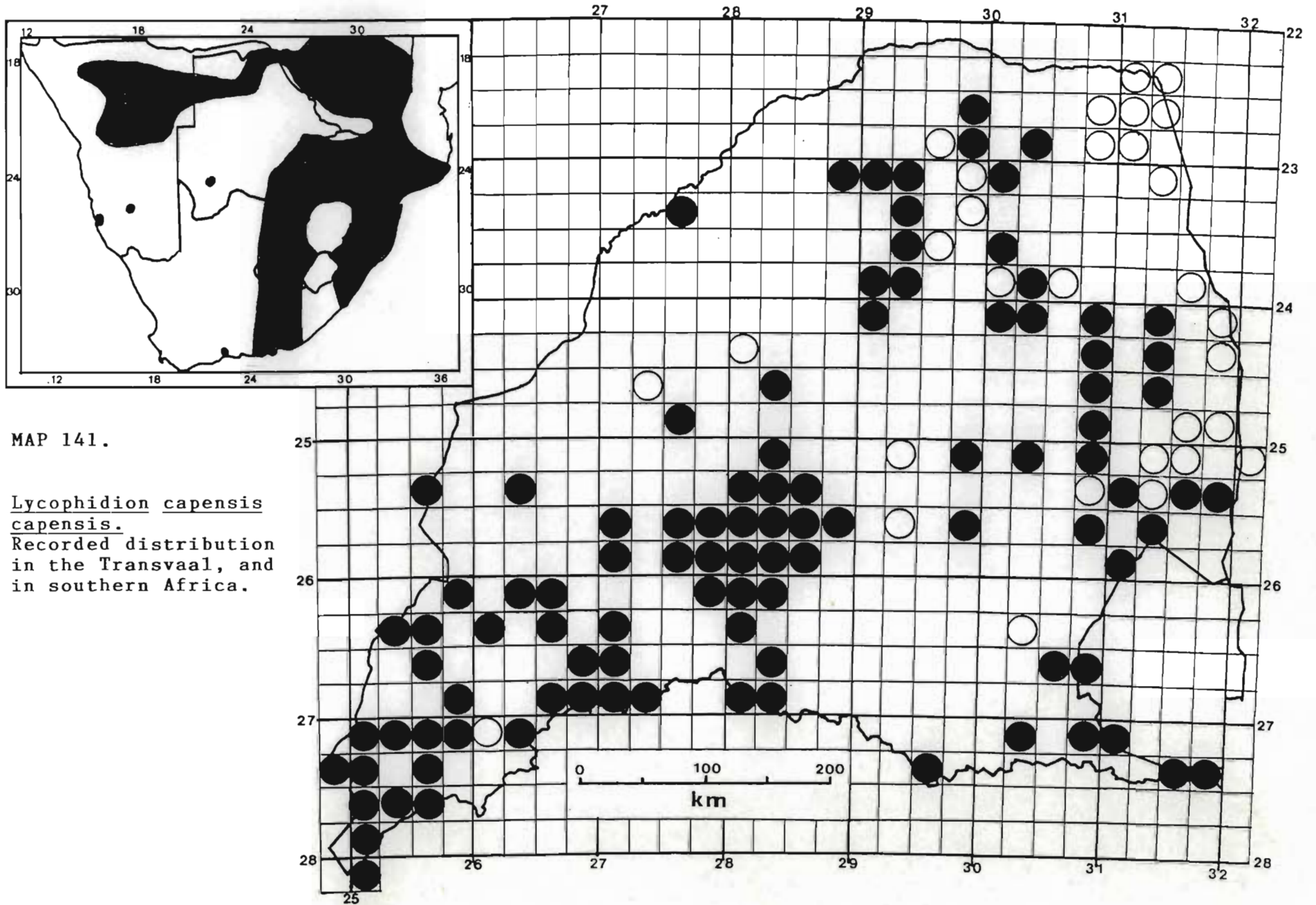
(1SD), n = 25. The ratio of tail to total length in males in 6,55 - 8,15 while that of females range from 9,32 - 12,77.

Distribution

Throughout most of southern Africa northwards to southern Zambia.

Distribution in the Transvaal, (Map 141).

7 km S. of Leeudoringstad; Amsterdam 116LS; Babelegi; Hammanskraal; Bakenkop 157HT; Bapsfontein; Barberspan Nature Reserve; Barberton Townlands 369JU; Bealey 260LR; Bergplaats 25HU; Bloemhofdam Nature Reserve; Blouberg - foot of mountain; Blyde River Nature Reserve; Boekenhoutkloof; Bokfontein 448JQ; Boschkop 482IR; Boschrand 158HO; Braksloot 734LS; Brits; Bronkhorstspruit; Buffelsfontein 443IP; Buffelshoek 471IQ; Bulskop 225IP; Christiana 325HO; Claudius Hoop 106LS; Dantzig 3LS; Deelpan 106IO; Dendron; Doornkraal 420JR; Duivelskloof 436LT; Elandsfontein 352JR; Elandsfontein 36HT; Elandsfontein 440JQ; Elim Hospital; Entabeni 251MT; Entabeni 251MT, Matiwa Lookout; Frankfort State Forest; Grassvalley, N. Tvl; Groenkloof, Rustenburg Dist.; Halfway House; Hans Hoheisen Research Station; Hartebeestpoortje 451IQ; Hectorspruit 164JU; Holworth 783MS; Houtkop 152IP; Humanskraal 346IO; Inhlovudwalile 421IT; Irene; Italie 123HO; Jakhalsdraai 102LS; Johannesburg; Johannesburg, Honeydew; Johannesburg, The Hill; Kaapsche Hoop 483JT; Kalkgat 554LS; Kareeboomput 286HO; Kareefontein 340HO; Kleinfontein 568JR; Klerksdorp; Klerkskraal 65IQ; Klipdraai 3KT; Klipriviersberg 106IR; Krabbefontein; Kunana Location 4IO; Leeuwfontein 185HO; Leeuwklip



363JS; Leipzig Mission; Letsitele 652LT; Lilydale
324JU; Lydenburg; Makokskraal 203IP; Manyeleti Game
Reserve, Hermitage; Marico Bosvelddam; Medfordt Park
52JP; Meidingen 398LT; Merriekloof 420IT; Moilwas
Location; Mooinooi area; Mopani 527MS; Moriah 238KT;
Muldersdrift; Murrayfield 343JR; Nylstroom;
Olievenbosch 506KQ; Olifantsfontein; Onrust 332HO;
Paardefontein 35HO; Pankoppen 36JR; Pietersburg;
Pilgrim's Rest; Pinedene; Pongola Nature Reserve;
Potchefstroom Town and Townlands 435IQ; Potgietersrus;
Pretoria; Pretoria District; Pretoria North; Pretoria,
Capital Park; Pretoria, East Lynne; Pretoria, Hornsnek;
Pretoria, Iscor; Pretoria, Meintjieskop; Pretoria,
Muckleneuk; Pretoria, Rietfontein; Pretoria,
Rietondale; Pretoria, Riviera; Pretoria, Sinoville;
Pretoria, Skinners Court; Pretoria, Villieria;
Pretoria, Waterkloof Ridge; Pretoria, Wonderboom Suid;
Prospect 315HO; Rietfontein 214JR; Rietfontein 274JT;
Rooijantjesfontein 89IP; Rooipoortje 453IQ; Rooiwal
Power Station; Rosslyn, Pretoria; Rustenburg District;
Rustenburg Nature Reserve; S.A. Lombard Nature Reserve;
Sabie; Schoongezicht 124IP; Schuilhoek 139HS;
Schweizer Reinecke Townlands 62HO; Sekororo;
Shlaralumi; Springbokpan 61IO; Steynsdrift 145JS;
Strydfontein 477IR; Suikerbosrand Nature Reserve;
Tenbosch 162JU; Transport 145KT; Tweefontein;
Tweefontein 523JQ; Uitvalskop 14HN; Vaalboschfontein
188HO; Vlakfontein 457JR; Warmbaths; Waterberg;
Waterhoutboom 567KT; Weltevreden 176HO; White River
64JU; Witpan 20IP; Zandfontein 160LQ; Zoutpan 104JR;
Zusterstroom 447JR; Zwartkloof 60HU.

Literature Records

Andalusia; Bon Accord; Botschabelo; Dotholi;
Groblersdal; Groot Spelonken; Gruisbank; Honeydew;

Kaapmuiden; Komatipoort; Leydsdorp; Lothair; Louis Trichardt; Mokeetsi; Nelspruit; Pienaars River; Pretoriuskop; Punda Milia; Rust der Winter; Shingwidzi; Skukuza; Thabazimbi; Vaalwater (FitzSimons, 1962). Hammanskraal; Krugersdorp; Leeudoringstad; Soutpansberg; Waterpoort, (Branch, 1976). 25 km SW of Bandelierkop on Pietersburg/Louis Trichardt road (Lambiris, 1988). Shingwedzi quarters; Shabin kop; Tshokwane; Gubyane potholes, Matukwane ridge, Punda Maria; Letaba camp; near Numbi gate; Babalala windmill; Sabie-poort; Crocodile bridge quarters; near Stolznek; Pretoriuskop section; Shidvivane turn-off on road to Mahembane; near Nwanedzi en route to border gate; Pumbe sandveld; Red Rocks; Malonga spring; Crooks corner; Malelane (Pienaar et al, 1983). Wolkberg wilderness area (Snyders, 1987). Badplaas (NMZB).

Habitat and Ecology

A slow moving, nocturnal snake found inhabiting a variety of habitat types being most common in the south-western Transvaal frequently in association with broken country where they are commonly found under rocks, logs or in moribund termitaria, but in fact anywhere where cover is sufficient. An individual was found inside a dolomitic cave approximately 16 m below the surface among rocky scree. Usually solitary, two individuals may be found together or nearby each other during the summer months. Occasionally found in the company of other snakes in termitaria such as J6184 which was together with a Psammophis leightoni trinasalis Werner. Found in veld types 6, 8, 9, 10, 11, 13, 14, 16, 18, 19, 20, 48, 50, 54, 57, 61, 62, 63, 64 and 67 at altitudes between 200 - 1800 m a.s.l. Branch (1976b), discussed at length the

range of diet of L. capense, which consists mostly of skinks and gerrhosaurids. De Waal (1978) concurs and also lists geckos among the prey. The long teeth of wolf snakes no doubt assist in holding on to prey until the coils come into effect.

Oviparous, the species normally lays 6-8 eggs measuring 20-24 x 8-10 mm in early summer. Auerbach (1978) records 4-8 ova measuring 22x8 mm. A clutch of 7 eggs laid in midsummer measured 19,7-22,3 x 9,3 - 10,5 mm. Hatchlings measure approximately 65,0 mm total length. Dyer (1979) recorded a clutch of four eggs measuring on average 24,0 x 12,0 mm which incubated over a period of 79 days. Two hatchlings measuring 63,0 and 68,0 mm total length.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread in the province it occurs in several nature reserves and in the Kruger National Park. The species is considered secure.

Remarks

Branch (1976b) discussed the range of variation in lepidosis, showing a clinal decrease in numbers of ventrals from the Cape Province to Natal and the northern Transvaal. There does not appear to be any difference in ventral counts between males and females in the Transvaal, and only subcaudal counts are useful in this respect, as well as the ratio of tail length to total length. Branch (op. cit.) describes in detail the bifurcated hemipenis of L. c. capense in a comparison with L. variegatum Broadley.

Lycophidion variegatum Broadley, 1969

Lycophidion capense capense, FitzSimons 1962, p. 124 (part).

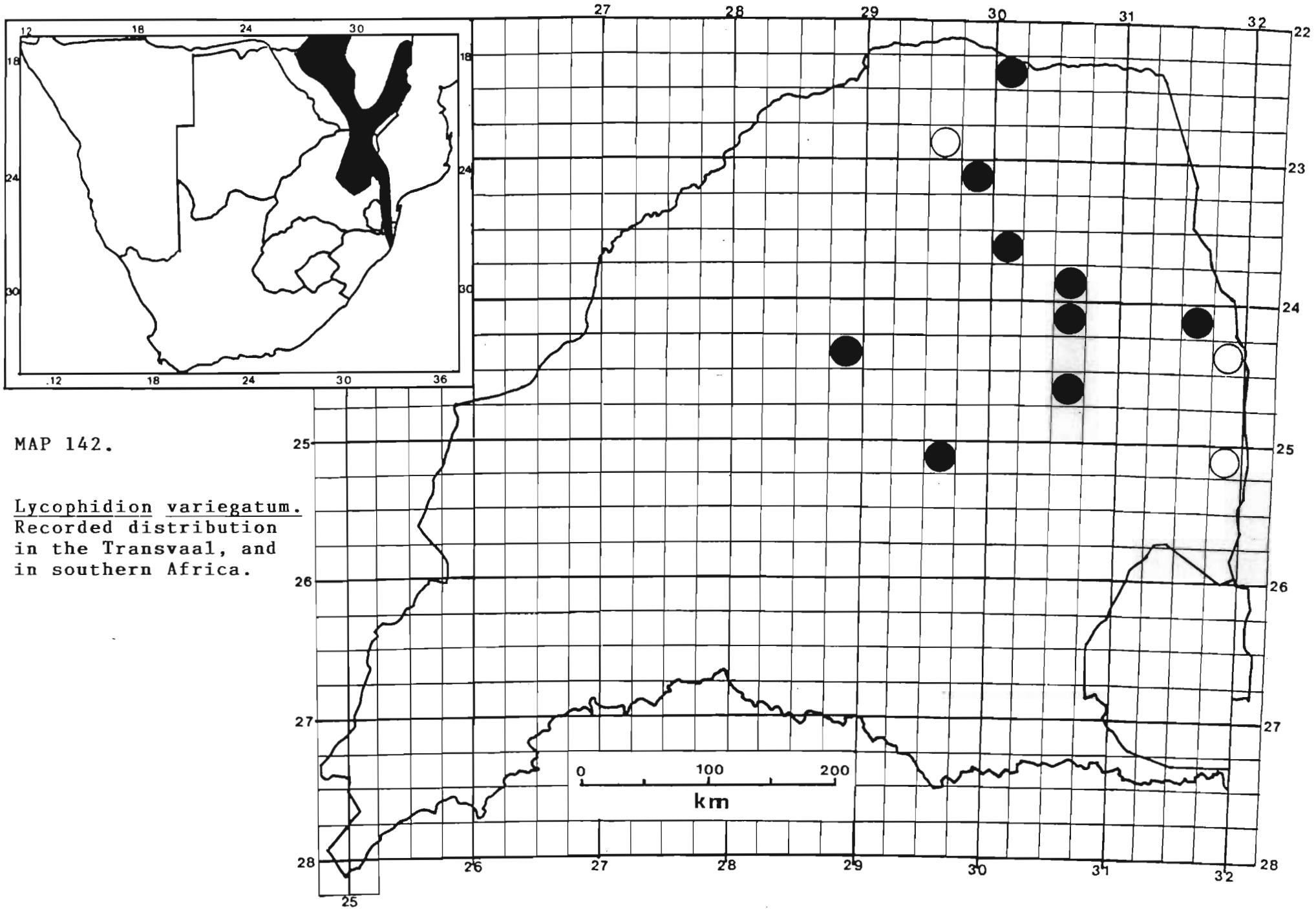
Lycophidion variegatum Broadley, 1969, Arnoldia Rhod. 4(27), p. 1. Type locality: Chitora river; Mutare dist. Zimbabwe. FitzSimons 1974, p. 91; Branch, 1976b, p. 1; Jacobsen & Haacke, 1980, p. 27; Welch, 1982, p. 163; Broadley, 1983, p. 96, figs. 50 & 51; Pienaar et al, 1983, p. 149, pl. 64; Auerbach 1987, p. 157; Branch 1988a, p. 60, pl. 29, 1988b, p. 12.

Diagnosis. 11 Specimens examined.

Colour: Black above with varied amount of white stippling on the scales. Stippling heaviest laterally. Margin of dorsal scales white. Chin and lower-lips stippled brown and white and the throat largely white. The ventrals blackish brown with lateral edges speckled white. End of snout may or may not be pink.

Lepidosis: Similar in appearance to L. c. capense, small and moderately stocky with a distinct, depressed head and short tail. Nostril pierced near posterior border of a single nasal, which is followed by a smaller postnasal. 1st upper labial separated from the postnasal; Body scales smooth, imbricate, with single apical pits and in 17 rows at midbody. Ventrals range from 185-202 with males ranging from 185-191 and females from 192-202; subcaudals range from 30-39, males 37-39 and females 30-33.

Size: Broadley (1983) records the largest male SVL = 320,0 mm (UM10666 - Chitora River, Zimbabwe - Holotype) and the largest female SVL = 389,0 mm (TM 4457 - Ohrigstad, E. Tv1). Mean male SVL = 247,5 mm \pm 92,63 (1SD), n = 2, mass = 6,7 g \pm 5,37 (1SD), n = 2; Mean female SVL = 311,0 mm \pm 32,53 (1SD), n = 2, mass = 9,47 g \pm 2,86 (1SD), n = 2.



MAP 142.

Lycophidion variegatum.
Recorded distribution
in the Transvaal, and
in southern Africa.

Distribution

Zimbabwe, northern and eastern Transvaal to KwaZulu (Broadley, 1983).

Distribution in the Transvaal, (Map 142).

Diepkloof 44JS; Doorndraai 282KR; Dover 44MT; Leydsdorp Dorpsgronde 779LT; Louis Trichardt; Mbandywe Dam; Messina 4MT; Mokeetsi 376LT; Ohrigstad 443KT, 8 km on road to Lydenburg; Selati Ranch 143KT.

Literature Records

Lower Sabie; Waterpoort, (Branch, 1976b). Sandveld north of Pumbe Picket, (Pienaar et al, 1983).

Habitat and Ecology

Usually found around rocky outcrops, under rocks on soil or on rock, occasionally under dead aloes or logs. Occur in veld types 11, 14 and 18, at altitudes ranging from 300-1200 m a.s.l. Slow moving, solitary and nocturnal the species is rarely found and remains secretive. It feeds on the same prey as that of capense but may be more rupicolous than the latter thereby avoiding competition. Skinks such as Mabuya varia and M. striata appear to form the main diet. Oviparous, 2-3 ova were recorded by Broadley (1983).

Conservation Status (RDB 1988, peripheral).

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare peripheral species which may occur in several provincial nature reserves and in the Kruger National Park. Additional surveys are needed to establish its status.

Remarks

Branch (1976b) discussed the variation within the species in detail, including a description of the hemipenes. The three lobed hemipenis is unique and highly diagnostic in males.

Genus Mehelya Csiki, 1903

Mehelya Csiki, 1903, Rovartani Lapok 10, p. 198 and 1904, Zool. Anz. 28, p. 266. Type: Heterolepis capensis A. Smith.

Closely related to the wolfsnakes, these snakes also exhibit enlarged teeth on the anterior maxillary and mandibular bones. However file snakes are characterised by the pronounced triangular body with a broad flat head which is very distinct from the neck. The eyes are small with vertical pupils. Nostrils enlarged. The body scales are strongly keeled and juxtaposed to subimbricate with bare interstitial skin, in 15 to 19 rows at midbody. Ventrals more or less strongly keeled ventrolaterally; anal scale entire; the short tail has two rows of subcaudals.

Oviparous. Two species occur in the Transvaal.

Key to the Transvaal species.

Ventrals 193-224; subcaudals less than 44-58;
a pale vertebral stripe present M. capensis capensis
Ventrals 165-184; subcaudals 51-77;
uniform black above M. nyassae

Mehelya capensis capensis (A. Smith, 1847)

Heterolepis capensis A. Smith, 1847, Ill. Zool. S. Afr. Rept. pl. iv. Type locality: Eastern districts of Cape Colony.

Mehelya capensis capensis (A. Smith). FitzSimons 1962, p. 130, 1966, p. 54, 1970, p. 91, 1974, p. 94; Pienaar 1966, p. 156, 1978, p. 138; Jacobsen & Haacke 1980, p. 28; Haacke, 1981, p. 217. Welch 1982, p. 164;

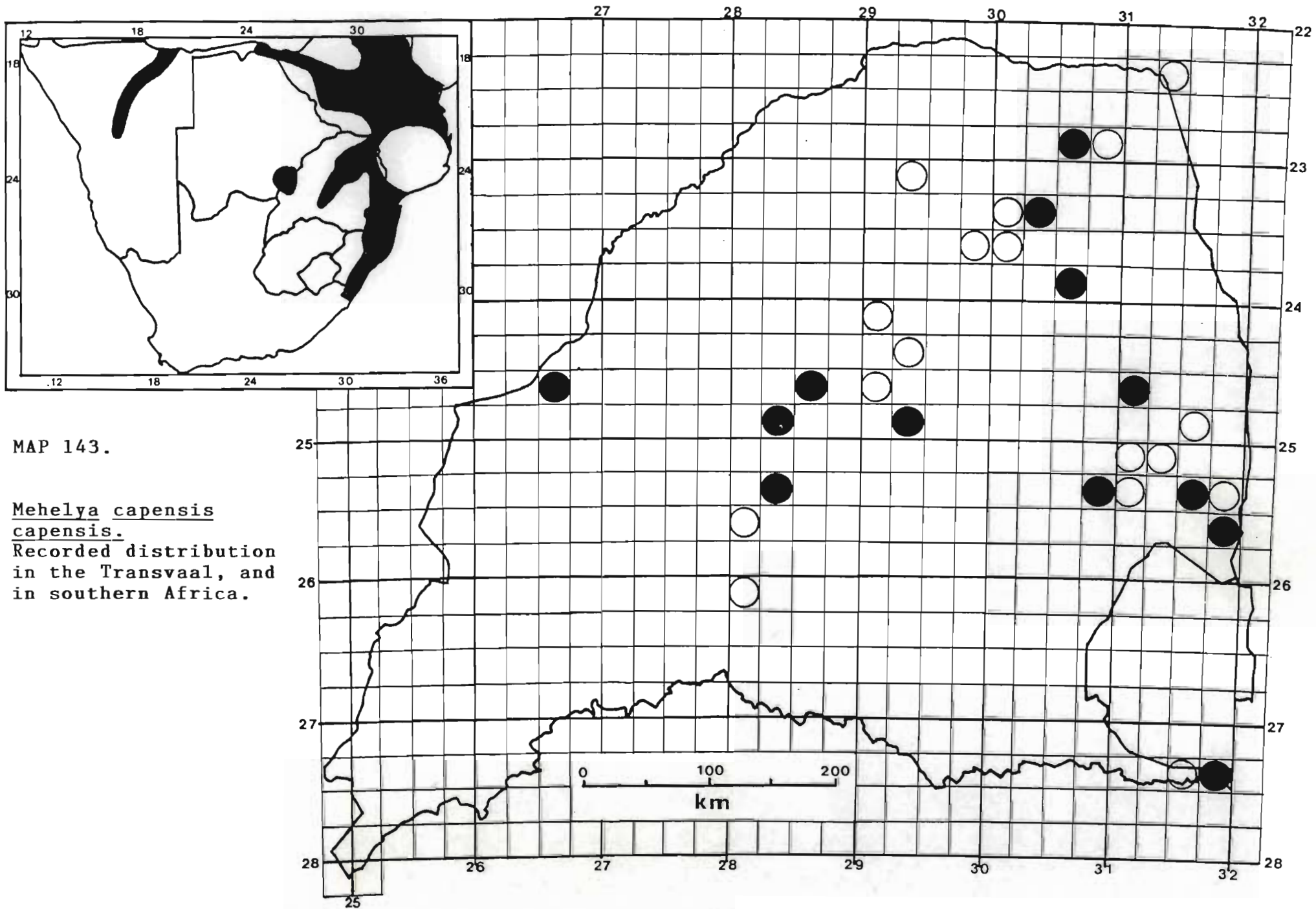
Broadley, 1983, p. 100, fig. 55, pl. 17; Pienaar et al, 1983, p. 151; Auerbach 1987, p. 158, pl. 15, fig. 1; Branch 1988a, p. 62, pl. 25, 1988b, p. 12.

Diagnosis. 27 Specimens examined.

Colour: Grey to slate or greyish brown, dark olive or violet to purplish brown above, with a pale white to yellowish vertebral stripe from the back of the head to the tip of the tail. In adults particularly, the exposed interstitial skin is pale with a pinkish, bluish pink or mauve hue. Underparts ivory white to yellowish. Head broad and blunt and rough looking. Body triangular, with widely spaced scales and a vertebral row of scales with a double longitudinal ridge emphasized by the white stripe described above.

Lepidosis: A medium to large snake with a long depressed head and characteristic triangular body. Body scales keeled, to bicarinate along the vertebrae but juxtaposed and not overlapping and in 15 (rarely 17) rows at midbody. Ventrals 193-224 and according to Broadley (1983) not exceeding 209 in males or less than 206 in females; anal scale entire; subcaudals 38-52, males 46-52 and females 38-46.

Size: Largest SVL = 1245,0 mm (N3261 - Grootvlei 160KP), mass = 600,0 g (N3261). Broadley (1983) records that specimens may attain 1650,0 mm in total length. Ratio of tail to total length in three specimens range from 7,84-8,54).



Distribution

From Tanzania, south to Natal almost to the Ciskei and in the west to northern South West Africa/Namibia.

Distribution in the Transvaal, (Map 143).

Bellevue 74LR; Brondal, Nelspruit; Gollel Border Post; Greenvalley 213KU; Grootvlei 160KP; Hammanskraal area; Hectorspruit 164JU; Helena 400JU; Klaserie; Kromdraai 115JR; Lebombo Siding 184JU; Leydsdorp Dorpsgronde 779LT; Makonde; Marble Hall 29JS; Modderfontein; Nylsvley Nature Reserve; Plot 22 Welgevonden, Hammanskraal; Pongola Nature Reserve; Pretoria District; Rolle 235KU; Warmbaths.

Literature Records

Crocodile Bridge; Damwal; Goudplaas; Karino; Komatipoort; Mara; Modderfontein; Munnik; Nelspruit; Numbi; Pongola; Potgietersrus; Pretoria, Mayville; Roedtan; Skukuza; Verlief (FitzSimons 1962). Numbi gate; western boundary; Bubube spruit; Pretoriuskop camp; farm Mala-Mala adjoining western boundary; main road between Shaben hill and Numbi gate; Pafuri; Hazyview (extra-limital) (Pienaar et al, 1983). 10 km W. of Numbi; Nylsvley Nature Reserve; Welgevonden (Haacke, 1981).

Habitat and Ecology

A very rare species occurring over most of the northern and eastern Transvaal. Nocturnal and solitary, most specimens are collected around human dwellings or dead on road (DOR). An occasional specimen may be found under a

large rock, log or other debris. Found in veld types 10, 11, 14 and 18 at altitudes ranging from 250-1100 m a.s.l. The species is very docile and never bites. Its only defences appear the voiding of faeces and the production of a pungent viscous fluid from glands in the cloaca. The species feeds readily on other snakes including poisonous species. Pienaar (1978) reports the unusual case of a very large 1,58 m specimen which contained a 1,07 m olive grass snake (Psammophis phillipsii), an 82,5 cm python (Python sebae), a 53,1 cm brown water snake Lycodonomorphus rufulus and a 48,1 cm Mozambique spitting cobra (Naja mossambica). It also consumes lizards, frogs, toads and occasionally small mammals, individual preferences varying considerably.

Oviparous, the species lays from 5-8 eggs, measuring 55,0 x 20,0 mm, (Broadley, 1983). Krzystyniak & Pewtress (1983) recorded a Natal female from Empangeni laying 13 ova none of which were measured. The same female subsequently laid 7 eggs also infertile. After being mated with the female laid another clutch of 10 eggs which measured 47,0 - 52,0 x 28,0 - 31,0 mm and a mass of 26,0 - 28,0 g. Egg-laying in all instances took place during midsummer. The last clutch was incubated at between 20°C - 23°C, 7 eggs hatching after 99 days. Neonates measured 390,0 - 420,0 mm in total length with a mass of 16,2 - 17,9 g. One hatchling only had a mass of 13,0 g and therefore was thinner than the others.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Rare and vulnerable, the species is in need of greater conservation effort. Its habit of appearing around dwellings in search of food and shelter has been responsible for many being killed.

Some are also killed crossing roads. Little detail of population size is known. On the Nylsvley Nature Reserve only 4 specimens were captured and two were killed on adjacent farms, indicating a very low density in this area.

Remarks

Haacke (1981) reviewed the genus Mehelya, incorporating new distribution records from various sources.

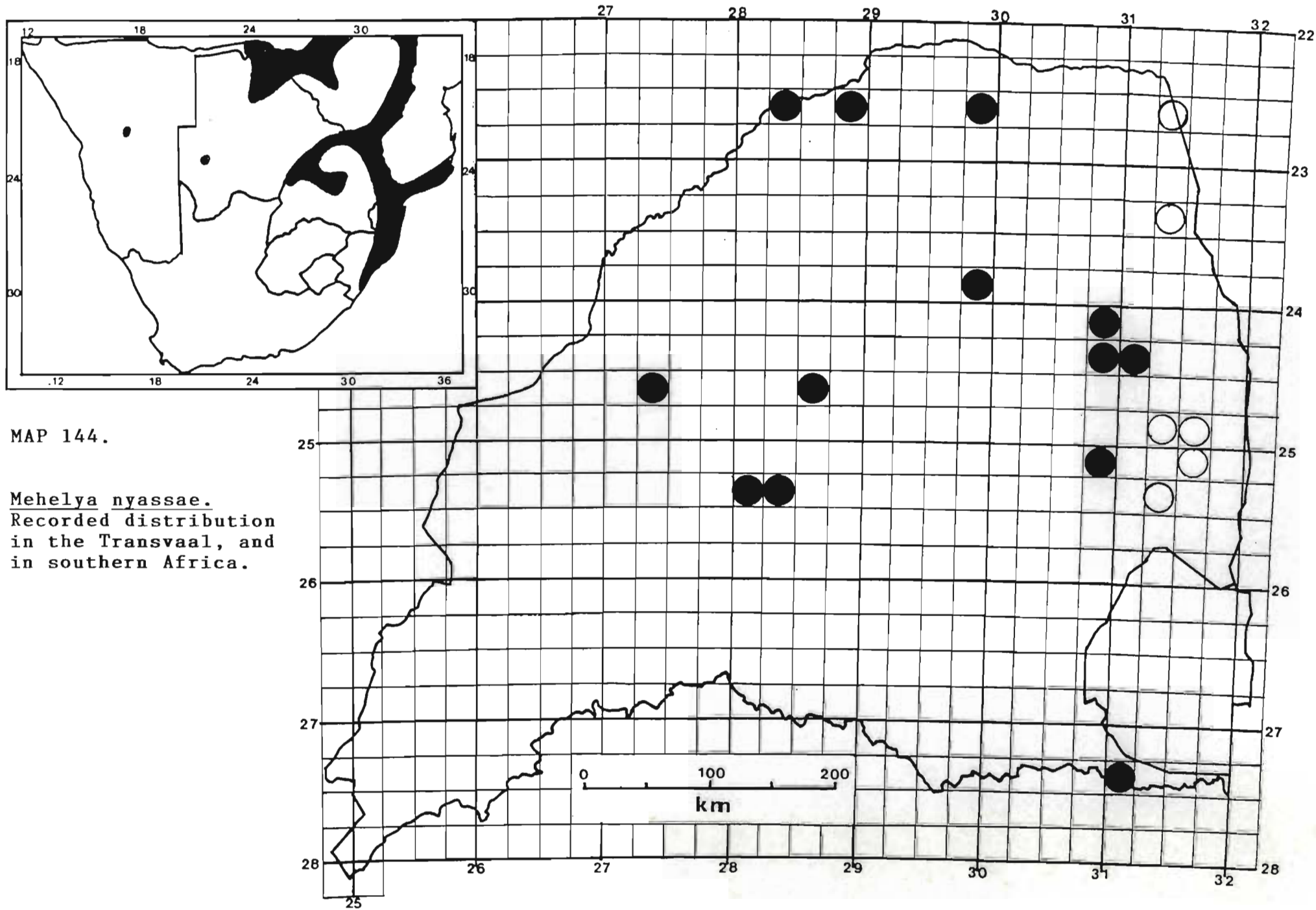
Mehelya nyassae (Günther, 1888)

Simocephalus nyassae Günther, 1888, Ann. Mag. Nat. Hist. (6), 1, p. 328. Type locality: Lake Nyasa. FitzSimons, 1962, p. 132, 1966, p. 54, 1970/74, p. 94; Pienaar, 1966, p. 158, 1978, p. 140; Jacobsen & Haacke, 1980, p. 29; Haacke 1981, p. 222, pl. 3; Welch, 1982, p. 164; Broadley, 1983, p. 102, fig. 56; Pienaar et al, 1983, p. 153, pl. 66; Auerbach 1987, p. 158; Branch, 1988a, p. 62, pl. 36, 1988b, p. 12.

Diagnosis: 13 Specimens examined.

Colour: Uniformly slate or dark brown to blackish often with a purplish tinge. Skin between scales, mauve pink. Below brownish olive to blackish brown with ventral scales paler-edged or yellowish white to olive yellow with a few transverse, dusky markings on the belly while the underside of the tail is dark. Occasional specimens are creamy white below or may be patchy with dark blotches. Body triangular with rough scaling similar to previous species.

Lepidosis: A small triangular snake with a moderately distinct flattened head and slender tail. Body scales keeled, the vertebral row enlarged with two well defined



MAP 144.

Mehelya nyassae.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

keels. Other scales on the back juxtaposed and with a single median keel and two very short secondary keels situated one on either side of the median keel near the apex to each scale; scales at midbody 15. Ventrals 170-183; anal scale entire; subcaudals 55-64.

Size: Small, males reaching a 437,0 mm SVL (TM26193 - Umizinto 36MR) and females 520,0 mm SVL (UM31912 - Chizarira Nat. Park), Broadley (1983). The masses of two specimens 193,0 mm and 184,0 mm SVL from the Transvaal were 2,25 g and 1,90 g respectively. Broadley (1983) records length of tail into total length 3,6 to 5,4 times.

Distribution

From Kenya and Burundi south to the northern and eastern Transvaal and Natal. Also found in Botswana and central South West Africa/Namibia.

Distribution in the Transvala, (Map 144).

Berlin 209KT; Canterbury 254MR; Cavan 508MS; Hammanskraal; Lekkergoed 160KT; Nylsvley Nature Reserve; Plot 105 Rietgat 105JR; Schoongezicht 66KU; Thabazimbi; Umzinto 36MR; Warmbad 18HU; Woodbush; Zanzibar Border Post.

Literature Records

Skukuza, (FitzSimons, 1962). Malelane; Mahlaguza pan; Mooiplaas Experimental Plots; S. end Nwatimhire road; ± 15 km E. of Sabie; (Haacke, 1981).

Habitat and Ecology

An uncommon species, it is mostly found in bushveld areas including veld types 8, 14, 15, 18 and 63 at altitudes

between 200-1500 m a.s.l. It inhabits holes, moribund termitaria and under rocks on soil. Solitary, nocturnal and relatively slow moving the species feeds on lizards especially skinks and lacertids but also frogs on occasions.

These snakes have no defence and resort to hiding their heads under the coils similar to M. capensis. They also secrete quantities of a pungent grey viscous fluid from cloacal glands.

Oviparous, six eggs have been recorded in Zambia (Wilson, 1965) and neonates measure from 200,0 - 216,0 mm (Broadley, 1983).

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread in the bushveld it occurs on several provincial nature reserves and the Kruger National Park. Most of its habitat is used for cattle ranching purposes. Its status is uncommon but secure.

Remarks

Six of the thirteen specimens examined are white below. See also plate 3 in Haacke (1981) and plate 36 in Branch (1988a).

Genus Duberria Fitzinger, 1826

Duberria Fitzinger, part 1826, Neue Class. Rept. pp. 29 & 55. Type: Coluber arctiventris Daudin = Coluber Duberria Merrem = Coluber lutrix Linnaeus.

Small, robust snakes with a small head hardly distinct from the neck. Eyes small and with a rounded pupil. Body cylindrical and short, covered in smooth imbricate scales which number 15 (rarely 16) rows at midbody. Ventrals without keels; anal scale entire; Tail short but tapered with two rows of subcaudals. Viviparous. Only one species occurs in the Transvaal mostly along the moister escarpment zone but also in suitable habitat on the highveld.

Duberria lutrix lutrix (Linnaeus, 1758)

Coluber lutrix Linnaeus, 1758, Sys. Nat., ed. 10, 1, p. 216. Type locality: "In Indiis" = South Africa, and 1766, ed. 12 I, p. 375.

Duberria lutrix lutrix (Linnaeus). FitzSimons, 1962, p. 167, 1966, p. 51, 1970/74, p. 107/110; De Waal, 1978, p. 97; Jacobsen & Haacke, 1980, p. 38; Welch 1982, p. 174; Broadley 1983, p. 104, fig. 58, pl. 19; Branch 1988a, p. 63, pl. 28, 1988b, p. 12.

Diagnosis. 116 Specimens examined.

Colour: Colour variable above from brick red, reddish brown, coppery or pale brown to olive or olive brown, with or without a vertebral series of small black specks, spots or an interrupted or continuous line along middle of back. The sides of the body may be as above, but more usually grey to plumbeous and sharply demarcated from the upper surface by a line of minute black specks. Below, white to cream or yellowish with edges of ventrals and subcaudals bluish to steel grey and flecked or spotted with black.

Lepidosis: A small snake, with a stocky body and head almost merging into the neck. Pupil of eye round, postoculars mostly 2, rarely 1. Body scales smooth, overlapping and in 15 rows at midbody; Ventrals range from 116 to 140; Subcaudals 26-48, usually 37-48 in males and 26-38 in females.

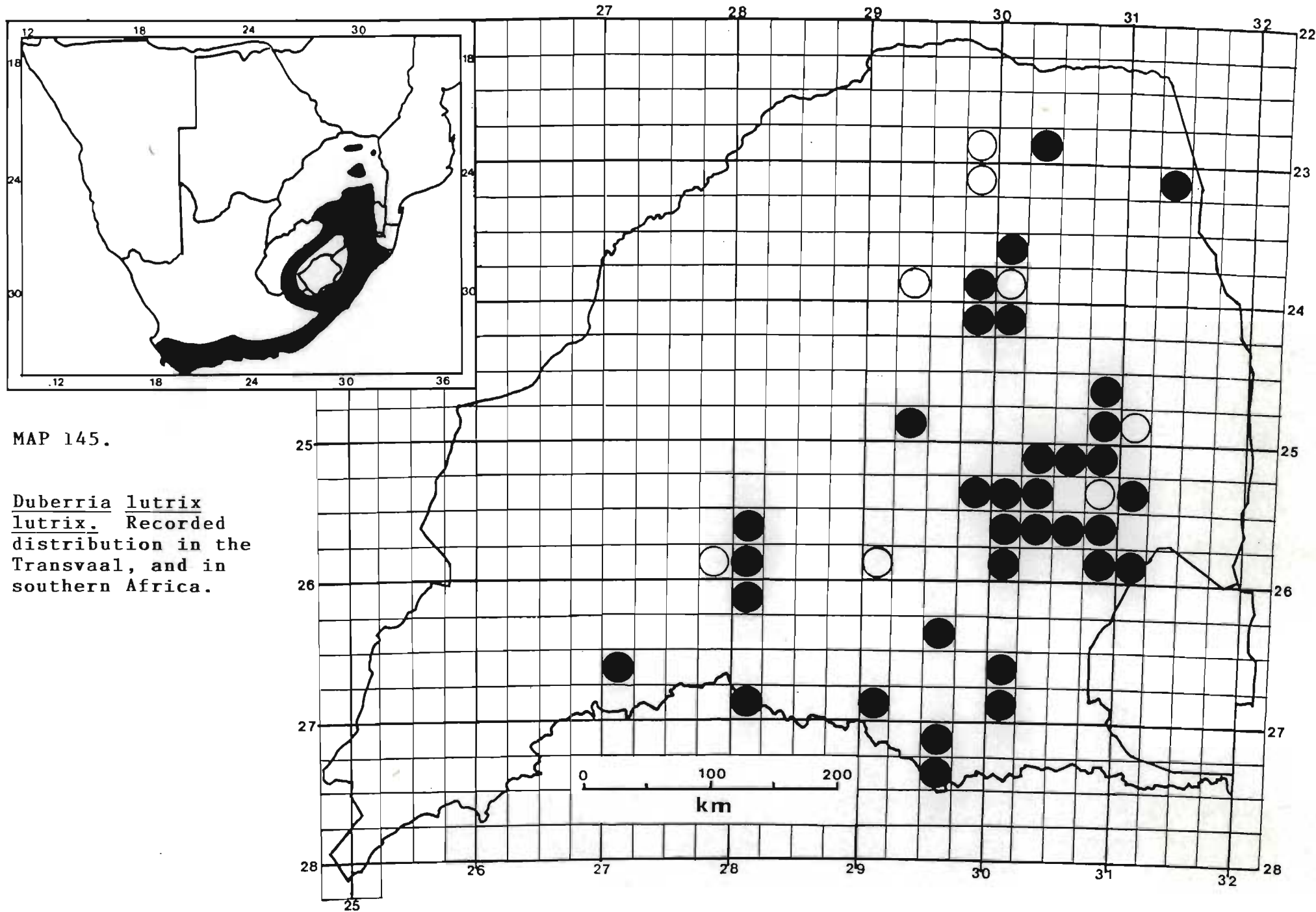
Size: Largest male SVL = 355,0 mm (TM 12578 - Mariepskop). Largest female SVL = 360,0 mm (NM2 1980 - Johannesburg). (Broadley, 1983). Greatest male mass = 15,0 g (N7979 - Boshoff Annex 208KS) and female mass = 34,0 g (N7724 - Dycedale 368JU). Mean male SVL (150,0 mm) = 201,50 mm \pm 30,51 (1SD), n = 6, mass = 6,62 g \pm 5,70 (1SD), n = 4; Mean female SVL = 243,5 mm \pm 67,19 (1SD), n = 8, mass = 14,07 g \pm 9,83 (1SD), n = 9. Tail short and tapered, its length being contained in total length 4,79 - 5,06 times in males and 6,11 to 8,69 times in females.

Distribution

From the Cape Province northwards along the east to Natal, eastern Orange Free State, southern and eastern Transvaal.

Distribution in the Transvaal (Map 145).

1 km N. of Diepgezetmyn; Aloe Fjord Holiday Resort Vaaldam; Approx. 15 km E. Sabie; Belfast area; Blyde River Nature Reserve; Boshoff Annex 203KS; Castle Rock Car Park - Sabie; Clearwaters, Haenertsburg; De Nyl 28 km Dullstroom - Tonteldoos; Diepgelegen 945LS; Doornkop School, Witpoort; Dycedale 368JU; Enkeldoorns 35JT; Entabeni 251MT; Goedeverwachting 334JT; Graskop 564KT; Haenertsburg; Irene; Johannesburg; Kaapsche Hoop 483JT; Kalkoenkrans 366IT; Long Tom Pass; Loopfontein 298JT; Lydenburg; Marble Hall 29JS; Mariepskop 420KT; Mariepskop Forest Station; Modderfontein; Moolman, N.



MAP 145.

Duberria lutrix
lutrix. Recorded
 distribution in the
 Transvaal, and in
 southern Africa.

Tvl.; Nelshoogte Plantation; Nooitgedachtdam Nature Reserve; Northwards; Onderhoek 595LT; Paardekop 76HS; Pilgrim's Rest; Potchefstroom Town and Townlands 435IQ; Pretoria; Rietpoort 405IS; Sabie; Shingwedzi; Somerset 150JT; Spitskop Staatsbos; Steiltes, Nelspruit; The Crows Nest, The Downs Nature Reserve; Vaalbank 233IS; Wanhoop 78JT; Whisky Spruit; Woodbush; Woodbush Forest Reserve; Zoetendalsvlei 125HS; Zwartwater 288IT.

Literature Records

Barberton; Brondal; Bushbuckridge; Hartebeespoort Dam; Louis Trichardt; Mphome; Pietersburg; Witbank, (FitzSimons, 1962). Wolkberg wilderness area (Snyders, 1987). Outlook 789MS (NMZB).

Habitat and Ecology

Occupies variable habitats but usually found in moist areas. It is therefore more common along the Transvaal Drakensberg and high lying areas around Belfast, Lydenburg and Dullstroom south to Wakkerstroom, where it occupies montane to highveld grassland often at the fringes of forest patches. Found in veld types 8, 9, 52, 53, 54, 57, 61 and 63 at altitudes of 1300-2300 m a.s.l. Usually found under stones, rotting logs, building rubble, pieces of iron and even under plant litter. Occasionally in moribund termitaria. Solitary, more rarely in pairs under the same rock, the species is nocturnal and feeds exclusively on slugs and snails. Viviparous from 5 to 23 young are born during mid- to late summer. The latter figure is of embryos still at an early stage of development (N7724 - Dycedale 368JU). Neonates average 80,0 to 90,0 mm in total length at birth, (Broadley, 1983). Dyer (1979) recorded 10 neonates (six males, four females) measuring on average 100,0 mm in total length born to a female measuring 600,0 mm.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Limited to the eastern and south-eastern Transvaal it is represented in a few nature reserves. Although able to survive in a mixture of plantations and grassland/forest, frequently occurring around homesteads, the species is threatened by afforestation. Currently secure, the species should be monitored in the Transvaal.

Genus Pseudaspis Fitzinger, 1843

Pseudaspis Fitzinger, 1843, Syst. Rept., p. 25.

Type: Coluber canus Linnaeus.

A large monotypic snake characterised by having a small head not differentiated from the neck and with a rounded snout. Eyes moderate and with a rounded pupil. The body is well muscled, stout and cylindrical, covered in smooth (exceptionally obtusely keeled), glossy, imbricate scales, in 25-31 rows at midbody. Ventrals smooth; anal scale divided; tail moderately short, cylindrical and tapered with two rows of subcaudals. Viviparous.

The species is widespread in the Transvaal.

Pseudaspis cana (Linnaeus, 1754)

Coluber cana Linnaeus, 1754, Mus. Adolph. Frid., I, p. 31, pl. xi, fig. 1, 1758, Syst. Nat., ed. 10, I, p. 22.
Type locality: "In Indiis" = Africa.

Pseudaspis cana (Linnaeus). FitzSimons, 1962, p. 162, 1966, p. 47, 1970, p. 105, 1974, p. 106; De Waal 1978, p. 96; Jacobsen & Haack, 1980, p. 37; Broadley, 1983, p. 108; Pienaar et al, 1983, p. 154; Auerbach 1987, p. 159, pl. 15, fig. 2; Branch 1988a, p. 63, pls. 28 & 35, 1988b, p. 12.

Pseudaspis cana cana (Linnaeus). Welch 1982, p. 173.

Diagnosis: 99 Specimens examined.

Colour: Very variable. Young specimens usually light reddish brown or old rose above with dark brown to blackish pale-edged spots or blotches which are more or less in four longitudinal series or irregular transverse bands or fusing to form an irregular zig-zag streak along middle of back. Underparts uniform yellow, or infused with varying amounts of greyish to purplish brown in the middle of the belly. Adults are usually a uniform light

grey to shiny yellowish brown, brick red, or have varying shades of brown to pitch black above. In paler-coloured individuals scales may be black-tipped. Underparts usually uniform yellowish, darkly infused in the middle or ventrals dark-edged.

Lepidosis: A large robust, cylindrical bodied snake. Head small in relation to body. Tail thick and moderately long. Nostril pierced between two nasal scales; internasal entering nostril. Body covered with smooth, overlapping scales, 25-31 at midbody. Ventrals 175-218, usually 175-196 in males and 197-218 in females; subcaudals 55-70 in males and 44-57 in females. Anal scale divided.

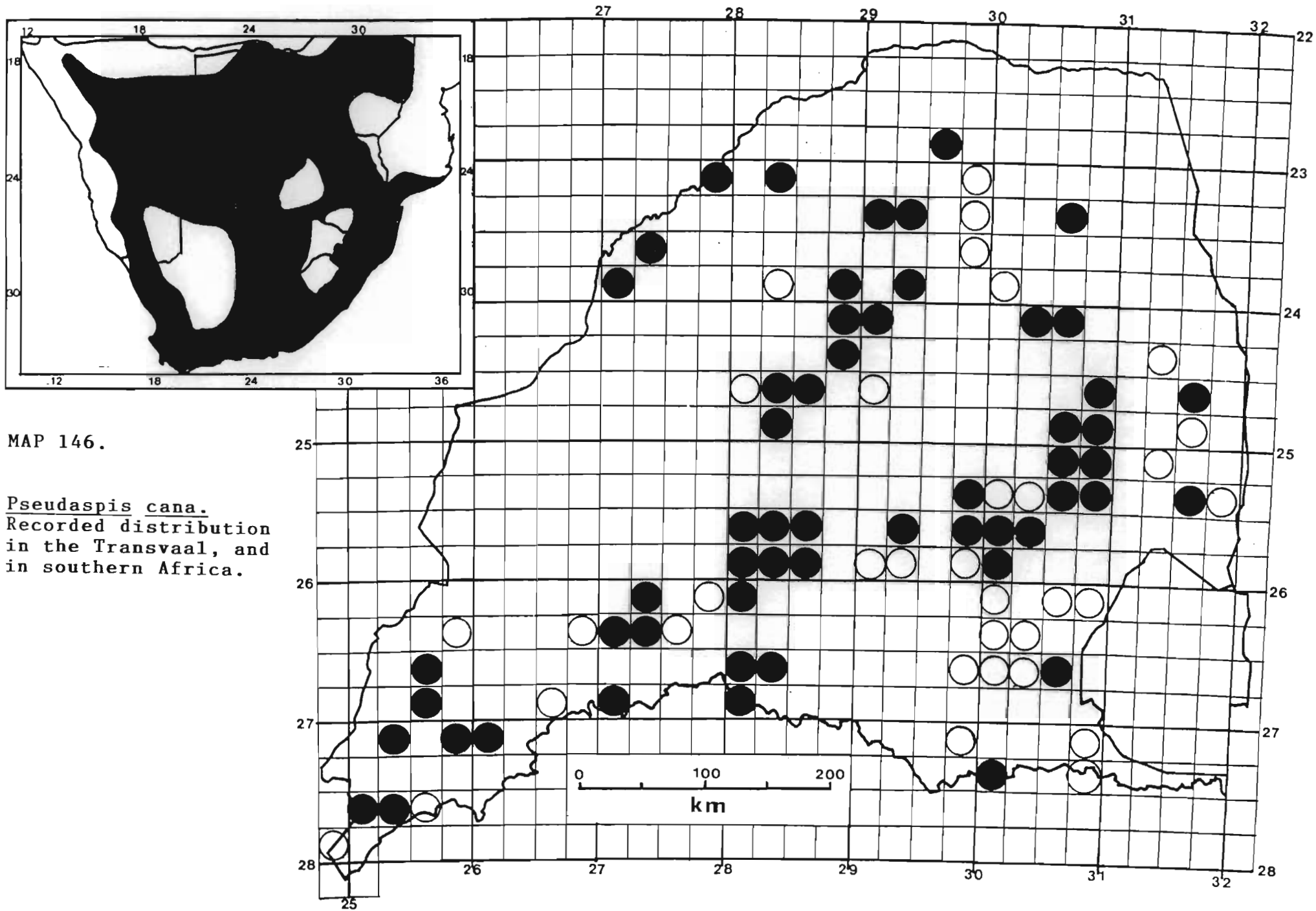
Size: Known to exceed two metres in the Cape Province. The largest specimens measured are, male SVL = 1265,0 mm (UM11329 - Kalkfontein, Botswana) and female 1280,0 mm (USNM - Khuis, Botswana), Broadley (1983). Largest male SVL = 1030,0 mm (J8621 - Elandsfontein 322JT), mass = 845,0 g (J8621); Largest female SVL = 1220,0 mm (N2248 - Sitapo 690MS), mass = 735,0 g (N2248). Mean male SVL (500,0 mm) = 907,5 mm \pm 126,27 (1SD), n = 6, mass = 510,83 g \pm 238,38 (1SD), n = 6; Mean female SVL (500,0 mm) = 948,80 mm \pm 266,67 (1SD), n = 5, mass = 396,0 g \pm 250,12 (1SD), n = 5. Length of tail 4,3-6,2 times into total length in males and 6 to 7,7 in females (Broadley, 1983). Specimens from the Transvaal fit these variables.

Distribution

Throughout southern Africa, northwards to Angola in the west and Kenya in the east.

Distribution in the Transvaal, (Map 146).

Amsterdam 116LS; Athole 392IT; Barberspan Nature Reserve; Belfast; Between Jhb. & Pretoria; Blyde River



Nature Reserve; Borkum 143LS; Bronkhorstspuit;
Cullinan; Dansfontein 40LR; Doorndraaidam Nature
Reserve; Doornkop School, Witpoort; Doringhoek n.
Sterkrivier, Potgietersrust; Driefontein 30HP;
Elandsfontein 322JT; Fochville; Giyani; Halfway House;
Hartebeestfontein 473IR; Hectorspruit 164JU; Irene;
Johannesburg, Die Eike; Kaalfontein 44IQ; Kafferskraal
381IR; Kareelaagte 70HO; Klipbankfontein 44LQ;
Knopjeslaagte 385JR; Leonard 360IO; Lyttelton 381JR;
Manyeleti Game Reserve, Main Camp; Modderfontein;
Moedig Station; Natalshoop 151JT; Nelspruit;
Nooitgedacht, Kranzpoort, Ermelo Dist.; Nylstroom;
Nylsvley Nature Reserve; Oatlands 79IQ; Ongezien 365JS;
Pietersburg; Pilgrim's Rest; Pilgrim's Rest Area;
Pinedene; Potchefstroom, Mooibank; Potgietersrus;
Pretoria; Pretoria, District; Pretoria North;
Pretoria, Fountains; Pretoria, Sunnyside;
Rhenosterfontein; Rietfontein 255JT; Rietfontein 365JT;
Rietput 60HO; Roodeplaatdam turnoff; Rooikopjes 483JR;
S.A. Lombard Nature Reserve; Sabie; Selati Ranch 143KT;
Shilowane; Sitapo 690MS; Soutpansberg Dist.;
Springfield 337LQ; Suikerbosrand Nature Reserve;
Theunispan 293LQ; Tiegerpoort 371JR; Toevlugt 269JS;
Tolstoy Farm - Laaivley Stn. - Jhb. Dist.
Vaalboschfontein 188HO; Vygeboomspoot 456KR;
Wakkerstroom Townlands 121HT; Waterpoort; Zoutpan
301HO; Zuid Holland 773LR.

Literature Records

Amersfoort; Andalusia; Bandolierkop; Bankop;
Biesiesvlei; Bloemhof; Bochem; Carolina; Commondale;
Dullstroom; Ermelo; Goedewil; Klerksdorp; Komati/
Crocodile Rivers Junction; Komatipoort; Kralingen;
Krugersdorp; Lake Chrissie; Leeudoringstad; Lochiel;

Lothair; Loubad; Louis Trichardt; Machadodorp;
Middelburg; Moepel; Munnik; Olienhoutpoort; Overvaal;
Piet Retief; Pretoriuskop; Rayton; Roedtan;
Sheepmoor; The Brook; Tonteldoos; Ventersdorp;
Vygeboom; Welverdiend; Witbank; Wonderfontein;
Suurbekom (FitzSimons, 1962). Orpen Camp; Skukuza
(Pienaar et al, 1983). Wolkberg wilderness area,
(Snyders, 1987). Schweizer Renecke (NMZB).

Habitat and Ecology

Broadley (1983) has given a detailed account of the habits of this species. Although widespread in the Transvaal the species appears to be more frequent in the south-west and less so in the north east and east. An uncommon snake over most of the Transvaal, possibly on account of its habit of remaining in burrows, emerging only to bask. Found in veld types 8, 9, 14, 16, 18, 48, 50, 57, 61 and 63 at altitudes ranging from 800-1800 m a.s.l. Feeds primarily on rodents, particularly rodent moles and gerbils which inhabit burrows. The strong cylindrical body of the snake enables it to move about in the burrow systems of these rodents.

Live bearing, Broadley (1983) records a large female giving birth to 95 young at London Zoo. However this is exceptional and on average 30-50 young are born. Neonates are about 200,0 mm in total length.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. An uncommon snake over most of its range in Transvaal. Habitat destruction has been responsible for the large scale reduction (assumed, based on lack of specimens in well developed areas) in distribution. This is particularly so in the

south west. The species is vulnerable both through habitat destruction and on account of its size and defensive attitude when confronted, biting readily. It is therefore mistaken for a cobra and killed. This species is of great economic importance to the farmer and should be totally exempt from persecution. This species should be more actively publicised to promote active conservation throughout its range.

Remarks

Black individuals are restricted in Transvaal to the south west while brown to grey-brown specimens are found on the highveld and throughout most of the bushveld. Grey specimens occur north of the Soutpansberg. Broadley (1983) recorded an average length of 1,5 m for adults. This appears atypical unless populations have declined in size. Selection pressure on the larger specimens, through being killed by people, is greater than on smaller individuals. The average size appears to be considerably smaller in Transvaal, ranging around 900,0-1200 mm.

Genus Amplorhinus A. Smith, 1847

Amplorhinus A. Smith, 1847, Ill. Zool. S. Afr., Rept.
Type: A. multimaculatus A. Smith.

A small snake whose taxonomic affinities have not yet been finally established (Branch, 1988). Monotypic and endemic to Southern Africa, the species has a robust body, with the head slightly wider than the neck. Eye moderate, with a round pupil. Two grooved, enlarged fangs are located on the maxillary. Body cylindrical covered with smooth, overlapping scales in 17 rows at midbody. Scales on posterior part of back and on base of tail may be feebly keeled. Ventrals smooth; anal scale entire; tail moderately long and tapered with two rows of subcaudals. Viviparous. Only one species known, which in the Transvaal, is virtually restricted to the moister escarpment zone.

Amplorhinus multimaculatus A. Smith, 1847

Amplorhinus multimaculatus A. Smith, 1847, Ill. Zool. S. Afr., Rept., pl. lvii. Type locality: Cape Colony, South Africa. FitzSimons, 1962, p. 193, 1966, p. 63, 1970/74, p. 120/121; Jacobsen & Haacke, 1980, p. 44; Welch, 1982, p. 173; Broadley, 1983, p. 112, figs. 66 & 67; Branch 1988a, p. 65, pl. 18, 1988b, p. 13.

Diagnosis: 11 Specimens examined.

Colour: Green, olive green, olive to olive brown above, uniform or with longitudinal series of dark brown or black spots, with or without a pale dorso-lateral stripe or band on either side from nape to base of tail. Scattered scales on body often narrowly edged with white

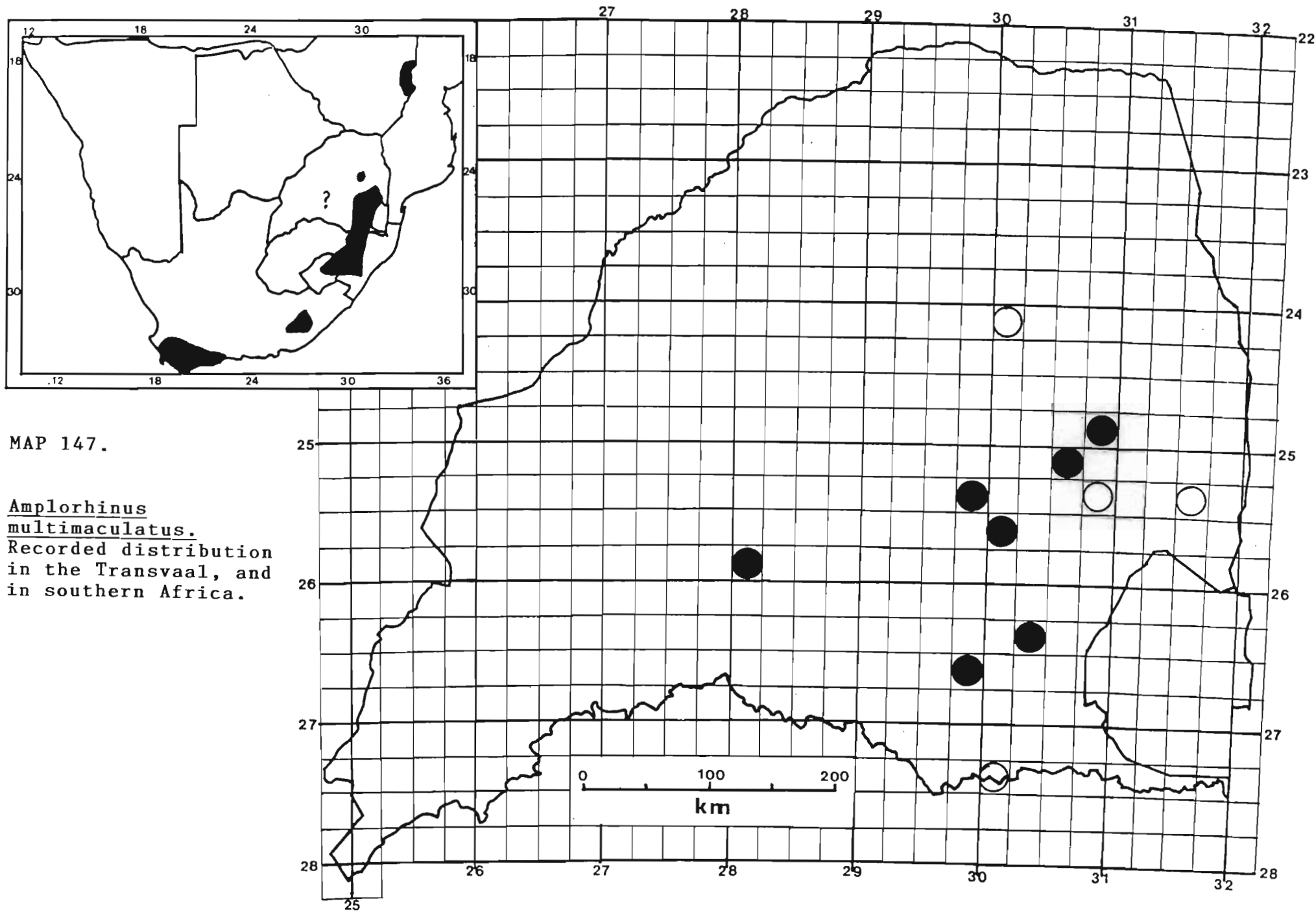
to bluish- or yellowish white. Interstitial skin sometimes black. Tail always uniformly coloured. Underparts dull green, olive to sooty or bluish grey except for the chin, which is creamy white to yellow or bluish white, with dark-edged scales. In the Transvaal specimens tend to be more uniform bright to olive green above, with a yellow chin, (Broadley, 1983).

Lepidosis: A small snake with a stout body and head only marginally larger than neck. Tail moderate and tapered. Rostral broader than deep and just visible from above; Nostril pierced in a single, semidivided nasal scale; loreal scale present; eye moderate with round pupil; a pair of enlarged, grooved poison fangs in the upper jaw below the eye; mandibular teeth small and subequal in size; snout distinctly excavate, just anterior to the eye; Body covered in smooth to slightly keeled posteriorly, overlapping scales numbering 17 at midbody. Ventrals 133-154; anal scale entire; subcaudals 58-82, 58-66 in females and 68-82 in males. Occasional specimens may have some subcaudals undivided.

Size: Broadley (1983) records average adult length as being 50,0 cm. Only one specimen in the Transvaal was measured, this being a male with SVL = 272,0 mm, T = 107,0 and a mass of 10,0 g. The tail is contained in total length 2,8 to 3,5 times in males and 3,8 to 4,7 times in females, which makes the above specimen at 3,54 times marginally a male.

Distribution

From the western Cape Province eastwards and northwards to the Lesotho, Natal and the southern and eastern Transvaal. A relict population occurs in eastern Zimbabwe.



Distribution in the Transvaal, (Map 147).

Belfast; De Kuilen 205JT; Doornkop School, Witpoort;
Ermelo; Irene; Lothair 124IT; Schoongezicht 364JT;
Stanley Bush Kop.

Literature Records

Brondal; Hectorspruit; The Downs; Wakkerstroom
(FitzSimons, 1962).

Habitat and Ecology

An inhabitant of montane and highveld grassland in veld types 8, 9, 10, 57 and 61 at altitudes of 1000-2000 m a.s.l. Usually found in moist locations on mountain sides and alongside streams. Diurnal, it feeds on frogs. Little is otherwise known of the species, with the exception that it is viviparous, producing from four to five young ranging in size from 125,0 to 200,0 mm in total length at birth (Broadley, 1983). Dyer (1979) however recorded two litters of nine and 13 neonates, the former consisting of four males and five females and the latter, eight males and five females. The neonates measured 60,0 - 80,0 mm. Of the first litter born to a female measuring 590,0 mm in total length, two neonates were born dead while of the second litter born to a female of 710,0 mm, three were born dead. Branch (1984a) recorded the birth of six neonates from a small female measuring 356,0 mm total length. The total birth mass of the neonates (minus foetal membranes and fluids) was 6,25 g or 44,6% of the females' post partum mass. The neonates measured 92,0-107,0 mm SVL and had masses ranging from 0,9-1,2 g. A sex ratio of 1:1 is postulated on the length of the tail in relation to total length, ranging from 2,87-3,74 times.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A very uncommon snake in the Transvaal it is vulnerable to habitat destruction such as afforestation, and fire. Its range must therefore have been considerably reduced in the past. It does occur on the Verloren Valei and probably also the Blyde river nature reserves. However the species is in need of a more detailed study to determine habitat requirements and density. The species is not secure in the Transvaal.

Remarks

The record from Hectorspruit (FitzSimons, 1962) appears dubious as the species is, in the Transvaal, a montane, grassland species, unless it was collected on higher ground to the south, on outliers of the Makonjwa range. A specimen of Hemirhagerrhis nototaenia (TM 5315 - Hectorspruit) was found together with Amplorhinus in the Transvaal Museum collection and may be responsible for the error. Another specimen TM 5314 from Irene is suspect as this locality falls outside the eastern and south-eastern distribution of the species. Confirmation is needed.

Genus Hemirhagerrhis Boettger, 1896

Hemirhagerrhis Boettger, 1896 b, Zool. Anz. 16, p. 119.
Type: H. kelleri.

A small snake with two enlarged, grooved fangs on the maxilla posterior to 9 (exceptionally 10) small recurved teeth. Head slightly depressed and distinct from the neck. Eye small with a vertically elliptic pupil. Body slender and cylindrical, covered with smooth, imbricate scales, in 17 (exceptionally 19) rows at midbody. Ventrals smooth; anal scale divided; tail slender, tapering and moderately long with two rows of subcaudals. Oviparous. Only one species occurs in South Africa. Restricted in distribution in the Transvaal, this snake occurs in the lowveld and along the Limpopo trough.

Hemirhagerrhis nototaenia nototaenia (Günther, 1864)

Coronella nototaenia Günther, 1864b, Proc. Zool. Soc. London, p. 309, pl. xxvi, fig. 1. Type locality: Rios de Sena, Zambezi, Mozambique.

Hemirhagerrhis nototaenia nototaenia (Günther).
FitzSimons 1962, p. 206, 1966, p. 63, 1970/74, p. 125;
Pienaar 1966, p. 180, 1978, p. 163; Jacobsen & Haacke, 1980, p. 45; Welch 1982, p. 168; Broadley 1983, p. 118, figs. 71 & 72, pl. 23; Pienaar et al, 1983, p. 156, pl. 67; Auerbach, 1987, p. 161, pl. 15, fig. 4; Branch 1988a, p. 68, pl. 16, 1988b, p. 13.

Diagnosis. 21 Specimens examined.

Colour: Ash grey to greyish brown above, with a double series of blackish spots, connected by a dark vertebral stripe or band, which at the nape unite to form a more or less zig-zag or nodular band. Posteriorly this band becomes paler and the spots smaller and more isolated.

Sides of head and neck often tinged with flesh to salmon colour. Lips darkly infused with a blackish streak on either side from end of snout, through the eye, and breaking up over anterior half of body into a series of small dark spots. Reunite again over posterior half of body into a thin dark line right down to the tail. Underparts pale brownish to ash grey, more or less densely speckled, marbled or infused with darker shades. Distal third of tail usually pale in colour varying from yellowish to flesh, salmon or orange, (Broadley, 1983).

Lepidosis: A small slender snake with a elongate head distinct from the neck and a long slender tapering tail. Rostral normal size, snout rounded; nostril pierced in a single, semidivided nasal scale; eye moderate in size, pupil round; a pair of enlarged, grooved poison fangs in the upper jaw below the eye; mandibular teeth enlarged in front, snout with sides non-excavate. Body scales more or less smooth and imbricate, in 17 rows at midbody; Ventrals 156-183 (usually between 164-175 in southern African specimens), Broadley (1983). Anal scale divided; subcaudals paired, 68-98 (seldom over 83 in southern African specimens). Hemipenal structure described (Bogert, 1940, in Broadley, 1983).

Size: Broadley, (1983) records the average length of adults as 300,0 mm. The mean SVL of Transvaal specimens is 234,12 mm \pm 39,77 (1SD), n = 4, mass = 4,17 g \pm 2,20 (1SD), n = 4. The largest Transvaal specimen measured 363,0 mm total length, with a mass of 6,8 g. The tail is contained in the total length from 3,0 to 4,89 times.

Distribution

From southern Sudan and Somalia south to Mozambique, Zimbabwe, northern Botswana, northern and eastern Transvaal.

Distribution in the Transvaal (Map 148).

Gravelotte 783LT; Hans Merensky Nature Reserve; Hectorspruit 164JU; Hoedspruit; Limpopodraai; Malelane TSB Sugar Mill; Manyeleti Game Reserve, Albatross 201KU; Manyeleti Game Reserve, Dixie Hill; Manyeleti Game Reserve, Main Camp near Shabaku; Newington 255KU; Orpen; Pafuri; Scheiding 756LT; Schiettocht 25LU; Shlaralumi; Springvalley 200KU; Suikerkop 62KU; Trevenna 119MT; Uitspan 65LQ; Weipe 47MS.

Literature Records

Leydsdorp; Skukuza; Waterpoort, (FitzSimons, 1962). W.N.L.A. quarters, Pafuri; Pumbe picket area; Nahpe road 20,8 km from Skukuza; Nwambiya pan; Mkuhlu picnic spot, Lower Sabie road; Nwanedzi experimental plots; new Hlanganine firebreak road, Letaba section; Pafuri picnic spot; between Bvumundyundu and Mapangu Drift, western boundary; south of Punda Milia; 4,8 km north of Satara; 3,2 km from western termination of Sweni firebreak; Shilowa; between Kostine and Shilowa; between beacons 9 and 10, eastern boundary (Pienaar et al, 1983).

Habitat and Ecology

Restricted to the lowveld of the eastern and northern Transvaal in veld types 11, 14, 15 and 18 at altitudes ranging from 300-800 m a.s.l. Often found under pieces of loose bark on the boles of trees, but may also be found basking in the morning sun on the boles of trees and large termitaria. Feeds largely on geckos but other lizards and rarely small frogs are also included in the diet. Oviparous, from 2 to 8 eggs are laid at a time, measuring 24,0 x 6,0 mm and are laid in spring to early summer.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. An uncommon species it is widespread in the Kruger National Park and will no doubt also occur in several provincial nature reserves. The habitat, with the exception of parts of Gazankulu are adequate to maintain the species. Currently secure.

Genus Psammophylax Fitzinger, 1843

Psammophylax Fitzinger, 1843, Syst. Rept., p. 26. Type:
Coluber rhombeatus Linnaeus.

Small to medium sized snakes, with a head distinct from the neck. Eyes moderate in size and with a round pupil. Two enlarged, grooved fangs on the maxillary preceded by 10 to 12 solid teeth. Body cylindrical, covered with smooth, overlapping scales in 17 rows at midbody; ventrals smooth; anal scale divided; tail moderately long and subcaudals are in two rows. Oviparous to ovo-viviparous. Only two species occur in the Transvaal one of which is mainly confined to highveld and montane grassland and the other is more a bushveld and lowveld species although a zone of overlap does exist.

Key to the Transvaal species

- 1. Snout pointed; upper labials immaculate white; usually a dark vertebral stripe bordered by a pair of parallel black lines which bisect the paravertebral scale rows; ventrum uniform white with broken pink to orange ventrolateral lines P. tritaeniatus
- Snout rounded; upper labials usually with dark spots or suffused with grey or brown. Dorsum with 3 or 4 longitudinal rows of dark spots which may be more or less confluent to form three broad longitudinal dark stripes; Ventrums grey or if white, with dark spots or grey mottling.
..... P. rhombeatus
rhombeatus

Psammophylax rhombeatus rhombeatus (Linnaeus, 1754)

Coluber rhombeatus Linnaeus, 1754, Mus. Adolph. Frid., p. 27, pl. xxiv, fig. 2, 1758, Syst. Nat. ed. 10, I, p. 220. Type locality: "In Indiis" = South Africa.

Psammophylax rhombeatus (Linnaeus). FitzSimons, 1962, p. 210, 1966, p. 62, 1970/74, p. 126/127.

Psammophis rhombeatus rhombeatus (Linnaeus). Broadley 1977(a), p. 21, figs. 7 & 8, pl. ii; De Waal, 1978, p. 105; Jacobsen & Haacke, 1980, p. 46; Welch, 1982, p. 171; Broadley, 1983, p. 121, figs. 73 & 74, pls 24 & 25; Branch, 1988a, p. 69, pls. 17 & 22, 1988b, p. 13.

Diagnosis: 136 Specimens examined.

Colour: Greyish to yellowish brown or pale olive brown above. Exceptionally uniform, but usually with black-edged markings, which form three (exceptionally four) longitudinal series of large roundish spots, or may be partially or completely confluent into zig-zag or straight longitudinal bands, (a vertebral and a lateral on either side). Sometimes the ground colour between the spots or bands appears as more or less regular and conspicuous yellow streaks. On the tail dark spots fused to form three regular, longitudinal bands, separated by pale streaks. Head usually uniform but with dark patch in temporal region. Underparts creamy to yellowish or greenish white, dotted, spotted or blotched with bluish grey to black in varying degree. Tongue usually red.

Lepidosis: A small to medium sized snake with a moderately robust body. Head as broad to broader than neck and tapered anteriorly. Tail tapered and moderately long. Rostral normal, snout rounded; nostril pierced between 2 nasal and an internasal, scales; loreal scale present; internasals in contact (74,51%) or separate (25,49%). Temporals 2 (rarely 1). Eye moderate with a round pupil; a pair of enlarged, grooved poison fangs in

the upper jaw below the eye; maxillary teeth subequal in size and continuous to the space separating them from the posterior pair of enlarged poison fangs. Body covered in smooth, imbricate scales, 17 at midbody. Ventrals 143-177, usually 150-170, (Broadley, 1983); anal scale divided; subcaudals 60 to 73.

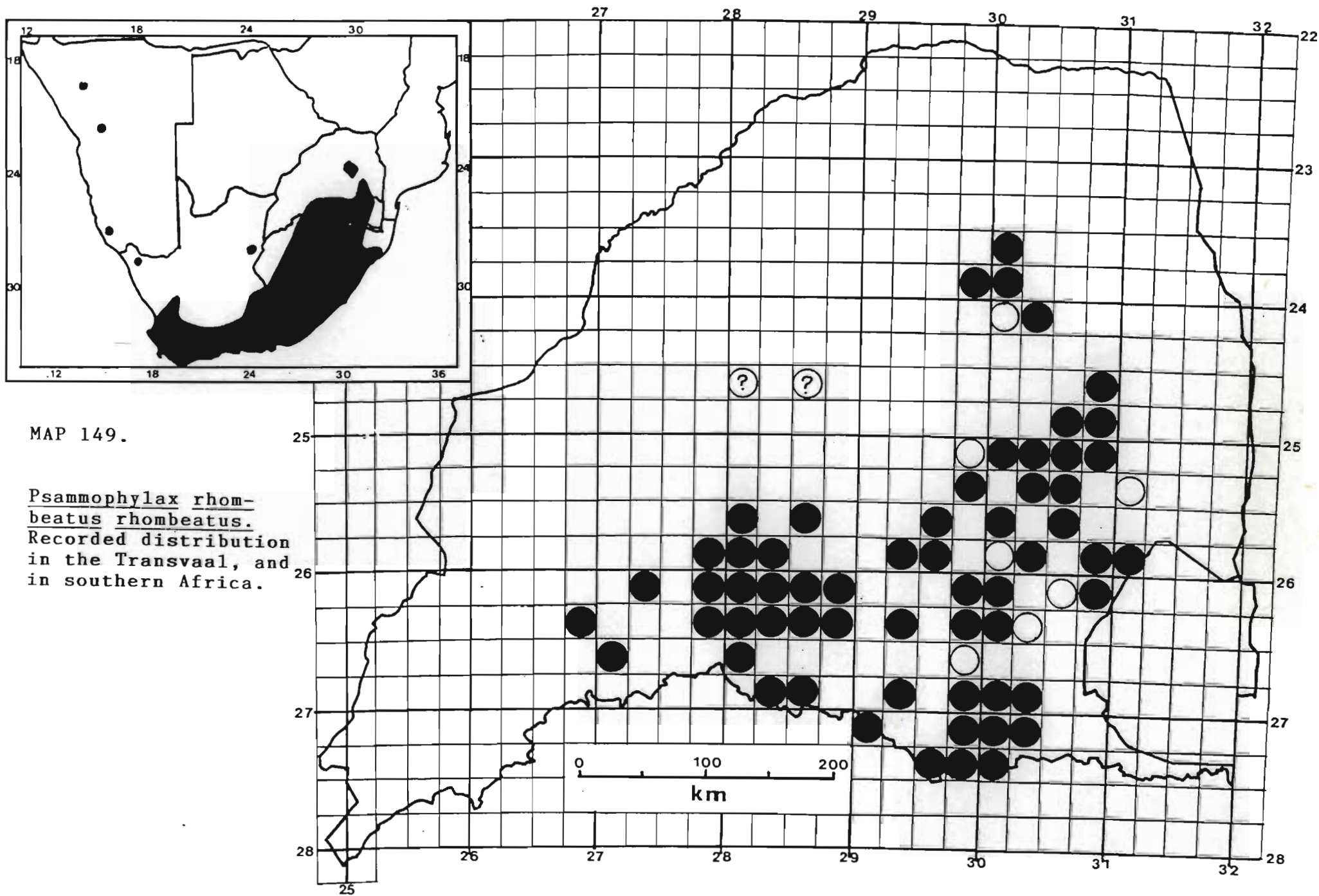
Size: Largest male SVL = 748,0 mm (P10465 - Suikerboschfontein 422JT), mass = 91,0 g (P10465); Largest female SVL = 668,0 mm (J - Paardeplaats 101HT), mass = 150,0 g. Mean male SVL (300,0 mm) = 477,5 mm \pm 129,55 (1SD), n = 8; mass = 39,12 g \pm 23,30 (1SD), n = 8; Mean female SVL (300,0 mm) = 472,39 mm \pm 84,51 (1SD), n = 18, mass = 45,59 g \pm 34,59 (1SD), n = 17. Tail long and contained in total length from 4-5 times. No apparent sexual dimorphism.

Distribution

Widespread in South Africa along the eastern and southern half of the country. Isolated relict populations occur in South West Africa/Namibia.

Distribution in the Transvaal (Map 149).

2 km from Leslie, Bethal Dist; 22 km SW of Pretoria; Approx. 10 km E. Witbank; Belfast; Benoni, Rynfield; Blyde River Nature Reserve; Boschmanskrans 22IS; Broederstroom 48HT; Buitenzorg 114HT; Carolina Dist.; Clearwaters, Hanertsburg; Concordia 560KT; Crocodile River, Pretoria; Cullinan; Daspoort 319JR; De Berg 71JT; De Kuilen 205JT; De Kuilen 460IR; Delmas; Doornkop School, Witpoort; Elandskuil 208IP; Frederikstad, Potchefstroom; Germiston; Graskop 564KT; Groblersrecht 175IS; Grootdraai Dam, Standerton Dist. 412IS; Grootvlei Mine; Hartbeespoort 482JQ; Irene;



Johannesburg; Johannesburg, Glenanda; Johannesburg, Honeydew; Josefsdal 382JU; Kafferskraal 381IR; Kalkoenkrans 366IT; Kempton Park, Bloupan; Kleinfontein 3HT; Klipplaatdrift 504IS; Koestersfontein 45IQ; Komatipoort Townlands 182JU; Koppieskraal 157IR; Krabbefontein; Kranskloof 554KT; Kromdraai 486JS; Kromdraai 520JQ; Lakenvlei 355JT; Langzeekoegat 325IR; Leiden 340IT; Lisbon State Forest; Lochiel 192IT; Loopfontein 298JT; Lydenburg; Mariepskop 420KT; Modderbee Prison, Benoni; Modderfontein; New Agatha Forest Station; Nigel Dorpsgebied; Ongezien 365JS; Paardeplaats 101HT; Paradise Bend, Pretoria/Krugersdorp Rd., Pta. Dist.; Pilgrim's Rest; Pinedene; Pomona, Benoni; Potchefstroom Town and Townlands 435IQ; Pretoria; Pretoria District; Pretoria, Fountains Grove; Pretoria, Rietfontein; Randfontein; Rietpoort 83HS; Rietvlei 33HS; Rietvlei Dam, Pretoria; Roodepoort; Roodepoort 598IR; Rustfontein 1030LS; Sabie; Shilowane; Simonsdal 88IT; Spaarwater 171IR; Standerton; Suikerboschfontein 422JT; Suikerbosrand Nature Reserve; Swartkop 383JR; Syferfontein 293IQ; Syferfontein, Bramley; Tevreden 56IT; Transvaal; Vaalkop 104IS; Vlakplaats 268IR; Volksrust; Vooruitzicht 374JU; Wakkerstroom Townlands 121HT; Waterval 138HS; Weimershoek 81JT; Witklipbank 202IR; Wonderfontein 341IR; Woodbush; Zuurfontein, Johannesburg.

Literature Records

Bramley; Dunottar; Erasmus; Halfway House; Karino; Krugersdorp; Lothair; Loubad; Malta 32KT; Middelburg; Middelfontein; Pan; Rayton; The Brook (FitzSimons, 1962). Ermelo; Haenertsburg; Klein Letaba River; Pienaars River Bridge; Rietfontein; Sewefontein; Tautesberg (Broadley, 1977). Wolkberg wilderness area (Snyders, 1987).

Habitat and Ecology

A highveld and montane grassland species occurring in veld types 8, 18, 48, 52, 54, 55, 57, 61, 62 and 63, at altitudes between 1050-2300 m a.s.l. Frequently observed during the day foraging for food in rocky and moist places. Also takes refuge under rocks on soil or in crevices, in moribund termitaria, under rubble or in hollows or holes in earth banks sometimes in the company of other snakes. Feeds mainly on frogs, lizards, rodents and shrews.

Oviparous, the female lays from 6 to 17 ova (De Waal, 1978; Bates, 1985; Creighton & Haagner, 1986; pers. obs.). On occasions more than one female may lay eggs in a particularly favourable locality. The maximum observed were three females coiled around or adjacent to their respective clutches totalling 20 eggs under a large rock slab. De Waal (1978) recorded a maximum of four females together. Why the females attend their eggs is not known. The females lie loosely around the egg mass and could therefore not contribute to the incubation process. The eggs are laid from early to midsummer including the months September, October and November (De Waal, 1978; Bates, 1985; Creighton & Haagner, 1986a; pers. obs.). They measure 20,5-32,0 x 12,5-15,0 mm (De Waal, 1978; Bates, 1985; Creighton & Haagner, 1986a) with a mass of 1,6-2,2 g. Eleven eggs had a total mass of 20,5 g or 55,5% of the post partum mass of the female. According to Broadley (1983) the eggs are already partly developed when laid. The incubation period varies from 35 to 60 days (Broadley, 1983; Bates, 1985, Creighton & Haagner, 1986a) this being dependent on temperature and humidity. The young measure, according to Broadley (1983) 180,0 - 200,0 mm in total length. De Waal (1978) records a hatchling measuring 175,0 mm while Bates (1985) recorded 180,0 to 200,0 mm with a mean of 190,0 mm. Creighton &

Haagner (1986a) recorded a mean total length of 178,2 mm. Six neonates hatched from eggs collected at Rondefontein 974LS ranged from 180,0 to 185,5 mm with masses of 1,55-1,80 g, (pers. obs.). Creighton & Haagner (1986) recorded a mean of 2,08 g.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A widespread species, not uncommon on the highveld but rare in the remainder of the Transvaal. It occurs on several provincial nature reserves and can currently be considered secure.

Remarks

Broadley (1977a) remarked on the great degree of variability in colour of rhombeatus. This is reinforced in this study, where colours were observed ranging from yellow-green to grey and from spotted or blotched to striped.

Although Broadley (1977a) refers to a specimen from the Klein Letaba river recorded by Boulenger (1907), this possibly pertains to the headwaters of this river, which arises in the woodbush, from which locality the species is known. This would therefore represent the northern limits of the species in the east and not the Soutpansberg as recorded by Broadley (1977a).

Psammophylax tritaeniatus (Günther, 1868)

Rhagerrhis tritaeniatus Günther, 1868, Ann. Mag. Nat. Hist. (4), 1, p. 423, pl. xix, fig. H. Type locality: south-east Africa.

Psammophylax tritaeniatus (Günther). Broadley, 1977a, p. 32, fig. 11, pl. iii; Pienaar 1978, p. 164, pl. 74; De Waal, 1978, p. 106; Welch 1982, p. 171; Broadley, 1983, p. 124, pl. 26; Pienaar et al, 1983, p. 158, pl. 68; Auerbach 1987, p. 163; pl. 15, fig. 5; Branch 1988, p. 70, pl. 22, 1988b, p. 13.

Psammophylax tritaenatus triaeniatus (Günther).

FitzSimons 1962, p. 213, 1966, p. 62, 1970, p. 126, 1974, p. 130; Pienaar 1966, p. 182; Jacobsen 1977, p. 31; Jacobsen & Haacke, 1980, p. 47.

Diagnosis: 110 Specimens examined.

Colour: Grey to pale greyish olive or brown above, with three well-defined edged, dark brown longitudinal bands which extend along the entire length of the snake. The vertebral band, narrower than the laterals, runs from the back of the head to the tail and is often divided down the middle by a fine yellowish line. The lateral bands arise on either side of the head just behind the nostril. Below the lateral bands the body is white to creamy or yellowish white, uniform or with a light to dark reddish, stippled or solid line along outer row of scales from side of neck to vent.

Lepidosis: A smaller snake than rhombeatus this species has a head slightly broader than the neck, with a pointed snout. Tail moderately long. Rostral usually broader than deep, as broad as or rarely deeper than broad; nostril pierced between two nasals and an internasal; loreal present; eye moderately large, pupil round; a pair of enlarged, grooved, poison fangs in the upper jaw

below the eye; maxillary teeth subequal in size and continuous, separated by a gap from the posterior pair of enlarged poison fangs. Scales at midbody 17, smooth and overlapping. Ventrals 139 to 176, exceptionally less than 150. Broadley (1966) recorded 145-167 in males and 149-174 in females from south-eastern Africa, while De Waal (1978), recorded 151-160 in males and 153-169 in females from the Orange Free State indicating a less variable population. Final scale divided; subcaudals 49-69, seldom less than 53 or over 65 (Broadley, 1983) and 53 to 68 in the Orange Free State (De Waal, 1978).

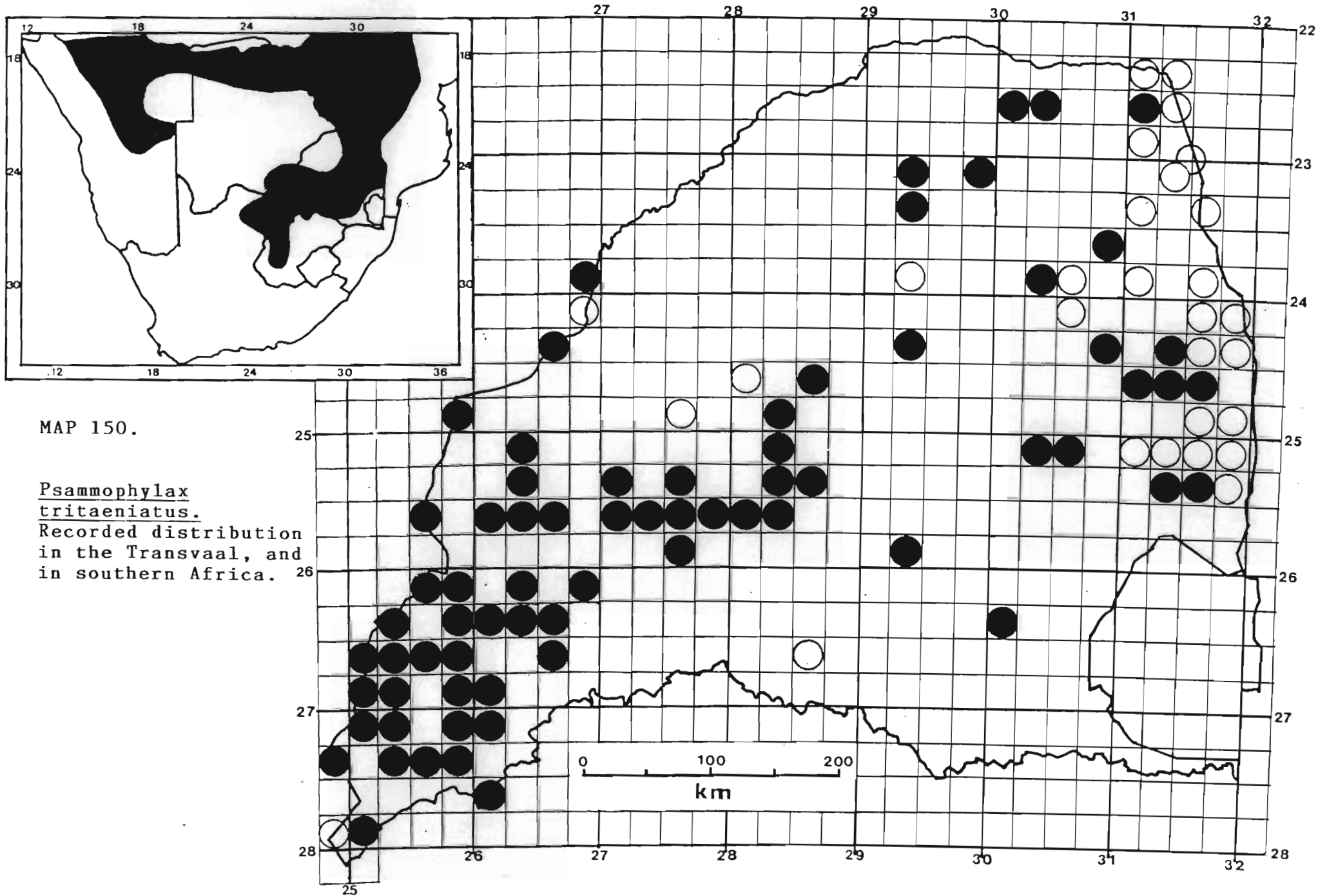
Size: Largest male SVL = 605,0 mm (N7392 - Riet 182MT), mass = 82,0 g (N7392); Largest female SVL = 465,0 mm (J4540 - Medford Park 52JP), mass = 41,5 g (N3906 - Kruisrivier 270JP). Mean male SVL = (200,0 mm) = 350,06 mm \pm 104,79 (1SD), n = 17, mass = 19,65 g \pm 18,97 (1SD), n = 16; Mean female SVL (200,0 mm) = 337,38 mm \pm 64,87 (1SD), n = 26, mass = 18,30 g \pm 10,99 (1SD), n = 27. Length of tail from 4 to 5 times into total length (range 4,33 - 5,23, n = 29).

Distribution

From Tanzania and Angola south to northern South West Africa/Namibia, northern Botswana, Zimbabwe, Transvaal, Orange Free State and the northern Cape Province.

Distribution in the Transvaal, (Map 150).

52 km Rustenburg - Hartebeespoortdam; Allandale 237KU; Amsterdam 116LS; Barberspan Nature Reserve; Berlyn 670LT; Bleskop, Rustenburg; Boekenhoutskloofdrift 286JR; Brits - Crocodile River; Chester 235KT; Christiana 325HO; Cyfergat 38JP; Derdepoort 327JR;



Doornbult 81IP; Doornfontein 345IP; Gestoptefontein 349IO; Goedvoornuitzicht 242IP; Groenkloof, Rustenburg Dist.; Hammanskraal; Hartebeeshoek Provincial Nursery; Hectorspruit 164JU; Houwater 54JQ; Kaalplaats 194IO; Kareekuul 356IO; Kareelaagte 45JO; Kruisrivier 270JP; Kunana Location 4IO; Lot 19 20HO; Lot 43 250IO; Luphephe Dam; Lydenburg; Magalakwin River, Potgietersrus Dist.; Makluva; Malelane; Manyeleti Game Reserve, Albatros; Manyeleti Game Reserve, Hermitage; Manyeleti Game Reserve, Main Camp; Marico Bosvelddam; Marico Stroom 64KP; Marokane 1HN; Medfordt Park 52JP; Middelburg Town and Townlands 287JS; Mooivlei, Rustenburg Dist.; Naboomspruit 348KR; Nooitgedacht alias Vetpan 131IP; Nylsvley Nature Reserve; Orpen; Pleizier 113IQ; Pretoria; Pretoria, District; Pretoria, Mayville; Pretoria Rosslyn, Punda Milia; Radium Station, S. of Warmbath; Riet 182MT; Rietfontein 214JR; Rietfontein 62IO; Rietvly 271JQ; Rondebosch 287LS; Roodeplaat 293JR; Roodeplaatdam Nature Reserve; Rustenburg; Rustenburg Nature Reserve; Rustenburg Platinum Mine; Selati Ranch 143KT; Silwana's Location 719LT; Springbokpan 61IO; Sterkstroom 216IP; Stroomdrift 124HP; Syfergat 204HO; Tweerivier 197JQ; Uitvalskop 14HN; Vaalbank 110IP; Vaalboschfontein 188HO; Van Tondershoek 10KO; Vivo, near; Vlakfontein 315IP; Vlakfontein 37HP; Vredeburg 256IO; Vuurfontein 117HO; Vygeboom; Vygeboomspoort 456KR; Warmbaths; Welgelegen 107IT; Welgevonden 312IO; Witpan 20IP; Wolmaransstad Town and Townlands 184HO; Zebediela Estates 101KS; Zoutpansberg; Zwartruggens; Zyferfontein 293JP.

Literature Records

Balfour; Crocodile-Marico Confluence; Dendron; Satara-Ngotso Firebreak; Pietersburg; Rooiberg; Waterberg (Broadley, 1977). Andalusia; Gravelotte;

Kralingen; Letaba Camp; Lower Sabie; Nwanedzi Camp; Pienaars River; Pretoriuskop Camp; Shilowa; Shingwedzi; Skukuza (FitzSimons, 1962). On road to Ngotsa dam; Nwanedzi camp area; Malelane road south of Mlambane drift; Nyandu firebreak road near Nwambiya; 1,6 km north of Mbyashishe drift, western boundary; Mkuhlu picnic spot; Punda Maria airstrip; main road between Tsende drift and Letaba causeway; just east of Dzundula waterhole in the Mphongolo; Shingwedzi quarters; 4,8 km east of Nwashitsumbe windmill; along lower reaches of Mbyamiti river; Shaben experimental plots; Crocodile bridge quarters; Malopene road between Shivulani and Ngwenyene windmills; Mlambane firebreak near Makutwanine; Timbavati at Pelwane mouth; Nwatindlopfu road near Tihathla; Tshokwane; Mahubene-pan; Pumbe sandveld; between beacons 9-10 eastern boundary; New tarred road north of Luvuvhu river 12-17 km; 10 km north of Numbi along western boundary; Malelane (Pienaar et al, 1983). Makalali 167KT (NMZB).

Habitat and Ecology

A more arid species inhabiting woodland and grassland in veldtypes 9, 11, 13, 14, 15, 16, 18, 19, 20, 48, 50, 61 and 63 at altitudes between 450 and 1600 m a.s.l. A diurnal snake, it is usually found moving about, often on roads where they adopt a wavy position. This seems to enhance the absorption of radiation, as all individuals do it. Also takes refuge under rocks, building debris, piles of broken bricks and in moribund termitaria, the latter especially in the south western Transvaal.

Like most grass snakes and sand snakes, these snakes dash off if disturbed, but after travelling a short distance will stop, the light and dark lines of the snake rendering it very difficult to see. Sometimes takes

refuge in water, staying under in excess of 5 minutes. The species feeds on frogs, lizards, small mice and shrews. The prey is seized and the venom is chewed in, in order for it to work effectively.

Oviparous, 6 to 15 eggs are laid under a rock or other suitable cover during September, October and November. Broadley (1983) records sizes of 20,0 - 25,0 x 10,0 - 12,0 mm while 17 eggs measured by Haagner (1986d) ranged from 23,2 - 28,2 mm x 13,7 - 15,5 mm with a mass of 2,0 - 2,9 g. The total egg mass weighed 40,7 g, which is 107,9% of the female's post partum mass. Embryonic development was in evidence in the ova with the presence of a 4,0 mm embryo in an egg opened shortly after it was laid. Incubated at 28°C the eggs hatched between 43-45 days after laying. Hatchlings measured on average 179,5 mm in total length with a mean mass of 2,15 g.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Widespread in the Transvaal, although sporadic it may be locally common in certain areas. Under no immediate threat.

Genus Rhamphiophis Peters, 1854

Rhamphiophis Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 624 and 1855, Arch. Naturg. 21, 1, p. 53. Type: Rhamphiophis rostratus Peters.

Distinguished by the shortened skull and the hooked snout formed by changes in the bone structure of the snout. Head as large to slightly distinct from neck. Eyes well developed with a rounded pupil. Two enlarged, grooved fangs found on the posterior end of the maxilla and situated below the eye. Body cylindrical and muscular, an adaptation for pursuing prey in burrows and tunnel systems. Dorsal scales smooth and imbricate, in 17 or 19 rows at midbody; ventrals smooth; anal scale divided; tail cylindrical, moderately long with the subcaudals in two rows. Oviparous. Only one species is found in the Transvaal. Rare and seldom seen.

Rhamphiophis oxyrhynchus rostratus Peters, 1854.

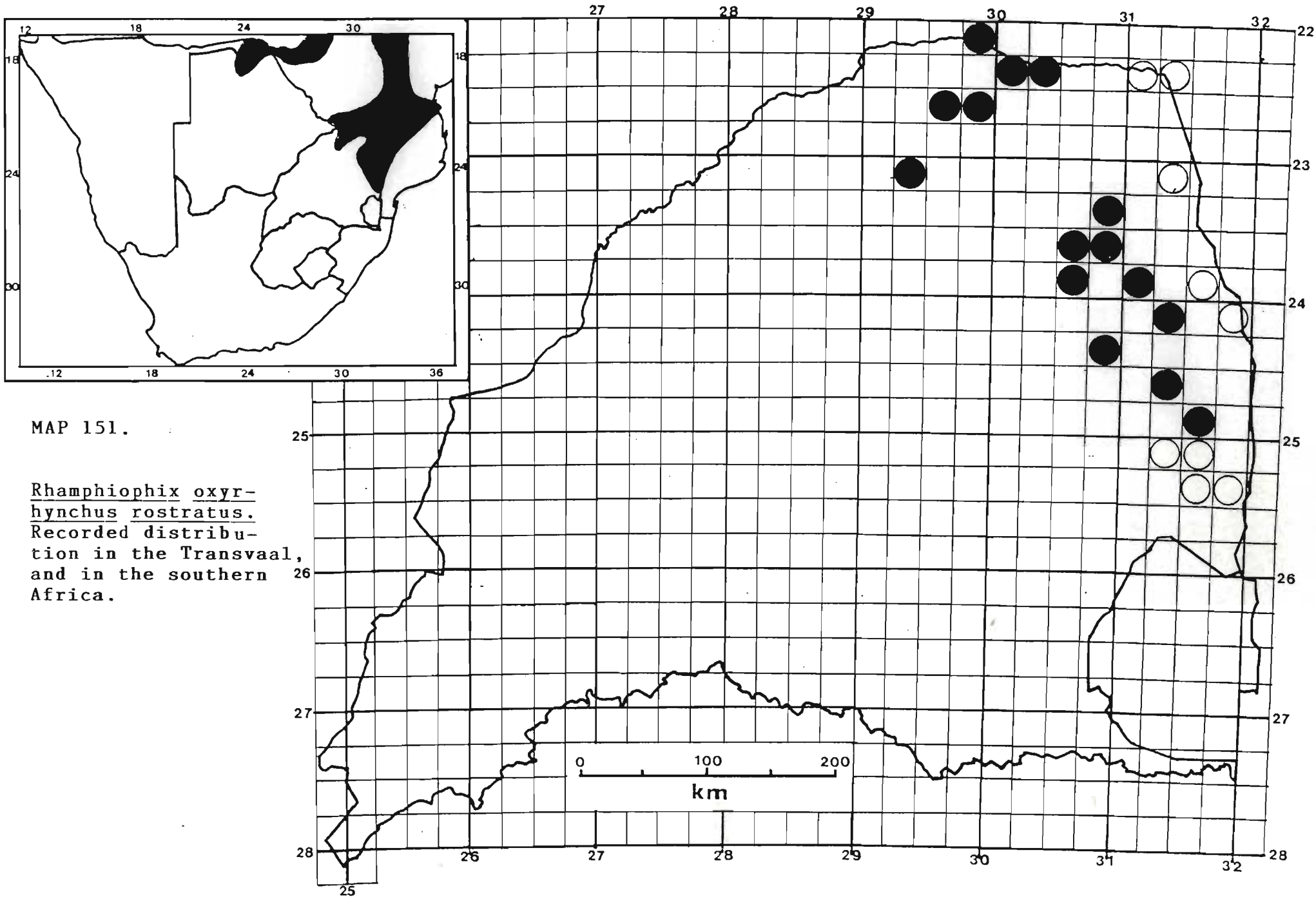
Rhamphiophis rostratus Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 624 and 1855, Arch. Naturg., 21,1, p. 53. Type locality: Tete, Mozambique.

Rhamphiophis oxyrhynchus rostratus Peters.

FitzSimons, 1962, p. 215, 1966, p. 58, 1970/74, p. 130/131; Pienaar, 1966, p. 183, 1978, p. 166, pl. 75, 75A; Jacobsen & Haacke, 1980, p. 48; Welch, 1982, p. 172; Broadley 1983, p. 126, figs. 75 & 76; Pienaar et al, 1983, p. 160, pls. 69 & 69A; Auerbach 1987, p. 164, pl. 15, fig. 6; Branch, 1988a, p. 68, pl. 34, 1988b, p. 13.

Diagnosis. 22 Specimens examined.

Colour: Yellowish or pale brown to brown above, uniform, but more usually with darker margins to the scales and



sometimes with scattered, small reddish to dark brown spots, especially on the sides of the body. Usually a conspicuous dusky to blackish bar on either side of the head, from nostril to anterior temporal region. Upper-lip creamy white to pale brown. Below creamy to yellowish white, uniform or scales edged with brown except on chin and throat. Snout obtusely pointed and distinctly hooked in profile.

Lepidosis: A large thick-bodied snake with a small head narrower to as wide as the neck and a short tail. Rostral obtusely pointed and distinctly hooked in profile; internasals broader than long but shorter than prefrontals; preoculars 2 to 3; postoculars 2-4; eye moderate and pupil rounded; a pair of enlarged, grooved, poison fangs in the upper jaw below the eye; loreal present; dorsal scales smooth, overlapping and in 17 rows at midbody. Ventrals variable 148-194, usually 158-186 (Broadley, 1983); anal scale divided; subcaudals 87-118, usually 92-105.

Size: Broadley (1983) records a mean total length of 1,3 m for adults although he mentions males reaching 1,57 m and females attaining 1,49 m in Zimbabwe. No measurements of this species were made during the course of the survey.

Distribution

From Somaliland and Sudan south to Tanzania, Malawi and Mozambique, also Zimbabwe and the northern and eastern Transvaal.

Distribution in the Transvaal (Map 151).

Bandur Halt; Celine 547MS; Dunani; Hoedspruit; Manyeleti Game Reserve; Manyeleti Game Reserve,

Hermitage; Messina 4MT; Mopani 527MS; Phalaborwa;
River 141MS; Shaholle, Gravelotte; Shamela;
Shlaralumi; Silwana's Location 719LT; Skukuza; Suzette
32MT; Verbaard 53MT; Vivo; Voorwaarts 28MT.

Literature Records

Komatipoort; Mara; Pafuri (FitzSimons, 1962); on road
to Gorge camp near Hlahleni drift; W.N.L.A. quarters,
Pafuri; Madziringwe firebreak; near Shalungwa turn-off;
6,4 km north of the Sand river bridge, on main road;
west of Hape pan, Letaba quarters; Manceva picket;
Mlambane drift; Shithlave; new tarred road north of
Luvuvhu river 10-12 km; Shingwedzi rest camp (Pienaar et
al, 1983).

Habitat and Ecology

Usually found in arid areas and sandy country, it is
found in veld types 10, 11, 14 and 15 at altitudes
between 200-700 m. a.s.l. Inhabit rodent burrows and
large termitaria. A slow moving snake, it feeds on
amphibians, small rodents and shrews, and also other
snake species as well as lizards. Broadley (1983)
includes beetles in their diet. Oviparous, Broadley
(1983) records clutch sizes of 8 to 17 in number,
measuring 34,0 - 40,0 x 20,0 - 22,0 mm which are
apparently laid at intervals over a few days.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature
Conservation Ordinance 12 of 1983. An uncommon species
in the Transvaal and limited to the north and east in
relatively low-lying country. Occurs in the Kruger

National Park and likely also in several provincial nature reserves. Populations of this snake are indeterminate and in need of density studies and monitoring. Most of its habitat is used for livestock production and is therefore secure.

Remarks

The isolated record on Map 29 (Broadley, 1983) is erroneous as the specimen referred to is that of Psammophylax tritaeniatus (Günther).

Genus Psammophis Boie, 1825

Psammophis Boie, 1825, in Oken, Isis, 19, col. 982.
Type: Coluber sibilans Linnaeus.

Small to large snakes characterised by a slender body and long to very long tail. The head is distinct from the neck with well developed eyes and rounded pupils associated with a diurnal life style. Two enlarged, grooved fangs are found on the maxilla, below the posterior border of the eye. The body is cylindrical and covered with smooth, overlapping dorsal scales in 11 to 19 rows at midbody; ventrals smooth. Anal scale divided or entire. Tail long, with two rows of subcaudals. Oviparous. Seven species are found in the Transvaal, and the possibility of notostictus occurring there cannot be excluded, (see map 31, Broadley, 1983).

All species are largely terrestrial although some will take refuge in trees or shrubs (P. s. subtaeniatus and P. phillipsii). Branch (1988a) remarks that two species (P. schokari and P. sibilans) polish themselves with a nasal gland secretion. This phenomenon seems widespread among the Psammophis taxa as many species exhibit this behaviour.

Broadley (1987b) investigated caudal autotomy in the genus showing it to be a common phenomenon. Certain species were more inclined to this escape behaviour than others. A puzzling feature of some members of this genus is the remarkable low densities at which they are able to survive. This is especially true of P. angolensis and P. jallae. On the Nylsvley nature reserve in sandy deciduous Burkea africana woodland only two of the former and five of the latter were found during more than two years of monitoring activity (Jacobsen, 1977, 1982). In both species the sandy Burkea woodland was the only habitat occupied by these snakes.

Key to the Transvaal species.

1. Dorsal scales in 17 rows at midbody 2
Dorsal scales in less than 17 rows at
midbody 5

2. Posterior nasal usually divided, the upper
portion with a distinct posterior prolongation;
preocular usually in broad contact with
frontal P. leightoni trinasalis
Posterior nasal usually entire; the upper
portion without a distinct posterior prolongation;
preocular usually well separated from frontal 3

3. Ventrums with a pair of almost continuous well
defined black lines, yellow between them, ends of
ventrals white P. subtaeniatus subtaeniatus
Ventrums without a pair of well defined lines,
occasionally with a pair of interrupted dark grey
lines. Ventrums white, whitish or yellow to
orange 4

4. Dorsum olive-brown, uniform or with black-edged
scales forming narrow black longitudinal lines
or with scattered black scales anteriorly;
ventrum yellow or white, uniform or with paired
rows of blackish lateral spots or irregular black
speckling; Upper and lower labials with distinct
to faded ocellar spots; ventrals usually more
than 164; maximum length about 1900 mm P. phillipsii
Dorsum with a pair of pale dorsolateral
stripes and traces of pale ventral bars on neck,
or a pale chain-pattern anteriorly, or uniform
brown or grey-brown; ventrum uniform white,

yellow to orange, if white then two rows of grey
to grey-black interrupted lines present;
ventrals usually less than 164; maximum length
about 1100 mm P. sibilans brevirostris

5. Dorsals scales in 15 rows at midbody 6

Dorsal scales in 11 rows at midbody P. angolensis

6. Posterior nasal usually divided, the upper
portion with a distinct posterior prolongation;
preocular in broad contact with frontals;

Subcaudals 97-109 P. jallae

Posterior nasal entire, without a prolongation;
preocular usually separated from frontal;

Subcaudals less than 90 P. crucifer.

Psammophis leightoni trinasalis Werner, 1902

Psammophis sibilans trinasalis Werner, 1902, Verh. Zool.
Bot. Ges. Wien, 52, p. 340. Type locality: Windhoek,
South West Africa/Namibia. FitzSimons, 1962, p. 231,
pls. 24 & lii, 1966, p. 60.

Psammophis leightoni trinasalis Werner. FitzSimons 1970/
74, p. 138; Broadley, 1975a, p. 12, fig. 56, 1977d, p.
10; Pienaar 1978, p. 172, pls. 78 & 78A; De Waal, 1978,
p. 109; Broadley, 1983, p. 135, fig. 82; Pienaar et al,
1983, p. 162, pls. 70 & 70A; Auerbach, 1987, p. 167;
Branch, 1988a, p. 71, pl. 23, 1988b, p. 13.

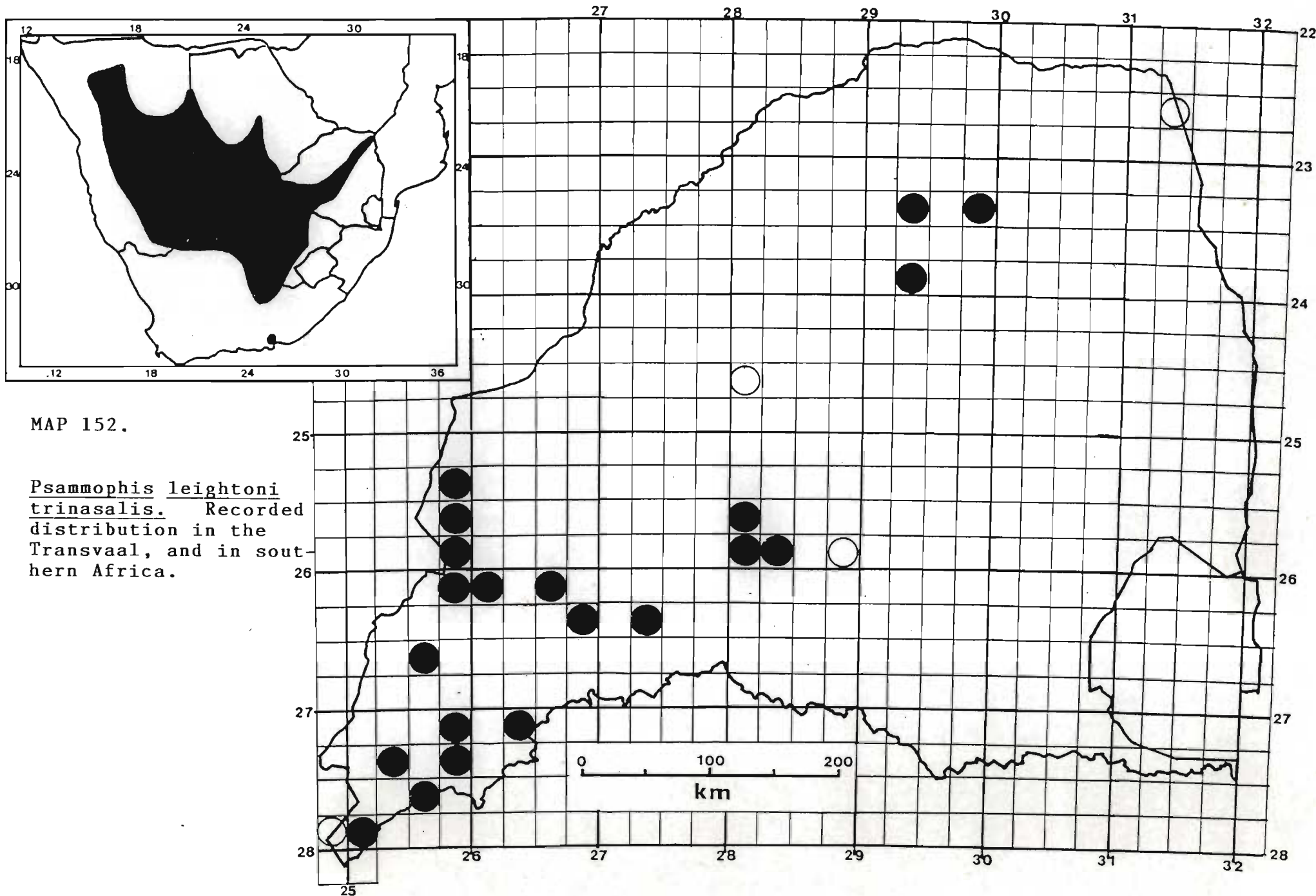
Diagnosis. 33 Specimens examined.

Colour: Above olive to olive grey, greyish, reddish to
light brown, with each scale edged or tipped with dark
brown or black (occasionally so aggregated as to give an
effect of barring). Sometimes scales are unmarked. A
white to yellowish dark-edged vertebral line or series of

spots arises on the nape and extends to the basal half of the tail. A well-marked pale lateral stripe on either side, dark-edged above and sometimes also below. Head characteristically marked with light, dark-edged lines as follows: A median line on the snout and a pair of lines further back along the head and a light stripe on either side of the head, extending from just above the nostril backwards above the eyes and across to the temporal region. This gives the impression of a two-pronged fork - hence the popular name. Upper-lip white. Below white to yellowish, uniform or with a more or less defined yellow to olive or bluish grey band down the centre of the belly. Chin, throat and anterior ventrals are in addition, flecked or vermiculated, or streaked with bluish grey to black.

Lepidosis: A long slender snake, with the head distinct from the neck and a long slender tapering tail. Snout rounded, rostral as broad as, to broader than deep; Nostril pierced along suture between nasal and two postnasals; preocular 1, in broad contact with frontal; UL 8-9 with 4th and 5th exceptionally 3 & 4 or 5 & 6, in contact with the orbit; eye large, with a round pupil. Dorsal scales smooth and imbricate, in 17 rows at midbody; Ventrals 150-175; anal scale divided; subcaudals 84-120.

Size: A small to medium sized species. Largest male SVL = 500,0 mm (N9658 - Matjiespruit 19HP), mass = 43,0 g (N9658); Largest female SVL = 570,0 mm (N5947 - Syfergat 204HO), mass = 53,0 g (N5947); Mean male SVL (250,0 mm) = 354,87 mm \pm 81,95 (1SD), n = 8, mass = 17,19 g \pm 12,97 (1SD), n = 8; Mean female SVL (250,0 mm) = 417,2 mm \pm 133,40 (1SD), n = 5, mass = 24,34 g \pm 19,02 (1SD), n = 5. The tail is contained in total length 3,25 to 4,14 which is higher than that recorded by Broadley (1983).



Distribution

South West Africa/Namibia through Botswana, the northern Cape Province, Orange Free State and the Transvaal. Probably also Mozambique.

Distribution in the Transvaal (Map 152).

Abe Bailey Nature Reserve; Amsterdam 116LS;
Bandelierkop 416LS; Barberspan Nature Reserve;
Bloemhof; Boschrand 158HO; Bultfontein 92JO; De Putten
56JO; Houthaaldoorns 2IP; Houtkop 152IP; Irene;
Kareefontein 340HO; Lyttelton 381JR; Matjesspruit 19HP;
Matlabas Location; Moilwas Location; Pretoria;
Pretoria, Daspoort; Pretoria, Mayville; Prospect 315HO;
Suikerbosrand Nature Reserve, Keyterskloof; Syfergat
204HO; Ventersdorp Dorpsgebied; Vuurfontein 117HO;
Zaailand 662LS; Zwartkop 356JR.

Literature Records

Andalusia; Pretoria, Wonderboom, (FitzSimons, 1962).
Balmoral; Doornkop; Sekhukune mountains, (Broadley,
1975). Nyandu firebreak, about 6,4 km south of Malonga
(represents the most eastern point of distribution of the
species) (Pienaar et al, 1983). Pretoria, Kaalplaats
(NMZB).

Habitat and Ecology

The species occurs diagonally from the south west to the north-east of the Transvaal inhabiting veld types 15, 16, 19, 48, 50, 61 and 67 at altitudes ranging from 200 to 1700 m a.s.l. Most common in the south-western Transvaal, it is usually found in moribund termitaria in grassland, more rarely under a rock on soil. Frequently also found moving about during the day. In moribund

termitaria it may be found in the company of other snakes including in one instance 2 Dasypeltis scabra., 1 Crotaphopeltis hotamboeia and 1 Psammophylax tritaeniatus and on another 2 P. l. trinasalisis and 1 Lycophidion capense.

The species feeds mostly on lizards including Mabuya varia and M. variegata and rodents. De Waal (1978) records finding a juvenile Pseudaspis cana in the stomach of an O.F.S. specimen. Like other members of the genus Psammophis, this species is oviparous.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. The species does occur in the north-eastern Kruger National Park and two or more provincial nature reserves. However densities appear to be low, and more details regarding population densities are needed. The importance of moribund termitaria cannot be over emphasised in the southern parts of its range. This may in fact be a density determining factor. The species is uncommon over most of its range, but more frequent in the south-west. The species requires conservation action.

Remarks

Broadley (1975a) shows the variability of this snake from area to area particularly in respect of the subcaudals, which may also be reflected in the ratio of tail length to total length. The ventrals are less variable with the exception of the South West Africa/Namibia population. One specimen (N9658 - Matjesspruit 19HP) may be a hybrid between P. l. trinasalisis and P. s. subtaeniatus but this needs further investigation. Broadley (1987b) recorded caudal autotomy in 38,2% of P. l. trinasalisis examined.

Only 2/33 (6,06%) of Transvaal specimens had truncated tails.

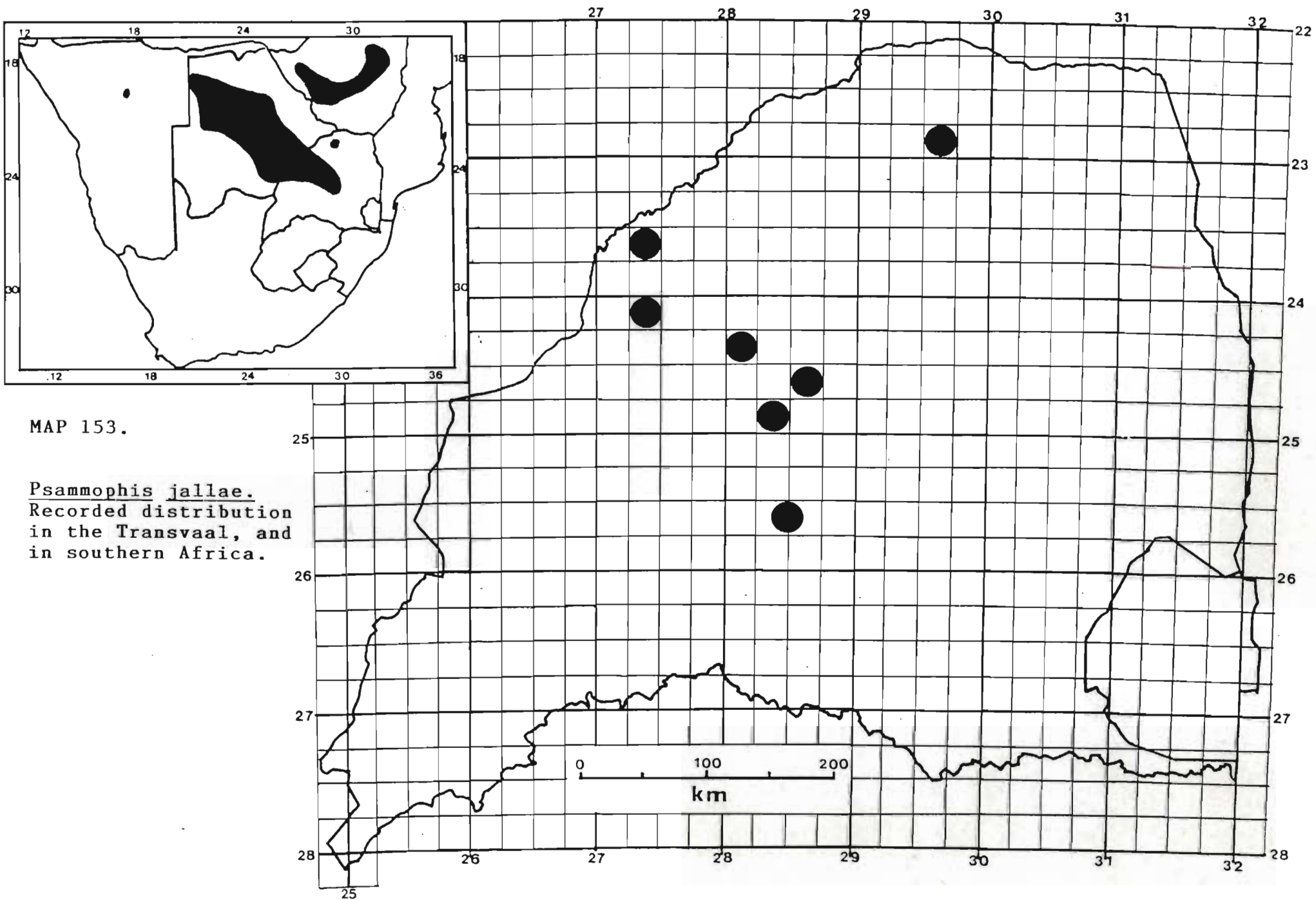
Psammophis jallae Peracca, 1896

Psammophis jallae Peracca, 1896, Boll. Mus. Zool. Torino, 11, 255, p. 2, figs. Type locality: Kazungula to Bulawayo. FitzSimons, 1962, p. 237, 1966, p. 61, 1970/74, p. 139/142; Broadley, 1977(d), p. 12; Jacobsen 1977, p. 33; Jacobsen & Haacke, 1980, p. 53; Welch, 1982, p. 169; Broadley, 1983, p. 138, figs. 85-87, pl. 32; Auerbach 1987, p. 167; Branch, 1988a, p. 72, pl. 23, 1988b, p. 13.

Diagnosis. 11 Specimens examined.

Colour: Light grey to greyish olive or greyish brown above. Scales may be black edged in light coloured specimens. There is usually a darker, black edged dorsal band extending from behind the head and bounded on either side by a narrow white to yellowish streak or stripe. Sides of body buffy to reddish brown. Occasionally an interrupted vertebral series of elongate, yellowish spots anteriorly passing to black posteriorly. Head with yellowish, dark edged streaks, a median one on the snout and a lateral one on each side above eyes. Lips yellowish white, and black edged on the upper border and spotted below. Chin and throat spotted with black in varying degrees. Belly has a broad yellow to olive yellow midventral band, usually present with or without an interrupted darker edging. Outer ends of ventrals white.

Lepidosis: A small relatively slender snake with the tail greatly elongated. Head distinct from the neck. Snout and head narrow and moderately pointed. Rostral as broad as, to a little broader than deep; nasals 3, the nostril pierced between nasal and two postnasals; preoculars 1, in contact with the frontal; eye large, with a round pupil; UL 7 with 3rd and 4th in contact with the orbit; LL 9. Body covered in smooth, imbricate scales, in 15 rows at midbody. Ventrals 154-175;



anal scale divided; subcaudals 84-112.

Size: Largest male SVL = 586,0 mm (N2407 - Zandbult 300LQ), mass = 45,8 g (N2407); Largest female SVL = 544,0 mm (J1916 - Klipfontein 11KQ). The tail is contained in total length 3,05-3,29 times and is therefore longer in relation to total length, than is P. l. trinassalis.

Distribution

From south-eastern Angola and northern South West Africa/Namibia eastwards through western Zambia, south-western to north eastern Zimbabwe, Botswana and the north-western Transvaal.

Distribution in the Transvaal (Map 153).

Klipfontein 11KQ; Kliprivier; Nylsvley Nature Reserve; Vaalwater; Vygeboomspoor 456KR; Waterberg District; Waterpoort; Zandbult 300LQ.

Habitat and Ecology

A rare peripheral species occurring on Kalahari sands in open woodland in veld types 14, 18, 19 and 20 at altitudes of 750-1000 m a.s.l. Usually observed foraging for lizards especially lacertids, its principal prey. It also ascends shrubs in order to bask or aestivate as well as to escape predators.

Very little is known of this snake, as it occurs in very low densities and is not often encountered. Like most species of Psammophis, if startled it is quick to get away, but only moves a short distance before halting and remaining motionless to avoid detection.

Conservation Status (RDB 1988, peripheral)

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A rare snake with a limited distribution in the Transvaal. On the Nylsvley nature reserve it appears restricted to the Burkea africana woodland on sandy soils where its density is extremely low. However most of its distribution range in the Transvaal falls in areas primarily used for livestock and game production. It is therefore considered secure but population densities need to be obtained and the species monitored.

Remarks

Broadley (1987b) recorded caudal autotomy in P. jallae, showing that 38,5% of snakes examined had truncated tails.

Psammophis subtaeniatus subtaeniatus Peters, 1882

Psammophis sibilans var. subtaeniata Peters, 1882, Reise n. Mossamb 3, p. 121 (part). Type locality: Tete, Mozambique, restricted by Broadley, 1966c.

Psammophis subtaeniatus subtaenitatus Peters. Fitz-Simons 1962, p. 223, 1966, p. 60, 1970/74, p. 135, pl. 17(1); Broadley, 1966c, p. 7; Pienaar, 1966, p. 186, 1978, p. 169, pl. 76; Broadley 1977d, p. 13; Jacobsen & Haacke, 1980, p. 53; Welch, 1982, p. 170; Broadley, 1983, p. 140, figs. 88 & 89, pl. 33; Pienaar et al, 1983, p. 164, pls. 71 & 71A; Auerbach 1987, p. 168, pl. 16, fig. 1; Branch 1988a, p. 72, pl. 22, 1988b, p. 13.

Diagnosis. 111 Specimens examined.

Colour: Above, greyish olive to olive or olive brown, with a broad black-edged dorsal band. Below this, on either side, a creamy to yellowish dorsolateral stripe which is succeeded below by a dark brown lateral band with the lower edge bounded by a black line or streak. Head with pale dark-edged markings above, forming a series of transverse bars or bands on back of head and nape. Upper-lip creamy white with black spots and edged above by a black line. Chin and throat creamy white to yellowish, immaculate or more frequently spotted with black. Below a broad yellow band bounded on either side by a distinct line from throat to anterior part of tail. This black line adjoins a white band on either side of the body.

Lepidosis: A medium sized snake, slender with a long tail. Head elongate and distinct from neck. Rostral broader than deep; nasals 2 (rarely 3), nostril pierced along suture between the nasal and postnasal; preocular 1, in contact or separated from the frontal; loreal 1, elongate; UL 9 rarely 8 (13/59) with 4th, 5th and 6th (rarely 4th & 5th or 5th and 6th only in contact with the orbit; LL 10 rarely 9 or 11; eyes large, pupil round. Dorsal scales smooth and overlapping, and in 17 scales rows at midbody; ventrals 155-181; anal scale divided; subcaudals 106-132.

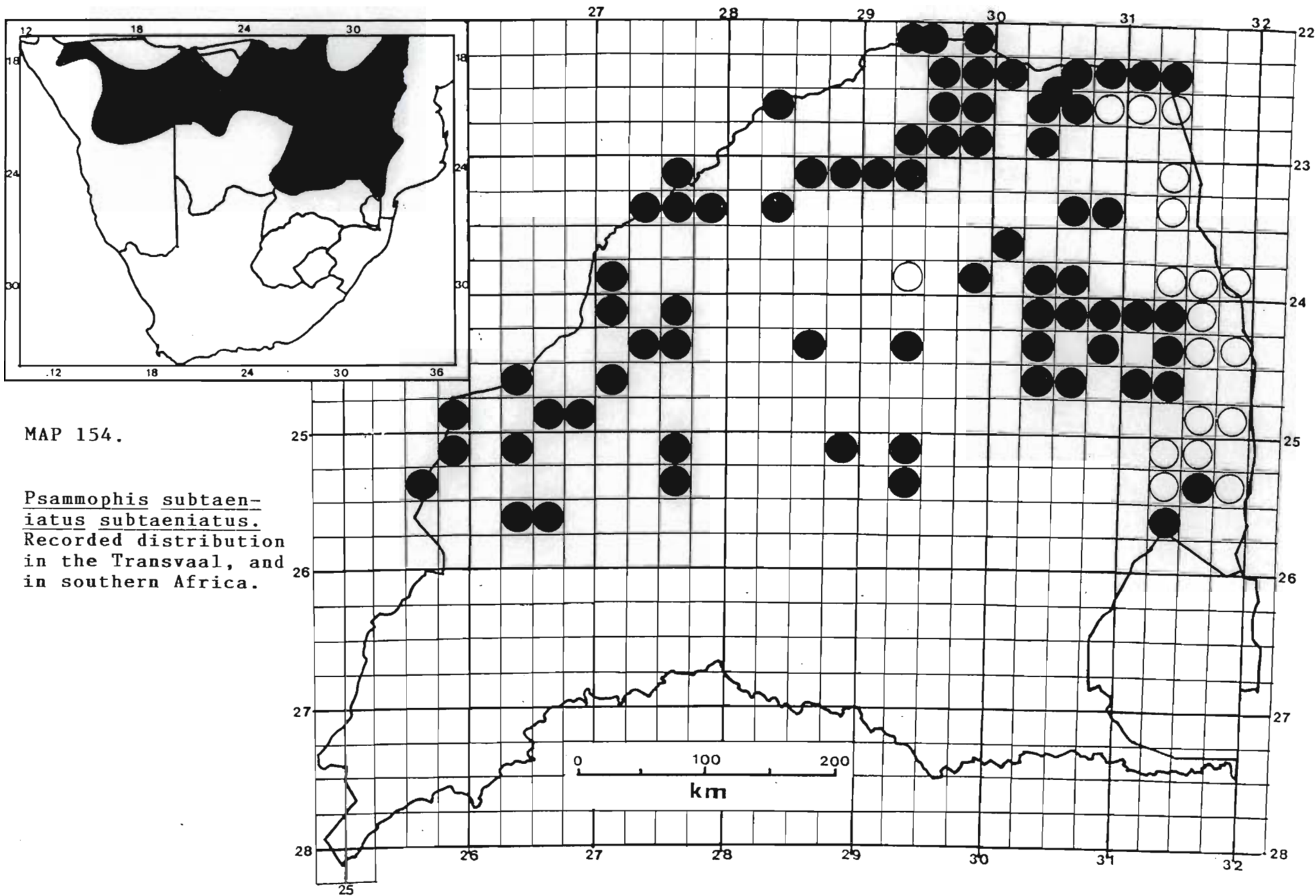
Size: Largest male SVL = 674,0 mm (J4774 - Keulen 669LT), mass = 96,3 g (J4774); Largest female SVL = 736,0 mm (J6723 - nr Shabaku), mass = 153,0 g (N7537 - River 141MS). Mean male SVL (350,0 mm) = 546,72 mm \pm 91,48 (1SD), n = 18, mass = 47,24 g \pm 24,19 (1SD), n = 19; Mean female SVL (350,0 mm) = 560,75 mm \pm 106,22 (1SD), n = 18, mass = 61,44 g \pm 41,09 (1SD), n = 18. Length of tail from 2,71 to 3,14 times into total length.

Distribution

Southern and south-eastern Zambia south to Zimbabwe, adjacent Mozambique and northern Transvaal westwards through the northern part of Botswana to northern South West Africa/Namibia and southern Angola.

Distribution in the Transvaal (Map 154).

40 km NE of Sibasa; Allandale 237KU; Altever 103MR; Ameland 11LS; Archie 156KT; Arundel 788LT; Backwood 348LQ; Barend 523MS; Blaauwkop 514MS; Blackhill 317LR; Bordeaux 555MS; Botsabelo, Middelburg; Bristol 760MS; Busizi Hills; Constantia 122LQ; Crimea 747MS; Dongola; Doreen 108MT; Drinkpan 301KQ; Eendracht 95LQ; Flamingopan 40KQ; Fleur-de-Lys 194KU; Glen Alpine 304LR; Gravelotte 783LT; Griffin Mine, Leydsdorp; Groeneboom 236KP; Groot Marico; Harmony 140KT; Hartebeestpoort E 215JQ; Hectorspruit 164JU; Hoedspruit Air Base; Houtbosch River, 20 mls from Naboomspruit; Houtbosdorp; Impala 486JU; Kalkheuwel 454MS; Kareehoek 274KQ; Karoobult 126KQ; Keulen 669LT; Khavagari Mountain; Killaloe 235MS; Klein Tshipise; Kloppersdam 187JR; Lake Fundudzi, near; Lilliput Station; Loskopdam Nature Reserve; Louws Creek 271JU; Madimbo; Madrid; Malala Drift 83MT; Malmaniesrivier 236KQ; Malta 32KT; Manyeleti Game Reserve, Albatros; Manyeleti Game Reserve, Main Camp; Mazila 97LR; Messina 4MT; Messina Landbou Proefplaas; Messina area; Mogomane Hill; Moilwas Location; Mokeetsi 376LT; Mopane Station; Morgenrood 354LT; Njelele River; Nooitgedacht 17JP; Northumberland 31KU; Pafuri; Paris 206KT; Parkfield 725MS, Wyliespoort; Penge 108KT; Rainpan 60KQ; Ritavi 2, Mmanopi; River 141MS; Rochdale 700MS; Rolle 23KU, Thulemahashi; Rooibokbult 330LQ; Rooiboklaagte 112KS; Ross 55KU; Rustvoorby 383KJP;



Schelem 65KT; Shabaku; Shlaralumi; Smaldale 225KP;
Streatham 100KT; Strydfontein 442KT; Timbavati Nature
Reserve, Sohobele; Trekpad 455MS; Trevenna 119MT;
Uitspan 65LQ; Van Collers Pass, Waterpoort; Van
Tondershoek 10KO; Vhembe; Viljoenshoop 299KT; Weipe
47MS; Wolvenkraal 13JS; Wonderfontein 258JP; York
188KT; Zoutpan 459MS; Zuni Zuni 96KP.

Literature Records

Boulders; Komatipoort; Leydsdorp; Mara; Pietersburg,
(Broadley, 1966). 27 km S. Tzaneen, on Tzaneen/Strydom
Tunnel road (Lambiris, 1988b). Kingfisherspruit; Sabie-
poort; Hape hill, Pafuri; Skukuza; Olifants river
cataracts; Letaba camp; Shingwedzi; Matukwane ridge,
Punda Maraia; Olifants camp; Dzundwene hill;
Makahanja ridge, Luvuvhu river; Shahulu spring area;
Ship Mountain; eastern boundary at Olifants river gorge;
main road near W.N.L.A. quarters. Pafuri; eastern
tributary of Bangu spruit, Lebombos; Klawerpan; near
Letaba river drift to Mala-Mala; Mooiplaas between
Mahembane and Magovane; between Bvummunyundu and
Mapangu-drift (western boundary); Mala-Mala ranger's
quarters; Malonga spring; Satara; Tshokwane; Stolznek
ranger's quarters; Boesmanklip dam site (Pienaar et al,
1983). Makalali 167KT (NMZB).

Habitat and Ecology

Widespread in the bushveld and lowveld areas being found
in veld types 9, 11, 13, 14, 15, 16, 18, 19 and 20 at
altitudes ranging from 200-1400 m a.s.l. An agile,
diurnal snake it is commonly found on rocky hillsides
foraging, or in crevices between rocks and in large
moribund termitaria (Macrotermes), under the bark of
trees or dead logs and boulders. Frequently takes refuge

in bushes if startled or pursued and lies very quiet up to 1,2 m above the ground. A fast moving snake in search of prey. Feeds mainly on lizards, records including Agama aculeata, Gerrhosaurus flavigularis juv., Mabuya varia and M. s. punctatissimus and rodents. Oviparous from 4-10 eggs measuring approximately 32,0 x 12,0 mm are laid during summer. Hatchlings measure 185,0 mm SVL with a mass of 2,3 g.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Common in the extreme northern and eastern Transvaal lowveld, it is widespread in the Kruger National Park and also occurs in several provincial nature reserves. Its habitat is largely secure and the species is in no immediate danger.

Remarks

Broadley (1977d, 1983) discusses hybridization between this species, P. jallae and P. phillipsii, while a possible hybrid between this species and P. l. trinasalis was discussed under that species. A specimen (J1446 - Ameland 11LS) overlaps with P. s. orientalis Broadley in possessing 8 UL with 4th and 5th in contact with the eye. Unfortunately only the head and neck is available. Many other specimens exhibit 8 UL on one side and 9 on the other (22%). Additional work is required to establish whether orientalis is present in the Transvaal.

Psammophis sibilans brevirostris Peters, 1881

Psammophis brevirostris Peters, 1881, Sitzber. Ges.

Naturf. Freunde, Berlin, p. 89. Type locality: Matlale Mission, near Pietersburg, Transvaal.

Psammophis sibilans sibilans (not Linnaeus). FitzSimons 1970/74, p. 136, pl. 18, fig. 1.

Psammophis sibilans brevirostris Peters. Broadley 1977d, p. 19, pl. iii; Jacobsen 1977, p. 33; Jacobsen & Haacke 1980, p. 50; Welch 1982, p. 170; Broadley 1983, p. 144; figs. 90 & 91; Auerbach 1987, p. 169, pl. 16, figs. 2 & 3; Branch 1988a, p. 72, pl. 34, 1988b, p. 13.

Diagnosis. 186 Specimens examined.

Colour: Variable, ranging from yellowish olive to greyish olive, olive to olive brown or brown above, uniform or more often darker on the back with a narrow, yellowish or white vertebral streak. Scales often dark-edged and the sides of the body paler than above. Head may be uniform or with red-brown markings. Lips are yellowish white and usually with dark irregular spots. Below creamy to yellowish or greenish white, bluish - to lead grey, or bright yellow, uniform or with dusky brown to bluish lateral line of dashes or spots, or a continuous line on either side. Chin and throat often marked with irregular dark, pale-centred spots. Iris varies from buff to pale brown, russet or brown.

Lepidosis: A medium slender to moderately stout snake with a long tapering tail. Head elongate and distinct from the neck. Nostril pierced between 2 nasals; loreal elongate; preocular 1, usually separated from frontal (rarely in narrow contact); supralabials 8, (rarely 6, 7 or 9) 4th and 5th entering the orbit; infralabials 10 (rarely 9 or 11), the first 4 (rarely 5) in contact with the anterior sublinguals. Dorsal scales smooth, imbricate and in 17 rows at midbody; ventrals 152-168; anal scale divided; subcaudals 79-108.

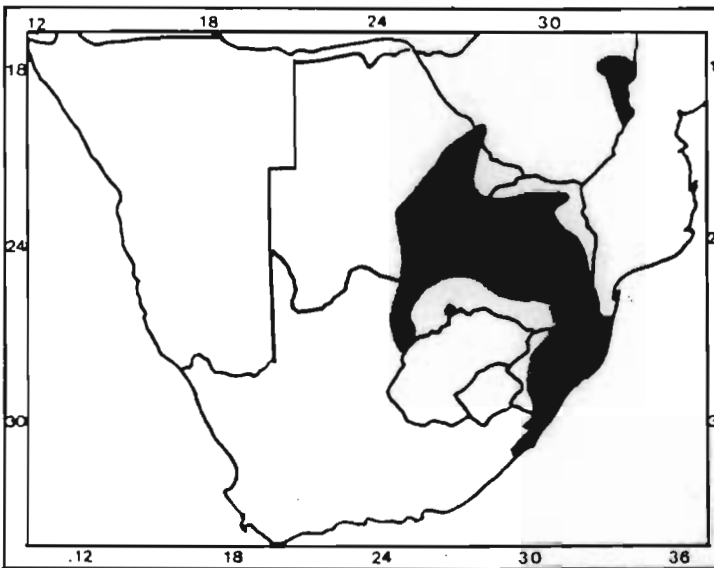
Size: Largest male SVL = 790,0 mm (N9017 - Aden lKT), mass = 212,0 g (N8285 - Zwartkrans 172IQ); Largest female SVL = 720,0 mm (N9016 - Aden lKT), mass = 170,0 g (N9016). Broadley (1977d) records a male from Pretoria measuring 780,0 + 360,0 mm = 1140,0 mm. Mean male SVL (350,0 mm) = 572,61 mm \pm 121,85 (1SD), n = 23, mass = 79,80 g \pm 59,53 (1SD), n = 23; Mean female SVL (350,0 mm) = 529,71 mm \pm 84,77 (1SD), n = 17, mass = 56,58 g \pm 33,29 (1SD), n = 17. Length of tail goes into total length from 2,93-4,49 times (most between 3,11 and 3,52).

Distribution

Transvaal (except the lowveld and Limpopo basin, south west and most of the south-eastern highveld), south-eastern Botswana, northern Cape Province, Swaziland, south-west Mozambique, KwaZulu, Natal and the Transkei. There are relict populations in Zimbabwe.

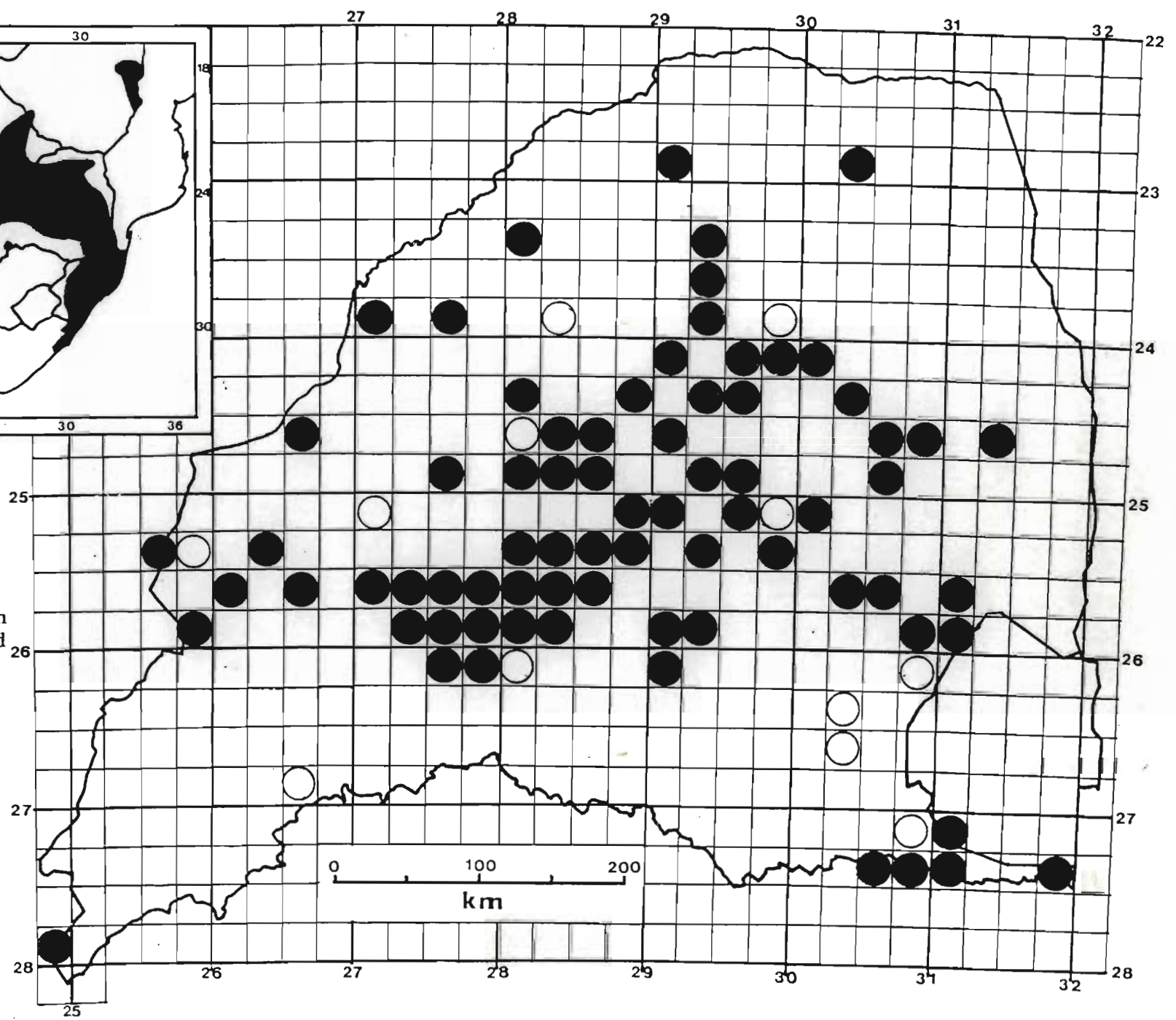
Distribution in the Transvaal, (Map 155).

14 km from Zeerust; 15 km south west of Pretoria; 24 km Pongola to Mkuze; 24 km Rustenburg - Swartruggens; 35 km from Pongola to Piet Retief; Aden lKT; Amsterdam 116LS; Barberton Townlands 369JU; Bendor 211HT; Bloempoort 39JS; Blyde River Nature Reserve; Boekenhoutskloof; Boekenhoutskloofdrift 286JR; Boschkom 272JT; Boschpoort 284JQ; Broederstroom 481JQ; Buffelspruit 443KR; Bultfontein 92JO; California 228KT; Crocodile river, Rustenburg; Crossroads; Cullinan; De Kroon 442JQ; De Kroon, Brits; De Wagendrift 79JS; Diepkloof 44JS; Dome Pools, Magaliesberg, Rustenburg; Entabeni 251MT; Eureka City; Garstfontein 374JR; Gembokfontein 199JR; Gewenscht 562KS; Goed Geluk 444JT; Gopane Mine; Groenkloof 358JR; Grootboek 106KS;



MAP 155.

*Psammophis sibilans
brevirostris.*
Recorded distribution
in the Transvaal, and
in southern Africa.



Grootvlei 160KP; Hammanskraal; Hardekoolbult 548KQ;
Hartebeespoortdam; Hennopsrivier 489JQ; Holfontein
126KT; Jaagbaan 291KR; Kaalplaats 451MS; Kalkgat
554LS; Kameelpoort 202JR; Klipfontein 429JR;
Krokodilspruit 290JR; Kromdraai 115JR; Kromrivier
347JQ; La Belle Esperance 191HT; Langbaken 342KS;
Leeuwoorns 607KR; Leeuwoort 373KR; Lindleyspoort
220JP; Loskop Suid 53JS; Manyeleti Game Reserve,
Hermitage; Mapochsgronde 500JS; Marble Hall 29JS;
Marble Hall, Fisheries; Mariepskop 420KT; Matlapitsi
River; Melinda 164LR; Morgendal 216KS; Nooitgedacht
471JQ; Nylsvley Nature Reserve; Ohrigstaddam Nature
Reserve; Oshoek 69JT; Pelindaba; Percy Fyfe Nature
Reserve; Pietersburg; Planknek 43KS; Pongola Nature
Reserve; Potgietersrus; Pretoria; Pretoria North;
Pretoria, Bon Accord; Pretoria, Crocodile River Pleasure
Resort; Pretoria, Danville; Pretoria, Daspoort;
Pretoria, Derdepoort; Pretoria, Fountains; Pretoria,
Gardens; Pretoria, Garstfontein; Pretoria,
Hartbeeshoek; Pretoria, Hatfield; Pretoria, Hornsnek;
Pretoria, Meintjieskop; Pretoria, Meyerspark; Pretoria,
Montana Estate; Pretoria, Mooiplaats; Pretoria,
Moreletta Park; Pretoria, Murrayfield; Pretoria,
Olympus; Pretoria, Onderstepoort; Pretoria, Rietondale;
Pretoria, Rosslyn; Pretoria, Sandfontein; Pretoria,
Silverton; Pretoria, University; Pretoria, Waterkloof
Air Base; Pretoria, Willow Glen; Pretoria, Wonderboom;
Pretoria, Wonderboom Suid; Pretoria, Zwartkop;
Rietfontein 214JR; Rietvallei 180IQ; Rietvlei Dam,
Pretoria; Roodeplaatdam Nature Reserve; Rustenburg;
Rustenburg Nature Reserve; Slangfontein 641LQ;
Smithfield 44IS; St. Agnesfontein 347LQ; Swadini;
Syferfontein 76JP; Tjakastad 730JT; Tuinplaats 678KR;
Umkoonyan 42HU; Vaalharts Settlement A; Vaalwater;
Vlakplaats 535KS; Vygeboomspoort 456KR; Weltevreden

822KS; Willemsoord 476KT; Witbank Munisipaliteit;
Witklip 100KR; Wolhuterskop 452JQ; Zandfontein 317JR;
Zandspruit 189JR; Zoutpan 104JR; Zwartkrans 172IQ.

Literature Records

Serala 5KT, (Snyders, 1987). Andalusia; Bankop,
Johannesburg, Bryanston; Comondale; Irene;
Klerksdorp; Linokana; Lochiel; Lothair; Loubad;
Machadodorp; Magaliesberg; Middelburg; Moepel;
Mphome; Nylstroom; Piet Retief; Pilansberg;
Sheepmoor; Tautesberg; Zeerust (FitzSimons, 1962).
Malta 65K (NMZB).

Habitat and Ecology

A widespread, diurnal snake equally at home in highveld grassland and bushveld in veld types 6, 8, 10, 12, 14, 18, 19, 20, 57, 61, 63 and 64 at altitudes between 700 and 2000 m a.s.l. Usually observed while foraging, being very quick-moving and agile, actively pursuing prey mainly lizards, including lacertids, and rodents. Take refuge in holes in the ground and under rocks on soil, rarely in crevices, and on the highveld, in moribund termitaria. Feeding records include Mabuya varia, M. striata punctatissimus, Ichnotropis capensis, Gerrhosaurus flavigularis and Praomys natalensis.

The species is oviparous laying up to 15 eggs (usually less than 10) measuring 28,0-40,0 mm x 10,0 -14,0 mm. Hatchlings measure 196,0 to 275,0 mm total length. Two clutches may be laid per season usually during midsummer. Caudal autotomy occurs frequently in this species. If captured by the tail and held dangling it will rotate on its long axis, thereby twisting its tail off. Broadley (1987b) observed that 29,2% of 195 snakes which he examined exhibited truncated tails.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. A common species it occurs in several provincial nature reserves. It is under no immediate threat.

Remarks

Broadley (1977d) remarks on the great degree of colour variation, which in past was attributed to P. phillipsii x brevirostris hybrids, quoting an example of LR772 and 13 hatchlings LR579-591 which also had a greater range of ventrals than that attributed to brevirostris. A female from Pretoria laid 7 eggs which when hatched exhibited a range of colour patterns from plain brown to pronounced stripes. Colour is therefore of limited use with the exception of the head pattern which appears to be diagnostic, particularly the ocellated spots under the chin and the lack of vertical bars in phillipsii. Hybridization implies a break down in interspecific relationships. While this may appear in captivity, in the wild the chances of hybridization must be very small and hybrids exceptional. Only controlled breeding experiments will elucidate this phenomenon and give insight into the range of characters permissible in a species.

Psammophis phillipsii (Hallowell), 1844

Coluber Phillipsii Hallowell, 1844, Proc. Acad. nat. Sci. Philadelphia, p. 169. Type locality: Liberia.

Psammophis phillipsii (Hallowell). Broadley 1977d, p. 24, pl. iv, 1983, p. 145, fig. 92, pl. 34; Pienaar

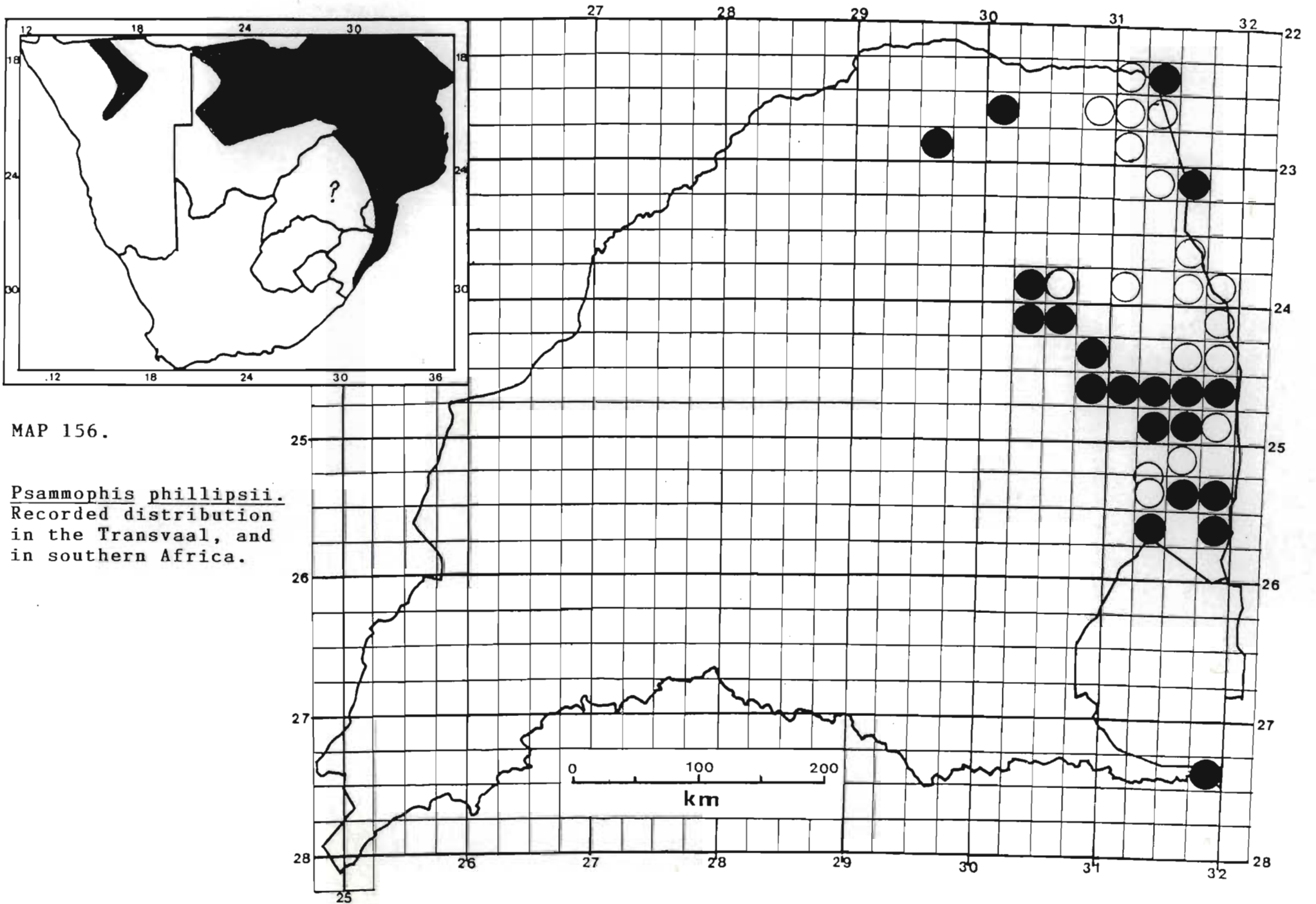
1978, p. 170, pl. 77; Welch 1982, p. 170; Pienaar et al, 1983, p. 167, pl. 72, Auerbach, 1987, p. 170; Branch 1988a, p. 73, pl. 23, 1988b, p. 13.

Diagnosis: 47 Specimens examined.

Colour: Dorsum olive brown to brown, often paler and yellowish posteriorly, uniform, or with black-edged mid-dorsal scales forming longitudinal lines, or with irregularly scattered black scales on the neck. Head rarely uniform often with a symmetrical chestnut brown pattern. Labials and chin shields are usually adorned with dark (often chestnut) ocelli, one on each shield and most prominent anteriorly. Ventrums yellow or white more rarely dark below, uniform or with lateral rows of black spots, streaks or irregular black speckling. Occasionally a row of dark ventrolateral spots on each side.

Lepidosis: A large robust snake with a solid cylindrical body. Head less markedly elongate than P. s. breviostris. Tail tapered and long. Nostril pierced between 2 (rarely 3) nasal scales; posterior nasal, undivided; loreal horizontally elongate; preocular usually well separated from the frontal; UL 8 (rarely 6, 7 or 9) with 4th and 5th (rarely 3rd and 4th or 5th and 6th) entering the orbit; LL 10 (rarely 9 or 11), the first 4 in contact with anterior sublinguals. Body covered with smoothy overlapping scales in 17 rows at midbody; ventrals 160-173; anal scale divided; subcaudals 82-110.

Size: Broadley (1983) recorded the largest male SVL of 1415,0 mm from Norton Zimbabwe and the largest female SVL of 1020,0 mm from Beitbridge, Zimbabwe. A female of 567,0 mm SVL had a mass of 59,9 g.



MAP 156.

Psammophis phillipsii.
Recorded distribution
in the Transvaal, and
in southern Africa.

Distribution

Senegal, east to Kenya, south-west to northern South West Africa/Namibia, northern and north-eastern Botswana, Zimbabwe, northern and eastern Transvaal, Mozambique, eastern Swaziland to Kwa Zulu and coastal Natal.

Distribution in the Transvaal (Map 156).

Andover 210KU; Antioch 240KT; Boekenhoutskloofdrift 286JR; Burgersdorp 19KT; Croc Pool Shingwedzi; Doreen 108MT; Hectorspruit 164JU; Helena 400JU; Kaapmuiden 212JU; Kiepersol; Kumane Dam; Louws Creek 271JU; Madjabesane, near Komatipoort; Manutsa 233KT; Manyeleti Game Reserve; Manyeleti Game Reserve, Buffelshoek; Manyeleti Game Reserve, Dixie Hill; Manyeleti Game Reserve, Hermitage; Messina to Louis Trichardt; Othawa 242KU; Pafuri; Paris 206KT; Pongola Nature Reserve; Pretoria 25KT; Ritakop, Ritavi 2; Riversdale 246KT; Sandringham 197KU; Selati Ranch 143KT; Shilowane; Skukuza to Malelane; Skukuza; Swadini; Waterpoort.

Literature Records

Komati/Crocodile R. Junction; Komatipoort; Letaba Camp; Leydsdorp; Machai Pan; Punda Milia; Satara; Shingwedzi (FitzSimons, 1962). Lower Sabie road, 6,4 km east of Skukuza; Sabie river \pm 8 m west of Skukuza; Kingfisherspruit; Punda Maria, ridge behind the camp; Shingwedzi quarters; Satara quarters; Shipikane erosion works; main road, 6,4 km north of Mooiplaas windmill; Crocodile river at Bume mouth; Tshokwane; Tsende experimental plots; near Punda Maria-Pafuri cross roads; Malonga spring; main road near Numbi gate; Letaba river near Timisini mouth; Malelane; Dzombo experimental plots; Mahlangene; Crooks corner, Pafuri (Pienaar et al, 1983).

Habitat and Ecology

In the Transvaal restricted to the hot country to the north of the Soutpansberg and along the eastern Transvaal lowveld including a projection into the centre of the Transvaal probably along the Olifantsriver to near Bronkhorstspruit. Found in veld types 9, 10, 11, 14, 15 and 19 at altitudes ranging from 200-1000 m a.s.l. Frequently found alongside streams and other water bodies frequenting tall grass and reeds; also found away from water but usually in thick cover. A large heavy bodied snake, it is also known to climb trees and may be found basking on the branches up to two metres from the ground. It bites readily, striking at anything, even the boles of trees when captured.

Swift moving and an active forager, it feeds in lizards, rodents and frogs. Broadley (1983) records that a 1,4 m specimen in Zimbabwe disgorged a juvenile Black mamba Dendroaspis polylepis (Günther).

Oviparous, 10-30 eggs measuring 28,0-40,0 mm x 10,0-20,0 mm are laid in midsummer. Hatchings measure 275,0-300,0 mm total length, (Broadley, 1983).

Truncated tails are common in this species and Broadley (1987b) showed that 43,7% of specimens examined exhibited caudal autotomy. This shows that there is considerable predation pressure on the species and also exhibits the efficacy of the measure.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. An uncommon snake in the Transvaal, habitat destruction through overgrazing

and agriculture are slowly decreasing and fragmenting the range of the species. It is however protected in the Kruger National Park and also occurs in a few provincial nature reserves. Details of population size on these reserves are needed to assist in the monitoring of the species. Currently considered secure.

Remarks

TM 65843 from the farm Boekenhoutskloofdrift 286JR is far removed from others of the species along the escarpment and could be an aberrant P. s. brevirostris. The ventral scale count overlaps with both species but considering its location it is likely to be P. s. brevirostris.

Psammophis crucifer (Daudin, 1803)

Coluber crucifer Daudin, 1803, Hist. Nat. Rept. 7, p. 189. Type locality: "Indes orientalis" = South Africa. Psammophis crucifer (Daudin). FitzSimons 1962, p. 239, 1966, p. 61, 1970/74, p. 142; Broadley 1977(d), p. 25; De Waal 1978, p. 111; Jacobsen & Haacke 1980, p. 54; Welch 1982, p. 169; Broadley 1983, p. 146, figs. 93 & 94, pl. 35; Branch 1988a, p. 73, pls. 23 & 34, 1988b, p. 13.

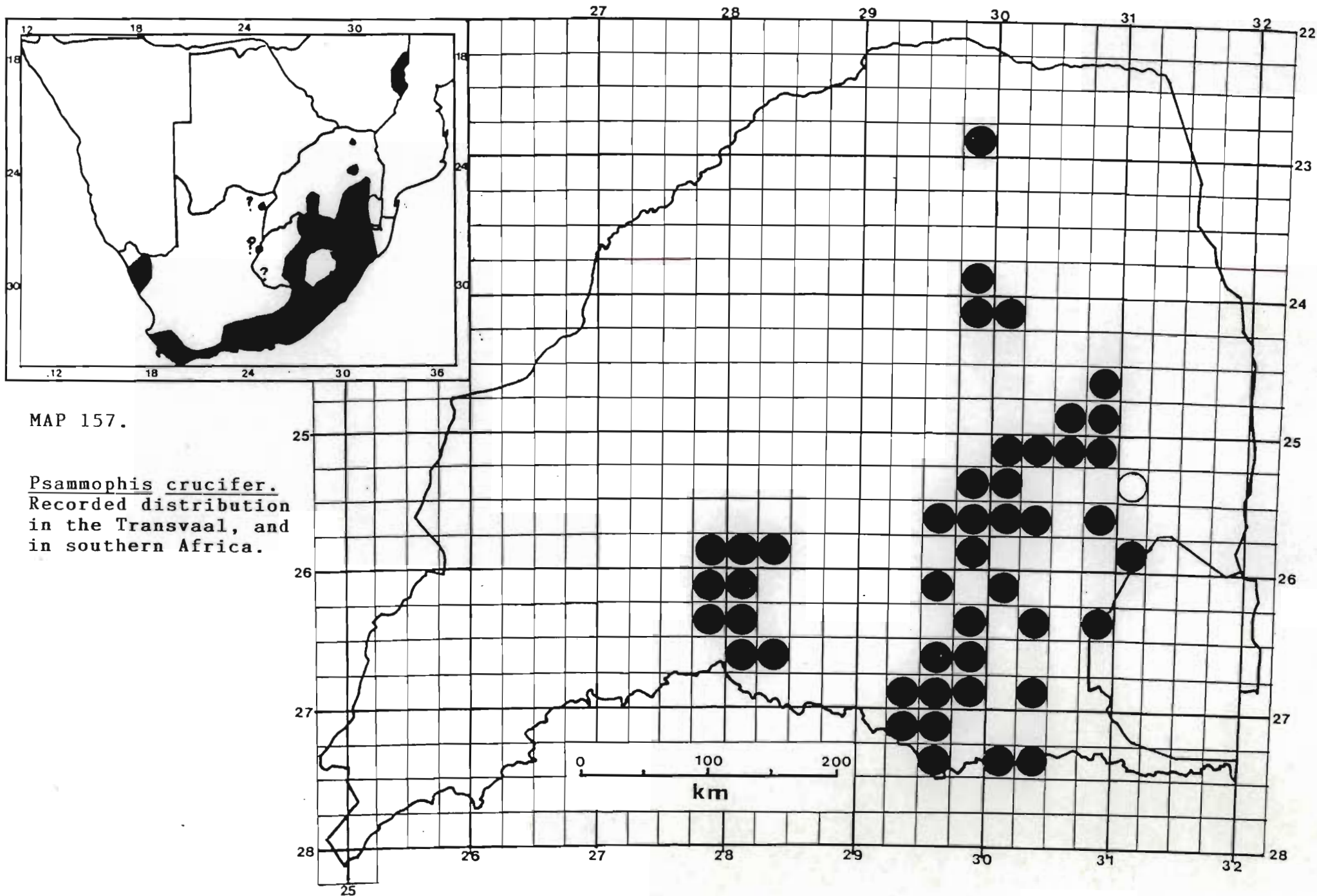
Diagnosis: 88 Specimens examined.

Colour: This is the sand snake with the greatest variation in the development of its typical colour pattern, which may be completely absent to very well-defined. Silvery grey, pale greyish olive to olive or brownish above, uniform or mostly with a well-defined median dorsal black-edged brown band, which extends over back and tail. One or two transverse bars or blotches on

the nape create a cross-like mark on which the popular name is based. On either side of body is a more or less distinct dark band which is bordered below by a white streak. The head is dark above, but has conspicuous dark-edged, creamy to yellowish white markings, which include a stripe on the snout and one on either side above the eyes. Upper-lips pale and in front spotted or blotched with dark brown. Below, yellow to orange yellow, uniform or more usually with a dusky to blackish streak or series of spots along each side. Chin, throat and anterior of body spotted or blotched with darker-edged greyish blue, brown or orange brown spots. Exceptionally the spots and blotches extend over belly and tail.

Lepidosis: A small moderately slender snake with a head distinct from the neck and a fairly long tail. Posterior nasal usually entire; a single preocular, well separated from frontal; UL 8 (rarely 7 or 9) with 4th and 5th (rarely 3rd and 4th or 5th and 6th) entering orbit; LL 9 (exceptionally 10) with first 4 in contact with anterior sublinguals. Dorsal scales smooth and imbricate, in 15 (exceptionally 17) rows at midbody; ventrals 136-165 (usually 137-152 in males and 153-165 in females); anal scale divided; Subcaudals 70-80 in males and 61-69 in females, (Broadley, 1983).

Size: Largest male SVL = 490,0 mm (N7008 - Desire 563KT), mass = 32,5 g (N7083 - Paardeplaats 154JT); Largest female SVL = 550,0 mm (N7732 - Dycedale 368JU), mass = 95,0 g (N7732). Mean male SVL (350,0 mm) = 359,56 mm \pm 50,73 (1SD), n = 18, mass = 18,63 g \pm 7,12 (1SD), n = 17; Mean female SVL (300,0 mm) = 370,12 mm \pm 79,12 (1SD), n = 8, mass = 23,5 g \pm 25,24 (1SD), n = 8. Tail relatively short going into total length from 3,67 to 5,47 times.



Distribution

From the north-western Cape Province along the coast to the southern Cape, north to Natal, Orange Free State, Lesotho, the southern and eastern Transvaal. A relict population occurs in eastern Zimbabwe.

Distribution in the Transvaal (Map 157).

Barberton District; Between Forest Hill & Glenanda, Jhb.; Blaauwboschkraal 346JT; Blyde River Nature Reserve; Boschhoek 36JT; Bourkesluck 454KT; Carolina Town and Townlands 43IT; Crocodile river, Pretoria; De Kuilen 205JT; De Roodepoort 435IS; Desire 563KT; Doornkop School, Witpoort; Dycedale 368JU; Elandsfontein 308IQ; Elandsfontein 322JT; Ermelo; Fernie 243IT; Generaalsdraai 423JS; Goedgeacht 38HS; Halfgewonnen 190IS; Harnham 793MS; Hartebeestvlakte 163JT; Hoedspruit 346JS; Irene; Johannesburg; Johannesburg, Glenanda; Kaapsche Hoop 483JT; Kafferskraal 513IS; Kastrolnek, Wakkerstroom; Krantzview, Carolina Dist.; Leeuwklip 363JS; Leiden 340IT; Lisabon 262JT; Lothair 124IT; Lydenburg; Mauchsberg; Mooimeisjesfontein 77HS; Morgenzon 107HT; Mphome 949LS; Ohrigstaddam Nature Reserve; Olifantsfontein; Oshoek 69JT; Paardeplaats 154JT; Pilgrim's Rest; Pinedene; Pretoria; Pretoria, District; Randfontein; Rietvlei Dam, Pretoria; Rolfontein 536IS; Rustfontein 1030LS; Sabie; Suikerbosrand Nature Reserve; Tafelkop 126HT; Tafelkop 270IS; The Crows Nest, The Downs Nature Reserve; The Downs 34KT; The Staircase, Mauchsberg; Tweefontein 467IS; Vlakspruit 42HS; Wakkerstroom Townlands 121HT; Wanhoop 78JT; Waterval 128HS; Waterval 205KS; Welbedacht 382IS; Zuurfontein, Johannesburg.

Literature Records

Belfast; Karino; Krugersdorp; Pan (FitzSimons, 1962).
Serala 5KT (Snyders, 1987). Kempton Park (NMZB).

Habitat and Ecology

Montane and highveld grassland are the main habitats of the species in the Transvaal including veld types 8, 9, 48, 52, 54, 57, 61, 62, 63 and 64 at altitudes of 1400-2300 m a.s.l. Diurnal, it forages for prey amongst grass tussocks. Takes refuge under rocks on soil as well as in moribund termitaria, more rarely in crevices between rocks. It may climb into low shrubs to avoid detection.

A very agile snake, it feeds mostly on lizards and more rarely frogs which it captures by actively foraging for them. Oviparous, up to 13 eggs are laid in mid- to late summer measuring on average 21,0x18,0 mm but may be as much as 32,0 mm long. Haagner (1988) recorded that a female from Port Elizabeth laid 5 eggs measuring 30,8-36,1 mm (mean = 33,2 mm \pm 1,91) x 12,0-14,0 mm (mean = 12,98 mm \pm 0,87). The total eggs mass weighed 19,8 g with individual ova weighing 3,3-4,4 g (mean 3,96 g \pm 0,49). Kunzi (1984) reported on an incubation period of 45 days at temperatures ranging between 29° and 30°C with a humidity of 65% during the day and 95% at night.

Hatchlings measure 142,0-153,0 mm SVL, T = 44,0-50,0 mm, with a mass ranging from 1,65-2,1 g.

Although caudal autotomy is also found in P. crucifer it is with considerably less frequency than in the preceding species. Broadley (1987b) records this phenomenon in only 9,5% of the specimens he examined (n = 74).

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Uncommon over much of its range in the Transvaal it tends to be unobtrusive. It does occur in several provincial nature reserves, but as most of these have limited habitat available it is not known whether viable populations can be maintained. Large scale habitat destruction of the grasslands must have influenced the species. The fact that the species was not located in many 1/4° squares where it should have been found is indicative of this. Monitoring and determination of frequency of the species on the reserves where it occurs should be done. Currently considered secure.

Psammophis angolensis (Bocage, 1872)

Amphiophis angolensis Bocage, 1872, Jorn. Sci. Lisboa, 4, p. 82. Type locality: Donda, i.e. Dundo, Loanda dist., Angola.

Psammophis angolensis (Bocage). FitzSimons, 1962, p. 235, 1966, p. 61, 1970/74, p. 139; Pienaar, 1966, p. 191, 1978, p. 174, pl. 79; Broadley, 1977d, p. 26, 1983, p. 148, fig. 95; Jacobsen, 1977, p. 33; Jacobsen & Haacke, 1980, p. 52; Welch 1982, p. 169; Pienaar et al 1983, p. 168, pl. 73; Auerbach, 1987, p. 171, pl. 16, fig. 4. Branch, 1988a, p. 72, pl. 22, 1988b, p. 13.

Diagnosis: 17 Specimens examined.

Colour: Grey to pale or dark olive above, with a well-marked dark grey to olive, rich chocolate or blackish vertebral band extending from nape to tip of tail. This

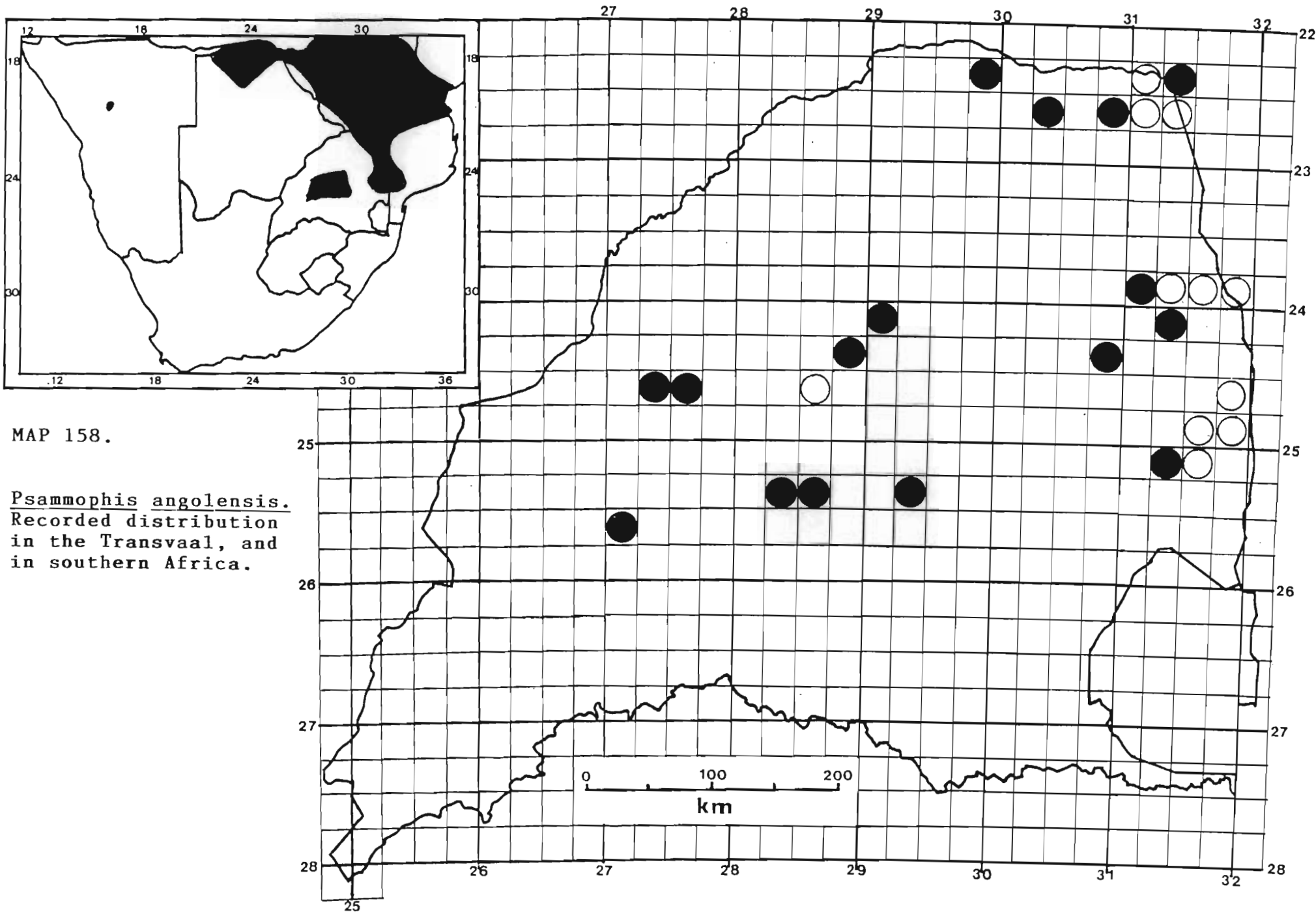
dark band is narrowly edged with black. One or two, more or less distinct, dark lines or series of spots may be found on either side. Head dark olive to chocolate brown, often becoming blackish behind in adults, and bearing three distinct dark-edged white to yellowish transverse bars or lines. In addition, usually two dark crossbands on the neck, separated by a pale interspace. The crossbands are sometimes connected to form part of the vertebral band. Below white, with or without fine darker, lateral lines extending from the throat to the vent and often bordering on an orange buff median band. Iris reddish-brown. Tongue black.

Lepidosis: A small, slender snake with head slightly broader than neck; tail elongate and tapered. Snout rounded; nostril pierced between two nasal scales; loreal longer than deep; preocular single (rarely 2) usually separated from frontal, exceptionally in contact; UL 8 (rarely 6, 7 or 9), 4th and 5th (rarely 3rd & 4th, 4th only or 5th & 6th) entering the orbit; LL 8 (rarely 7 or 9), first 4 in contact with anterior chin shields. Body scales smooth and imbricate, in 11 rows at midbody; ventrals 135-156; anal scale divided; subcaudals 57-82.

Size: A very small species seldom exceeding 450,0 mm in total length. Largest male SVL = 300,0 mm (J4244 - Zandriverspoort 442KO), mass = 5,4 g (J4244); Largest female SVL = 312,0 mm (J11130 - 1 km from Pretoriuskop); mass = 11,1 g (N7405 - Gumela); Mean SVL = 293,5 mm \pm 17,31 (1SD), n = 6, mass = 8,21 g \pm 2,85 (1SD), n = 4. Tail relatively long going from 3,17 to 3,60 times into total length.

Distribution

Tanzania south to the Transvaal and southern Mozambique, westwards through Botswana to northern South West Africa/Namibia and Angola.



MAP 158.

Psammophis angolensis.
 Recorded distribution
 in the Transvaal, and
 in southern Africa.

Distribution in the Transvaal (Map 158).

Argyle 46KU; Doorndraai 282KR; Gumela; Hoedspruit; Loskopdam Nature Reserve; Messina Landbou Proefplaas; Paddafontein 375KQ; Percy Fyfe Nature Reserve; Phalaborwa; Plot 34 Kromdraai, Pretoria; Rietfontein 214JR; Rustenburg; Tshidzi Hill; Zandrivierspoort 442KQ; Between Saselandonga Spruit & Pafuri.

Literature Records

Nylsvley Nature Reserve (Jacobsen, 1977). Punda Milia, (FitzSimons, 1962). Ridge behind Punda Maria camp; Letaba ranger's quarters; W.N.L.A. quarters, Pafuri; eastern boundary 6,4 km south of Pafuri; Skukuza; eastern boundary between Saselandonga poort and Mathlakuza pan (several specimens in these sandveld areas); Skukuza staff quarters; Tshokwane ranger's quarters; Olifantspoort area; Olifants camp; between Nyandu sandveld and beacon 9; Mastrat-spruit; Kumane dam, (Pienaar et al, 1983).

Habitat and Ecology

A rare widespread species in the Transvaal north of the Magaliesberg in veld types 10, 11, 15, 18, 19 and 20 at altitudes ranging from 200-1300 m. a.s.l. Usually observed while foraging taking refuge under stones if molested. Feeds largely on skinks and small frogs (Broadley, 1983).

Oviparous from 3-5 eggs are laid during early to midsummer. Broadley (1983) records the ova as measuring 15-18,0x5-6,0 mm but 4 eggs laid by JN 190 - Tshidzi hill, measured 23,0-24,4 x 8,0-8,1 mm indicating a greater range in size.

Broadley (1987b) recorded truncated tails in 24,6% of the 199 specimens he examined indicating considerable predation pressure on the species.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Rare and largely unknown, the species occurs in very low densities. How they manage to propagate is a mystery. During four years at Nylsvley only two specimens were found. More work is needed on determining presence and densities on the nature reserves. Currently considered secure and likely to remain so unless large scale bush clearing takes place. This will have a detrimental affect on the species.

Genus Aparallactus A. Smith, 1849

Aparallactus A. Smith, 1849, Ill. Zool. S. Afr., Rept. App. p. 15. Type: Aparallactus capensis A. Smith.

Small fossorial or semifossorial snakes which are distinguishable on the grounds of the small head as wide or slightly smaller the neck. Eyes small with a round pupil. Two large, grooved or solid fangs situated on the maxilla, below the eye. Body cylindrical; dorsal scales smooth, imbricate and in 15 rows at midbody; Ventrals smooth; anal scale entire; tail moderately long to short. Subcaudals a single row. Oviparous.

Only two species occur in the Transvaal, one of which is restricted to the lowveld while the other is one of the most widespread and common of Transvaal snakes.

Key to the Transvaal species.

- 1. First lower labial in contact with its fellow behind mental; colour usually reticulated pale brown above and white below A. lunulatus lunulatus
- First lower labial separated from its fellow behind mental; uniform grey-brown to red-brown dorsally with a blackish head and collar. Ventral pinkish white to white A. capensis

Aparallactus lunulatus lunulatus (Peters, 1854)

Uriechis lunulatus Peters, 1854, Monatsb. Akad. Wiss. Berlin, p. 623. Type locality: Tete, Mozambique.

Aparallactus lunulatus lunulatus (Peters). FitzSimons 1962, p. 265, 1966, p. 68, 1970/74, p. 153/152, pl. 20(2); Pienaar 1966, p. 197, 1978, p. 183 pls. 84 & 84A; Jacobsen & Haacke 1980, p. 60; Welch 1982, p. 139; Broadley, 1983, p. 151, figs. 96 & 97; Pienaar et al, 1983, p. 179, pls. 79 & 79A; Auerbach, 1987, p. 171. Branch, 1988a, p. 76, pl. 26, 1988b, p. 12.

Diagnosis: 6 Specimens examined.

Colour: Variable above, grey to olive, light brown to dark brown or plumbeus, uniform or with a black nuchal collar. A series of dusky to black crossbars which begin behind the nuchal collar, reduce to transverse spots and finally fade out over posterior half of back, in dark specimens the head is usually a little paler than back, while in lighter coloured specimens, scales on back often darker-edged, giving reticulated appearance. Below, white to greyish white or plumbeus, uniform or chin and throat only pale and ventrals and subcaudals edged or suffused in varying degrees with darker tinge.

Lepidosis: A small, moderately stout snake with a slightly flattened head, not wider than the neck and a relatively short tail. Rostral broader than deep; nostril pierced in divided (rarely entire) nasal; internasals smaller than prefrontals; frontal longer than broad; preocular 1, in contact with nasal; postocular 1; UL 6 (exceptionally 7), 3rd and 4th entering orbit, 5th largest, in contact with parietal and separating postocular from temporals; LL 6 (exceptionally 5); 1st lower labials in contact behind the mental; first 4 LL in contact with anterior sublinguals. Body scales smooth and overlapping, in 15 rows at midbody; ventrals 144-176, usually not exceeding 162 in males but greater than 162 in females; anal scale entire; subcaudals 48-65, 55-65 in males and 48-61 in females.

Size: Broadley (1983) recorded the largest male SVL = 360,0 mm (UM 32649 - Harare, Zimbabwe) and female SVL = 430,0 mm (UM 33145 - Matetsi, Zimbabwe). A 177,0 mm SVL individual from the farm Archie 156KT, weighed 1,75 g. Tail length being contained into total length from 4,12 to 4,6 in males and 4,8 to 5,2 in females, (Broadley, 1983).

Distribution

Widespread in Africa from the Sudan and Zaire south through eastern Africa to the north-eastern Transvaal and southern Mozambique.

Distribution in the Transvaal (Map 159).

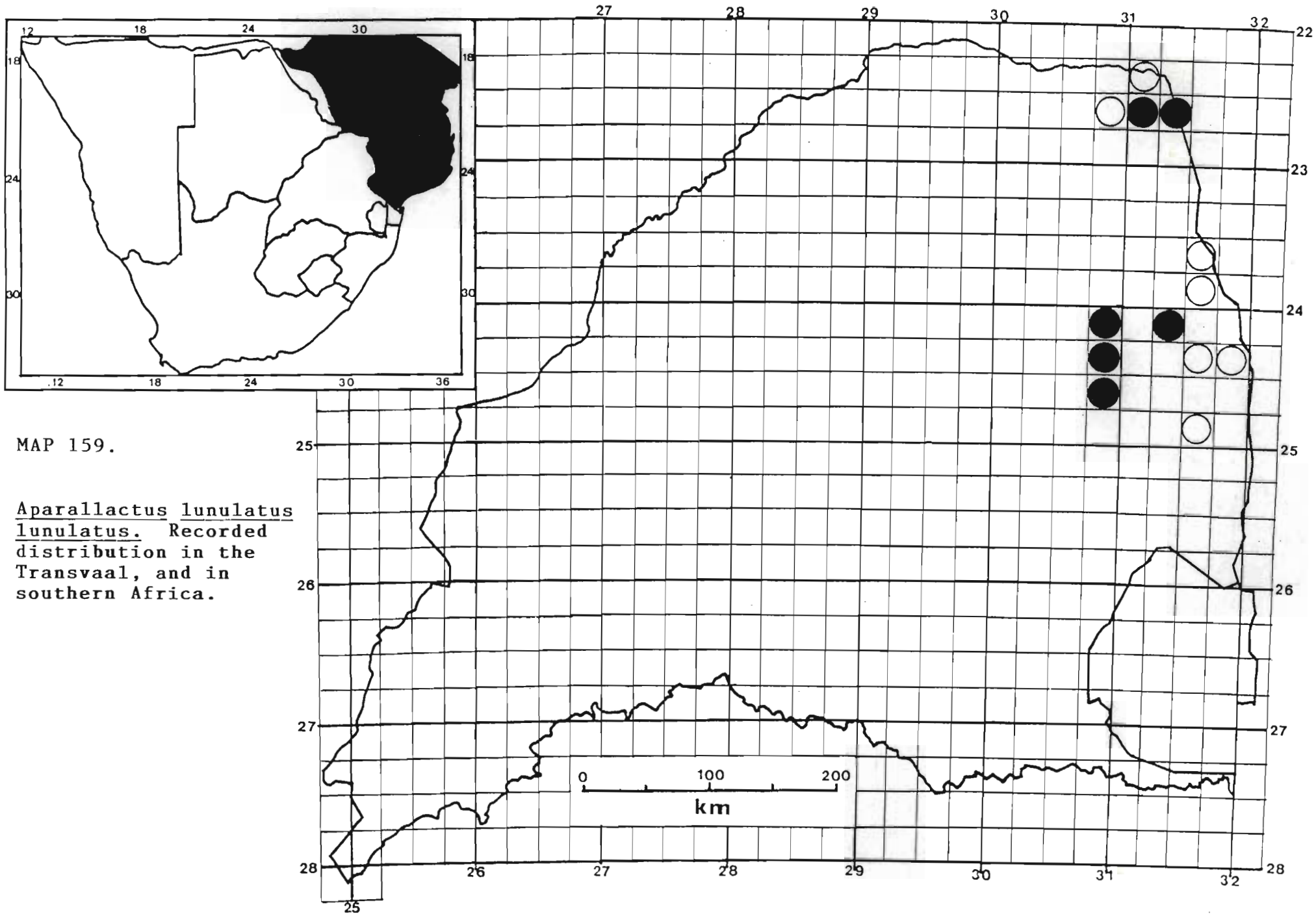
Archie 156KT; Madrid; Nyandu Bush, Wambiya Sandveld; Punda Milia; Shlaralumi; Swadini Dam.

Literature Records

Ngirivane Ridge; Pafuri; Punda Milia (FitzSimons, 1962). Near Tambye drift on main road to Pafuri; Nwambiya pan area; eastern boundary between Pafuri and Saselandonga gorge; Malonga spring; Ngumene sandstone koppie, north of Ngirivane; eastern boundary between Nchindo and Tabaglovu beacons; Mala-Mala ranger's quarters; near byproducts depot, Skukuza; Nwanedzi ranger's quarters (Pienaar et al, 1983).

Habitat and Ecology

A rare, peripheral species, it is restricted to eastern and possibly also the northern Transvaal. Found under rocks and rotting logs in veld types 9, 11, 15 and 18 at



MAP 159.

Aparallactus lunulatus
lunulatus. Recorded
 distribution in the
 Transvaal, and in
 southern Africa.

altitudes ranging from 300-800 m a.s.l. Usually found in sandy areas, solitary and probably nocturnal. In Zimbabwe many specimens were found at road verges, living in the loose soil and vegetative debris which had piled up. Food appears to be centipedes and other arthropods. Oviparous, the snakes lay 3 or 4 elongate eggs measuring approximately 30,0 x 7,0 mm (Broadley, 1983).

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Rare, it is widespread in the Kruger National Park, while it has been recorded from the Swadini section of the Blyde River Nature Reserve. Additional surveys are needed to establish its total distribution range in the Transvaal.

Aparallactus capensis A. Smith, 1849

Aparallactus capensis A. Smith, 1849, Ill. Zool. S. Afr., Rept., App., p. 16. Type locality: Kaffirland, to the eastward of Cape Colony, i.e. Natal fide FitzSimons, 1962. Pienaar, 1978, p. 185, pl. 85; De Waal, 1978, p. 113; Broadley, 1983, p. 154, figs. 99 & 100, pl. 29; Pienaar et al, 1983, p. 180, pls. 80 & 80A; Auerbach 1987, p. 172, pl. 16, fig. 5; Branch 1988a, p. 76, pl. 26, 1988b, p. 12.

Aparallactus capensis capensis A. Smith. FitzSimons 1962, p. 268, 1966, p. 68, 1970/74, p. 154/153; Pienaar, 1966, p. 199, pl. 91; Jacobsen 1977, p. 34; Jacobsen & Haacke, 1980, p. 61; Welch 1982, p. 139.

Diagnosis: 372 Specimens examined.

Colour: Above, head black (exceptionally brown as on

back), followed behind by a wide black collar which may be joined with the back of the head or remain separated therefrom by a narrow pale crossbar. The black collar narrows on either side of the neck and ranges from 3-5 scale rows, deep. Back yellowish, pinkish, reddish to greyish brown above, uniform or with a fine darker brown to blackish vertebral line. Below uniformly white.

Lepidosis: A small, relatively slender snake with the head as broad as the neck. Tail tapered and fairly short. Snout rounded; nasal entire (rarely divided); internasals shorter than prefrontals; a single preocular widely separated from frontal but in contact with supraocular; postocular 1; UL 5 or 6 with 3rd and 4th (rarely 2nd and 3rd) entering orbit; LL 5 (occasionally 4 or 6), the first three in contact with anterior sublinguals; first lower labial separated from each other. Scales smooth, imbricate and in 15 rows at midbody; ventrals 138-175; anal scale entire; subcaudals 32-57 mostly more than 35 and less than 50.

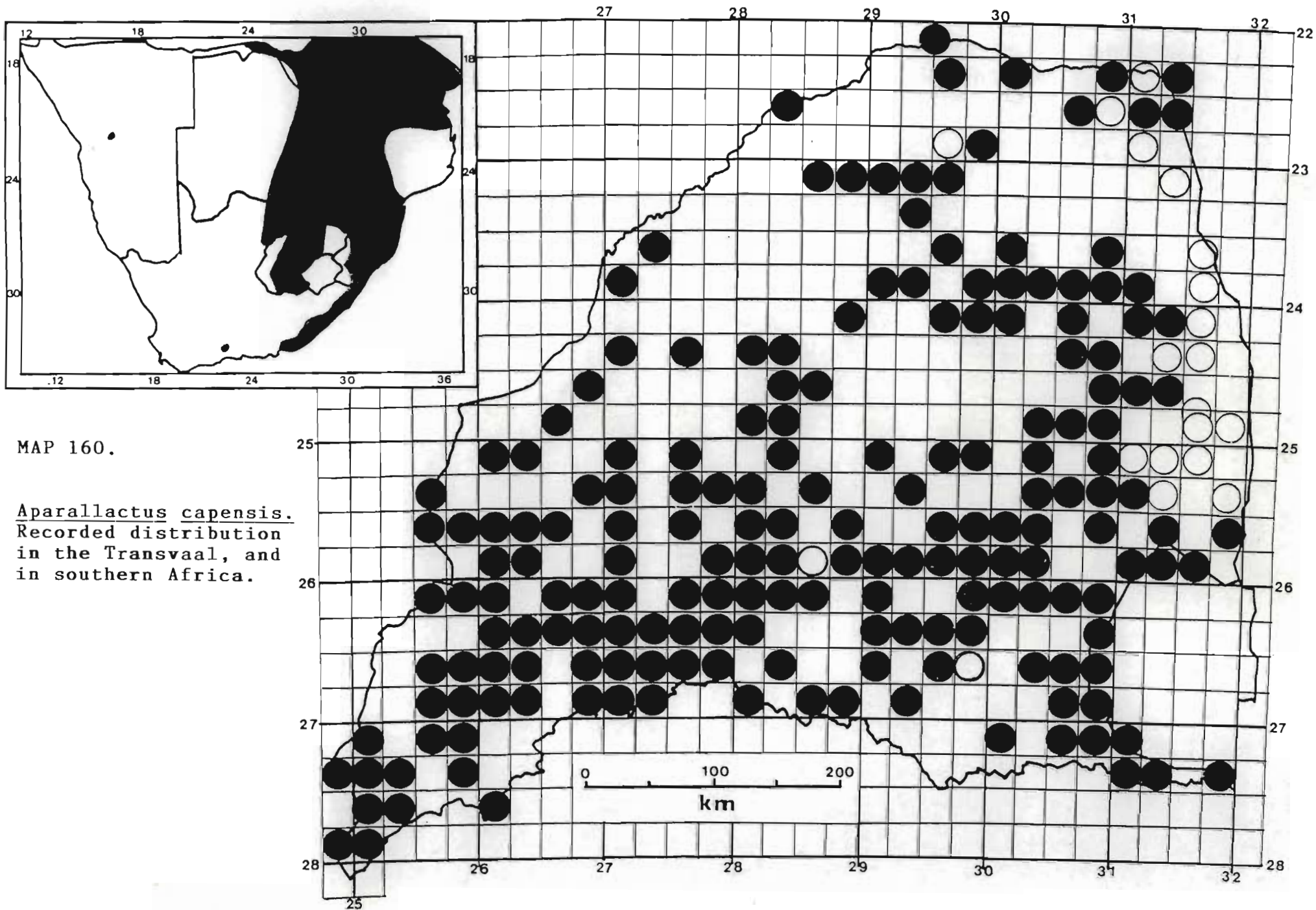
Size: Largest male SVL = 261,0 mm (N7884 - Rietfontein 255JT), mass = 9,7 g (N7884); Largest female SVL = 324,0 mm (N9468 - Van der Waltspoor 81HT), mass = 11,2 g (N9468). Mean male SVL (150,0 mm), = 205,64 mm \pm 29,69 (1SD), n = 50, mass = 4,30 g \pm 1,82 (1SD), n = 50; Mean female SVL (150,0 mm) = 222,86 mm \pm 36,37 (1SD), n = 50, mass = 4,50 g \pm 2,17 (1SD), n = 50. Tail is contained in total length from 4,92 to 6,71 times.

Distribution

Very widespread from Tanzania to the eastern Cape Province westwards through south-eastern Zaire and Zambia to Angola.

Distribution in the Transvaal (Map 160).

4 km Messina - Tshipise; 33 km Wolmaransstad - Klerksdorp; Abe Bailey Nature Reserve; Andalusia; Anysspruit 139HT; Archie 156KT; Athole 392IT; Backwood 348LQ; Bakenkop 157HT; Bapsfontein; Barberton Townlands 369JU; Beauley 260LR; Bergfontein 277KQ; Bergfontein 32LS; Bergplaats 25HU; Between Saselandonga Spruit & Pafuri; Blesboklaagte 181IR; Bloemheuwel 327HO; Bluegumspoor 779MS; Blyde River Nature Reserve; Bokfontein 448JQ; Boschhoek 36JT; Boschkom 272JT; Boschrand 158HO; Braksloot 734LS; Broedershoek 129JU; Buffelsfontein 443IP; Buffelspoort 421KR; Buffelspruit 443KR; Bulskop 225IP; Calais 563KS; Charl Cilliers 332IS; Clearwaters, Haenertsburg; Confidence 17HU; Cullinan; De Deur 539IQ; De Gladde Klipkop 763LS; De Goedeverwachting 57IT; De Loskop 205LS; De Putten 56JO; Delmas; Diepdal 244IT; Dongola; Doornbult 123HP; Doornbult 81IP; Doornhoek 341JT; Doornplaat 177IP; Doornpoort 262IP; Dordrecht 190KP; Duurstede 361JU; Eden 425KT; Elandsfontein 322JT; Elandskop; Engeland 183KP; Fleur-de-Lys 194KU; Frederikstad, Potchefstroom; Garstfontein 374JR; Gedult 270IP; Gestoptefontein 349IO; Gillooly's Farm; Glen Alpine 304LR; Godlwayo; Goedehoop 152JS; Goedvertrouwd 499JR; Groenkloof 358JR; Groothoek 171HT; Haarlem 443IT; Haffenden Heights 35KT; Halfgewonnen 190IS; Halfway House; Halfway House, Noordwyk; Hartbeestfontein 281KQ; Hartbeestfontein 297IP; Hartbeestlaagte 325JS; Hartebeespoort, Pretoria; Hartebeestfontein 437IQ; Hartebeestpoortje 451IQ; Heerenveen 27IT; Hoedspruit 346JS; Holfontein 279IP; Holworth 783MS; Honeymoon 80KQ; Houthaaldoorns 2IP; Houwater 54JQ; Humanskraal 346IO; Irene; Iron Crown, Wolkberg; Ishlelo 441IT; Italie 123HO; Johannesburg; Johannesburg, Honeydew; Johannesburg, Rivonia; Ka



Khayi; Kaapsche Hoop 483JT; Kafferskraal 43JQ;
Kareeboomput 286HO; Kareelaagte 45JO; Kasteel 766LT;
Keulen 669LT; Klein Letaba; Klein Tshipise;
Klerkskraal 65IQ; Klipdraai 3KT; Klipfontein 241IS;
Klipplaatdrift 193JR; Klipriviersberg; Knoppiesfontein
87IP; Koedoesvlei 47LS; Krabbefontein; Kromdraai
486JS; Kromdraai 520JQ; Kuilfontein 324JP; Langalanga
141KT; Langbaken 342KS; Leeuwklip 363JS; Leipsig
264LR; Leydsdorp Dorpsgronde 779LT; Lindleyspoort
220JP; Lochiel 192IT; London 112HO; Loskop Dam Nature
Reserve; Loskop Dam Nature Reserve, Onwerf; Lukin
643LS; Lydenburg; Mac Mac Pools; Magalakynsoog 199KR;
Mahobieskraal 211JP; Makokskraal 203IP; Malelane 289JU;
Manyeleti Game Reserve, Main Camp; Mariepskop 420KT;
Meidingen 398LT; Middelburg Town and Townlands 287JS;
Modderfontein 351R; Moilwas Location; Mooifontein
285JS; Morgendal 216KS; Naudesbank 172IS; Nelspruit;
Nooitgedacht 17JP; Nooitgedacht 332JP; Nooitgedacht
392KT; Nyandu Bush, Wambiya Sandveld; Nylstroom;
Nylsvley Nature Reserve; Nzulase; Ohrigstad Dam Nature
Reserve; Olifantsfontein; Onderhoek 595LT;
Oorbietjiesfontein 292IP; Oshoek 212IT; Paardefontein
35HO; Perth 242LS; Pilgrim's Rest; Pinedene; Pipe
Klip Berg 21HU; Pittville 197IT; Pongola Nature
Reserve; Pretoria; Pretoria West; Pretoria, Leper
Asylum; Pretoria, Mountain View; Pretoria, Olympus;
Pretoria, Pienaarsrivierdam; Pretoria, Quaggaspoort;
Pretoria, Skinners Court; Pretoria, The Willows;
Pretoria, Wonderboom Airport; Punda Milia; Randfontein;
Redcliff 426IT; Rhenosterfontein 560IQ; Rietfontein
214JR; Rietfontein 21IR; Rietfontein 255JT;
Rietfontein 62IO; Rietkuil 491JS; Rietvlei 285IP;
Rietvlei 375JT; Rietvlei Dam, Pretoria; Rondavelskraal
290JP; Roodekrans 457IS; Roodekuil 183JQ; Roodepoort
598IR; Roodewal 117JT; Roodewal 322JQ; Roodewal 364IO;

Rooidraai 85IQ; Rooipoortje 453IQ; Rust der Winter Nature Reserve; Rustenburg; Rustenburg Nature Reserve; S.A. Lombard Nature Reserve; Schiettocht 25LU; Schoongezicht 124IP; Schoonkloof 273KP; Selati Ranch 143KT; Shlaralumi; Silverbank 611IR; Silwana's Location 719LT; Smithfield 44IS; Spion Kop 252IS; Springbokpan 61IO; Steynsdrift 145JS; Strydfontein 477IR; Suikerboschfontein 422JT; Suikerbosrand Nature Reserve; Syferfontein 293IQ; Syfergat 204HO; Tshamavhudzi Peak, Northeast slopes of; Tshenzhelani; Tweefontein 523JQ; Tweerivier 197JQ; Uitvalskop 14HN; Umzinto 36MR; Urk 10LS; Vaalbank 110IP; Vaalwater; Van der Waltspoort 81HT; Ventersdorp Dorpsgebied; Vergulde Helm 316LQ; Vlakfontein 457JR; Wanhoop 485JU; Warmbaths; Waterpan 292IQ; Waterval 220JQ; Waterval, Pretoria Dist.; Weimershoek 81JT; Weipe 47MS; Welgegund 375IQ; Welgemeend 206IS; Welgevonden 312IO; Weltevreden 174IS; Weltevreden 176HO; White River 64JU; Witbank Municipality; Witrand 103IS; Wonderfontein 103IQ; Woodbush; York 188KT; Zandfontein 317JR; Zandspruit 287KR; Zeekoegat 12KU; Zeerust Townlands; Zondagsfontein 124IS; Zoutpan 104JR; Zuurfontein, Johannesburg; Zwartfontein 34JP; Zwartkrans 172IQ; Zyferfontein 293JP.

Literature Records

Blouberg; Pretoria, Bon Accord; Bronkhorstspruit; Ermelo; Gravelotte; Haenertsburg; Kingfisherspruit; Kaalkop; Legogote; Machadodorp; Malonga Spring; Middelfontein; Mphome; Ngirivane ridge; Olifants Camp; Piet Retief; Plaston; Pretoriuskop; Shikwane; The Brook; Tshokwane; Waterpoort (FitzSimons, 1962). Serala 5KT (Snyders, 1987). Malopene north windmill, Nahpe koppies area; Olifants camp; Dongadziva;

Stungwane firebreak road; between Babalala and Stangene on main road; Mbulwene sandstone reef; rocky outcrop on south bank of Luvuvhu river, west of Shipale spring; Skukuza; Hlangulene waterhole area; near W.N.L.A. quarters, Pafuri; lower reaches of Mashikiri spruit; Matukwane ridge, Punda Maria; Mafayeni spring; drift through Makadze spruit near confluence with Letaba river; north bank of Sabie river, 4,8 km east of Skukuza; eastern boundary sandveld between Saselandonga gorge and Pafuri; between Mathlakuza pan and Shimuhene pan; main road near Numbi gate; eastern boundary between Greone and Nchindo beacons; Crocodile bridge hippo pool area; Mala-Mala ranger's quarters; Shidzivane turn-off on road to Mahembane; between Mahembane and Tsumanene; between Tsumanene and Madziringwe turn-off; Pumbe sandveld; Nyandu sandveld; along eastern boundary between beacons 1-3, 9-10 and 10-11; Mutale-Luvuhu junction; Shingwedzi; new tarred road north of Luvuvhu river 12-17 km and 7-10 km; Tseri; Boesmanklip dam site (Pienaar, et al, 1983). Selati; The Downs 34KT; Makalali 167KT; Outlook 789MS (NMZB).

Habitat and Ecology

One of the most widespread and common snakes in the Transvaal, being most frequent on the highveld and south western Transvaal. Occurs in all veld types at altitudes ranging from 300-2300 m a.s.l. Most frequently located in moribund termitaria, mostly singly but up to five having been recorded in a single anthep. Very often in the company of other snakes in these termitaria such as Dasypeltis scabra, Lamprophis fuliginosus, Psammophylax rhombeatus and many others. The snakes from the bushveld areas occur mostly under and in rotting logs and aloes, under rocks on soil or even under old sheets

of iron and other debris. Feed mostly on centipedes which according to Broadley (1983) may be as broad or broader than the snake. Apparently not affected by the venom of the chilopod.

Oviparous, Broadley (1983) recorded the clutch size of these snakes as ranging from 2-4 averaging 32,0x4,0-5,0 mm with newly hatched young measuring from 95,0-100,0 mm in length. Specimens from the Transvaal had clutches ranging from 2-6. The eggs are laid during December. The smallest juveniles recorded a SVL ranging from 87,0-108,0 mm found from March to May.

Conservation Status

Partially protected. Schedule 5, Transvaal Nature Conservation Ordinance 12 of 1983. Common, the species is not threatened or endangered. The continued existence of termitaria (Trinervitermes sp.) on the highveld is essential to this species. Occurs in most if not all nature reserves and the Kruger National Park and appears to be adequately conserved.

Remarks

Broadley (1983) discusses the various races which have been described throughout the distribution of the species and came to the conclusion that variations in lepidosis could be ascribed to altitude and that subspecific status was not warranted.