

A new subspecies of *Typhlosaurus lineatus* Boulenger 1887 (Reptilia: Scincidae) from Venda, Southern Africa

N.H.G. Jacobsen

Division of Nature Conservation, Transvaal Provincial Administration, Private Bag X209, Pretoria, 0001 Republic of South Africa

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A new subspecies of *Typhlosaurus lineatus*, is described. It differs from the other taxa in either colour, a single supraciliary, or lower total ventral scale counts. Geographical isolation is apparent.

'n Nuwe subspesie van *Typhlosaurus lineatus* word beskryf. Dit verskil van die ander taksa in ten minste twee van die eienskappe soos kleur, 'n enkele suprasiliëre skub en laer totale ventrale skubtellings. Geografiese afsondering is ook duidelik.

Introduction

The genus *Typhlosaurus* Wiegmann, 1834 has recently been revised by Broadley (1968). He lists 12 species and subspecies including three subspecies of *T. lineatus*. One of these, *T. l. subtaeniatus* Broadley, differs from the nominate race by having a lower ventral count as well as being striped above and below. Occasional near uniform melanistic individuals are known.

Haacke (1986) described a new *Typhlosaurus* species from the Western Cape and discussed phylogenetic relationships of the members of the genus including *T. lineatus* which are pertinent to this paper.

During a survey of the reptiles and amphibians of the Transvaal which has been in progress since 1978, a series of nine specimens related to *T. lineatus* was found. These differ from *T. l. lineatus* Boulenger, *T. l. subtaeniatus* and *T. l. jappi* Broadley in scalation, size, colour and geographic separation and are therefore described as a new subspecies. In addition a further series of 10 *T. l. subtaeniatus* were collected during the survey which are used during the following analysis, incorporating data from Broadley (1968).

Systematics

Typhlosaurus lineatus richardi subsp. nov. (Figure 1)

Type material

Nine specimens, collected by the author and R.E. Newbery at the type locality.

Holotype: TM 59066, adult male.

Allotype: TM 59067, adult female.

Paratypes: TM 59063–59065; 59068–59071 (five males and two females). TM 59063 collected as for holotype, TM 59064, 59071 collected 24 May 1979, all others collected 27 June 1981. The type specimens were deposited in the Transvaal Museum Collection, Pretoria.

Type locality

In sandveld 4–5 km north of Tshamavhudzi peak 22° 37'S/30° 31'E, (2230 DA), Republic of Venda, Southern Africa, (Figure 2).

Etymology

The subspecies is named for Richard E. Newbery for his enthusiasm and assistance during the survey without which much less would have been accomplished.

Diagnosis

T. l. richardi differs consistently from the other three taxa in having one supraciliary. In addition it differs from both the nominate form and *T. l. jappi* in having a lower total ventral count. *T. l. richardi* differs also from *T. l. subtaeniatus* in being white below as opposed to the striated ventrals of the latter.

Description

Holotype. TM 59066 (Figure 1), adult male. Snout/vent

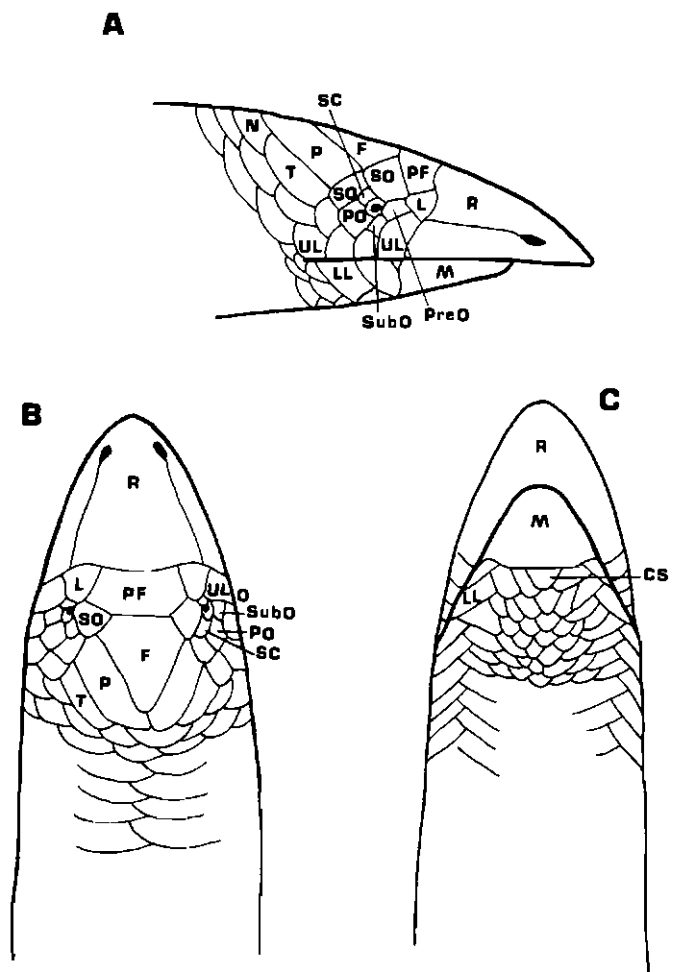


Figure 1 Head scalation of *Typhlosaurus l. richardi* subsp. nov. (TM 59066, holotype): (A) right lateral, (B) dorsal and (C) ventral view. CS: chin shield, F: frontal, L: loreal, LL: lower labial, M: mental, N: nuchal, O: ocular, P: parietal, PO: postocular, PreO: preocular, R: rostral, SO: supraocular, SubO: subocular, SC: supraciliary, T: temporal, UL: upper labial.

length 131 mm; tail 23,5 mm; mass 2,45 g. Snout strongly depressed and pointed: rostral large, and approximately half the length of the head; snout flattened below with a sharp horizontal cutting edge. Nostrils pierced in the rostral about one third back, and connected with the posterior border by a long single horizontal suture on each side. Prefrontal broader than long. Five shields (upper labials, loreals and prefrontal) in contact with rostral. The anterior supraciliary has fused with the anterior supraocular. Posterior supraciliary very small and in contact with the posterior supraocular and the postocular. Preocular in contact with the loreal. Prefrontal in contact with loreals, supraoculars and frontal. Frontal subpentagonal. Subocular in contact with first and second upper labials. Four upper labials. Parietals meet behind the frontal. Four chin shields border the mental. Lower labials, three. Mid-body scale rows 14, ventrals 161, subcaudals 30. Tail tapering to a pointed tip.

Colouration

Golden yellow above with four distinct longitudinal stripes extending the full length of the body to the tail tip, while the lateral stripes, one on each side, are indistinct and end near the vent. Ventrums white.

Variation

Allotype

TM 59067, adult female. Head-body length 131,5 mm. Similar in other respects to the holotype. Ventrals 168. Tail truncated.

Paratypes

Most specimens are similar to the holotype, the exceptions being TM 59063 which has three upper labials and the subocular on one side fused with the postocular; TM 59071 has seven shields, namely the first upper

labials, loreals, prefrontal and the frontonasals, bordering the rostral; TM 59065 has only three shields in contact with the mental. Scales, 14 at mid-body; ventrals 160 – 168, ($\bar{x} = 163,44$); subcaudals 26 – 30 ($\bar{x} = 29,14$). Sexual dimorphism is apparent in the number of ventrals with males 160 – 164 ($\bar{x} = 161,67$, $n = 6$) and females 166 – 168 ($\bar{x} = 167,00$, $n = 3$). In two specimens TM 59063, 59067, tail autotomy was observed.

Colouration

All specimens similar to holotype.

Size

Largest, TM 59066 (Holotype), although TM 59063 has a S/V length of 133,5 mm, with tail truncated. Tail 15,2% (14,28 – 15,33) of total length.

Reproduction

TM 59067 is gravid with two embryos in an early developmental stage.

Habitat

All specimens were found under rotting logs in deep aeolian sand on the northern slopes of the eastern Soutpansberg.

Distribution

Known from a limited area in northern Venda, (Figure 2) and possibly relict.

Discussion

T. l. richardi is the most eastern form of *Typhlosaurus lineatus*. The distribution of the nominate form is restricted to the area of Kalahari sand in Botswana, South West Africa (Namibia) and the northern Cape Province. *T. l. jappi* occurs to the north of it, in western Zambia and eastern Angola, while *T. l. subtaeniatus* is a

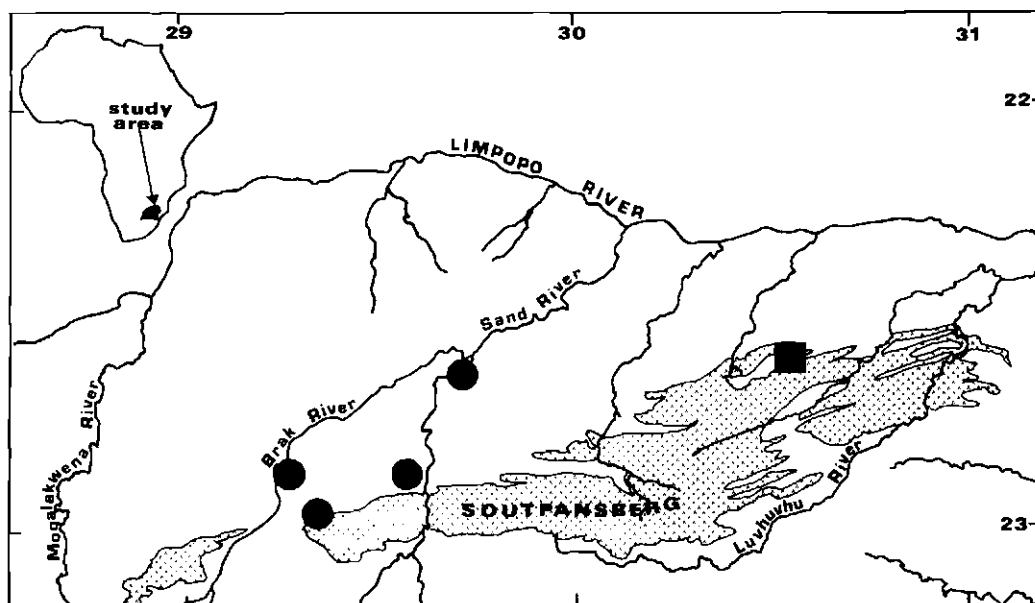


Figure 2 Distribution of *T. l. richardi* ■ and *T. l. subtaeniatus* ●.

Table 1 Comparative data of the four subspecies of *Typhlosaurus lineatus*

Subspecies	N	Number of head shields	Supra-cilliaris	Ventrols		Subcaudals		Largest size (total length)(mm)	Tail length as % of total length	Number of lines on body
				Range	Mean	Range	Mean			
<i>lineatus</i> *	229	37	1-2	176-193	183,8	26-35	29,9	182,0	11,0-15,0	4-8
<i>subtaeniatus</i> *	15	37	2	162-179	169,7	26-30	27,3	154,0	11,7-14,2	8
<i>jappi</i> *	43	37	2	176-186	181,5	22-27	24,4	213,0	10,3-13,6	2-4
<i>richardi</i>	9	35	1	160-168	163,4	26-31	29,1	154,5	14,3-15,3	4-6

*Data from Broadley (1968) with subsp. *subtaeniatus* supplemented by specimens collected by the author.

localized form of the north-western Transvaal, (Broadley 1968).

T. l. richardi resembles the nominate form in its colouration. This is of interest as *T. l. subtaeniatus* which has a striated ventrum is found between the two. Comparative data for the four subspecies are provided in Table 1.

Although Table 1 indicates that *T. l. lineatus* may only have a single supraciliary this is an irregular event, occurring only rarely (twice in 225, Broadley 1968).

Similarly the number of ventrols in *T. l. subtaeniatus* ranges from 162-179, but the lowest count is that of an isolated individual (TM 59072, Farm Smithfield 456 MS, 2229CD), most others ranging from 167-173.

Broadley (1968) discusses well marked evolutionary trends in the genus *Typhlosaurus* which include a reduction in the number of dorsal head shields, an increase in the number of ventrols, and progressive attenuation of the body.

In only one of these respects, (a decrease in the number of head shields) does this new subspecies appear to be more advanced than the other three subspecies. The nominate form, however, does occasionally show head scalation reduction, Broadley 1968).

T. l. richardi has the lowest number of ventrols of the four subspecies and in this character is closer to Broadley's ancestral form. Both *T. l. richardi* and *T. l. subtaeniatus* are smaller than the nominate form and *T. l. jappi*. The former also has a longer tail than that of the other subspecies although approached in this respect by the nominate form.

Recent anatomical studies (Rieppel 1982) indicate that different skull structures altered at different rates in different species independently of one another. He also pointed out that external features of squamation do not evolve in concert with internal characteristics of the skull. Rieppel (1982) therefore does not agree with Broadley's (1968) hypothesis and considers *T. l. lineatus* to be the most primitive typhlosaur he examined. How close *T. l. richardi* is to the nominate form is therefore difficult to assess. It is similar in respect of some external features, as is *T. l. jappi* (Table 1).

Broadley's hypothesis of the distribution of *Typhlosaurus* is that during interpluvial periods *T. lineatus* was able to extend its range eastwards. During the following pluvial period the ranges shrank leaving

isolated populations in northern Venda, north-western Transvaal and in western Zambia. This is substantiated by the presence of *Mabuya homalocephala depressa* (Peters) at the same locality as *T. l. richardi*. The former, being a coastal species, migrated inland along the dry Limpopo valley and remained separated from the nearest other population in the eastern Kruger National Park when the intervening sands were washed away during subsequent pluvial periods. *T. l. richardi* therefore represents an apparently relict population which, on account of distinct morphological differences, is considered a taxon distinct from other related taxa.

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