

# Angolan Amphisbaenians: Rediscovery of *Monopeltis luandae* Gans 1976, with comments on the type locality of *Monopeltis perplexus* Gans 1976 (Sauria: Amphisbaenidae)

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Angolan amphisbaenids are poorly known as these legless burrowing lizards are seldom found, and field work in Angola was inhibited during the protracted civil war (1975–2002). The last significant discussion of these lizards in the region was the description of three new species from the country (Gans, 1976), much of which was based on historical material. Two new *Monopeltis* were described, including *Monopeltis luandae* Gans 1976 from the Luanda region and *Monopeltis perplexus* Gans 1976 from “Hanha or Capelongo”, the latter collected during the Vernay Angola Expedition (VAE) in 1925. Gans (1976) also re-assessed old material previously identified as *Monopeltis ellenbergeri* Angel 1920 and *Monopeltis granti transvaalensis* FitzSimons 1933 by Monard (1937) from Angola, and re-assigned them to a new species in a revived genus as *Dalophia angolensis* Gans 1976. No additional material of these three species has been collected in the intervening 40+ years.

Various features differentiate other Angolan *Monopeltis* from *Monopeltis luandae* (Gans, 1976):

*Monopeltis vanderysti* Witte 1922 has 18 to 23 dorsal segments to a midbody annulus (29–36 in *M. luandae*) and the nasals and preoculars are separated (in contact in *M. luandae*). In addition, the two species are geographically well separated with *M. vanderysti* largely restricted to the Congo Basin, with a single record at Dundo, north-east Angola.

*Monopeltis scalper* (Günther 1876) is restricted to the Democratic Republic of the Congo (DRC). Although not yet recorded from Angola, it may enter the extreme north of the country. It differs from *M. luandae* in having a pair of preloacal pores (none in *M. luandae*) and only 13 to 19 dorsal segments to a midbody annulus.

*Monopeltis anchietae* (Bocage 1873) is restricted to southern Angola and northern Namibia (Broadley, 1997). The azygous head shields remain discreet in adults (in adult *M. luandae* and *M. scalper* these shields become heavily keratinised and fused at the midline), by having only 5 to 9 caudal annuli (15–16 in *M. luandae*), and a pair of preloacal pores.

*Monopeltis perplexus* Gans 1976 is endemic to Angola but with a confused type locality (see below). It has a greater number of caudal annuli (22–24) and body annuli (261–270) than *M. luandae* (15–16 and 223–227, respectively), and no preoculars.

*Monopeltis infuscata* Broadley 1997 is considered as a northern form of *M. capensis* (*Monopeltis capensis* Group B<sup>†</sup> or ‘var. B<sup>†</sup>’) in Broadley et al. (1976), and was subsequently described as a new species (Broadley, 1997). In Angola it is known from a few specimens from the south of the country. It differs from *M. luandae* in having the azygous head shields almost fully fused but with a small lateral fold in adults, only 179–209 body annuli, 6–10 caudal annuli and 1–2 preloacal pores (Broadley, 1997).

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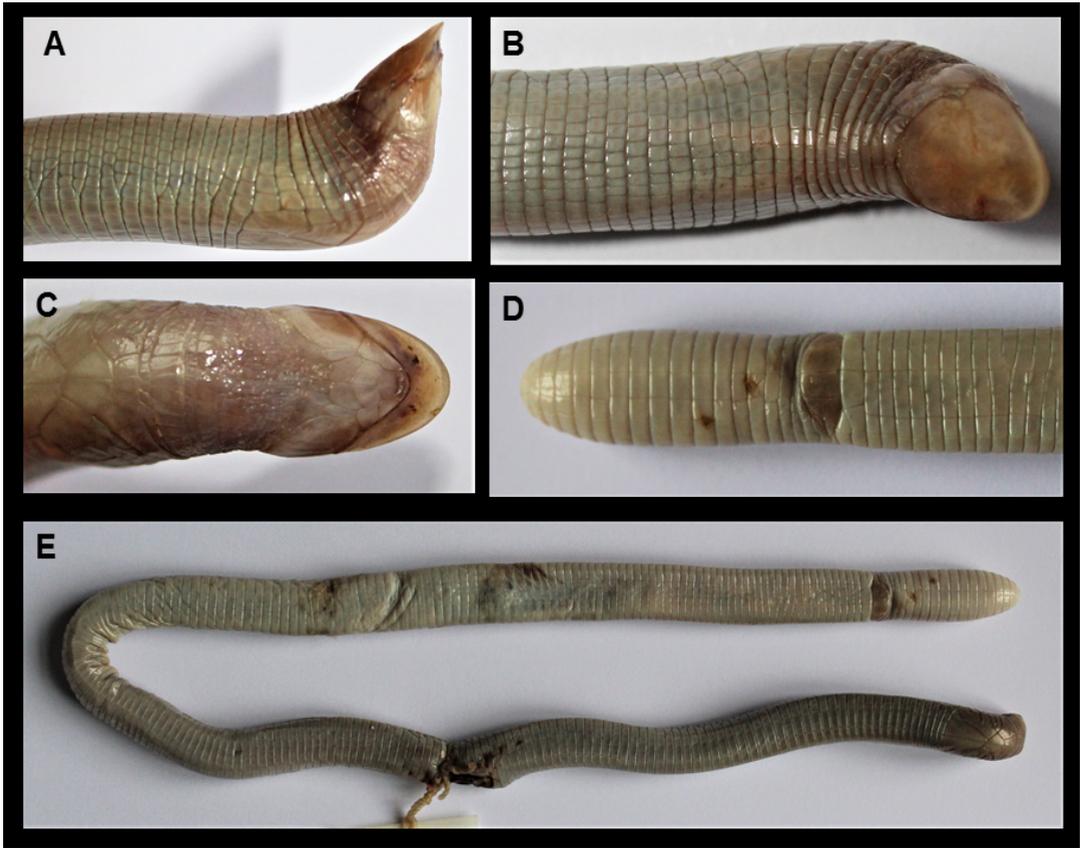
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**Figure 1.** *Monopeltis luandae*. A-E: NB 748, farm near Kikuxi, 27 km SSW of Luanda airport, Luanda Province, Angola. A: lateral view, B: dorsal view, C: ventral view of forebody and head showing absence of pigmentation, typical dorsal cranial flexure of head after death, and heavily keratinized and partially fused azygous head shields of the ‘spade’ with lateral sutures. D: ventral surface of tail, showing 16 caudal annuli and absence of precloacal pores. E: whole body, ventral surface.

### Rediscovery of *Monopeltis luandae*

As was typical at the time, the locality data provided for the four type specimens of *M. luandae* was fairly vague although all were found in close proximity. The holotype was collected “in Luanda on the road toward the mouth of the Quanza (= Cuanza) River”, two paratypes were from “Loanda” (historical spelling) and the other from “the airport, Luanda”.

Two new specimens were collected in August 2016 and March 2018, respectively, in Pleistocene red sands at an agricultural farm at Kikuxi (-09.0606, 13.3539), 27 km SSW of Luanda airport, Luanda Province. The area is disturbed with plantations of cashew and mango trees, as well as papaw and manioc (= cassava), but small patches of natural vegetation remain, including areas of

*Euphorbia conspicua*, *Sterculia africana*, *Andansonia digitata* and *Strychnos* sp. One specimen was deposited in the herpetological collection of the Port Elizabeth Museum, South Africa (PEM R19413), and the other is currently housed at the Instituto Superior de Ciências da Educação da Huíla, Lubango, Angola (NB 748).

Both specimens were in relatively poor condition with skin shedding making the detailed study of scalation difficult. The major scalation and meristic details are:

PEM R19413. Sex undetermined; snout-vent length 375 mm; tail length 22 mm; total length 397 mm; azygous head shields fused midline with large lateral sulci; body annuli 223, with 28 dorsal scutes and 20 ventral scutes in an annulus at midbody; caudal annuli 14; ocular present; lower labials 3 left/3 right; upper labials 2/2; precloacal pores absent.

NB 748. Sex undetermined; snout-vent length 350 mm; tail length 27 mm; total length 377 mm; azygous head shields fused midline with short lateral sulci; body annuli 224; caudal annuli 16; ocular present; lower labials 3/3; upper labials 2/2; preloacal pores absent.

Both specimens can be referred to *M. luandae* as they lack preanal pores, the azygous head shields of the 'spade' in adults are heavily keratinised and fused in the midline but retain lateral sulci, and there are 14–16 caudal annuli and 223–224 body annuli. Their size approaches that of the maximum total length of 412 mm (Gans, 1976).

### Type locality of *Monopeltis perplexus*

*Monopeltis perplexus* was described by Gans (1976) at the same time as *M. luandae*. It was based on a series of five specimens collected during the VAE in 1925 from the vague type locality "Hanha or Capelongo". On his map, Gans (1976) plots these localities in southern Angola but gives no further details. In a companion publication reviewing the genera *Monopeltis* and *Dalophia* in southern Africa, Broadley et al. (1976) included a gazetteer of quarter degree grid coordinates (QDS) for the material they studied, including *M. perplexus*. It listed QDS for Capelongo as 1415C3 and Hanha as 1314D1.

The reptile material collected during the VAE seems unfortunately to have been poorly documented and no monographic treatment was ever published. This poor documentation of VAE material is illustrated in Bogert's (1940) review of African colubrids, which incorporated 202 snakes collected during the VAE, but for which 42 (21%) specimens lacked detailed locality information and were simply listed as from "Angola". Hill and Carter (1941) reviewed Angolan mammals, incorporating material from the VAE, and gave a terse summary of the regions visited by the expedition. They noted that members of the expedition visited Capelongo, one of the putative *M. perplexus* type localities. This is a well-documented locality, i.e. Capelongo [= Folgares], Huíla Province; -14.8917, 15.0917, 1190 m above sea level ~a.s.l., and was followed by Crawford-Cabral and Mesquitela (1989).

There is greater confusion with the locality "Hanha", for which there are various toponyms. These names have been confused in previous Angolan reptile type localities, e.g. *Pachydactylus scutatus angolensis* Loveridge 1944 (see discussion in Branch et al., 2017). The "Hanha" plotted by Gans (1976) and Broadley et al. (1976) for one of the alternate *M. perplexus* type

localities conforms to Hanha (do Cubal) (-13.0917, 14.2083, 940 m a.s.l.), Huíla Province (Crawford-Cabral and Mesquitela 1989). However, Hill and Carter (1941) specifically state that the VAE "went to Hanha Estate (not the Hanha usually given on maps), an oil palm plantation near the coast, some thirty-two kilometres north of Lobito", and this is now Hanha do Norte (-12.2450, 13.7075), approximately 20 km northeast of Lobito, Benguela Province.

As noted earlier, no additional material of *M. perplexus* has been discovered since the type description, and it is still uncertain which of the putative type localities (perhaps both or even neither) is correct. Numerous snakes collected during the VAE, from "Hanha" and "Capelongo" are discussed by Bogert (1940), but with few exceptions they are wide ranging species, and the VAE records do not conflict drastically with their currently known Angolan distributions (Branch, 2018). However, the mixture of semiarid (e.g. *Python anchietae* Bocage 1887) and forest species (e.g. *Naja melanoleuca* (Hallowell 1857) and *Causus resimus* (Peters 1862)) indicates that the catchment for material purportedly collected from Hanha Estate, which is situated in a river valley in coastal arid scrubland, probably extended up into the scarp forests associated with the inland escarpment. The snakes from "Capelongo" (Bogert, 1940) reflect a more homogenous savannah-inhabiting community. *Monopeltis* is a wide-ranging genus, usually associated with Kalahari sands (Broadley, 1997), although this may be overlain with sparse, semi-arid vegetation in the south, or even lowland evergreen forest in the northern Congo Basin (Branch et al., 2003). The habitats and associated snake fauna at both sites give no indication as to which may be the true type locality for *M. perplexus*. Resolution of this awaits directed surveys at the putative type localities and the discovery of new material.

This short note encapsulates many aspects of Angolan herpetological research. The description of new spade-snouted worm lizards by Gans (1976) was one of the few papers published on the Angolan herpetofauna during the extended civil war. It reported on a new species, *M. luandae*, collected around the capital of Luanda but not found again for 45 years; it discussed historical material collected over 50 years earlier during the VAE, including an unusual and new species, *M. perplexus*, from vague and partially confusing locality data in southern Angola; and also reassessed historical species descriptions and records, that were clarified by the description of *Dalophia angolensis* Gans 1976, but which also remains uncollected in Angola since its description.

As fresh material becomes available during modern surveys of the country, its study will require re-assessment of morphological variation within and between new populations of existing species, as well as more detailed documentation of associated habitats and herpetofaunal assemblages. This short note brings clarity to some aspects of these issues with respect to habitat association and morphological variation in *M. luandae*, and also refines knowledge of the possible type locality of *M. perplexus*. It also highlights how much remains to be discovered about the herpetofauna of Angola.

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