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NEWSLETTER EDITOR'S NOTE

Articles shall be considered for publication provided that they are original and have not been published elsewhere. Articles will be submitted for peer review at the Editor's discretion. Authors are requested to submit manuscripts by e-mail in MS Word '.doc' or '.docx' format.

COVER PHOTOGRAPH: *Python natalensis* Photograph by: Graham Alexander

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AHN
AHN FORWARD

LETTER FROM THE CHAIRPERSON

On behalf of the new HAA committee, I would like to thank the members for giving us the opportunity to promote and foster African herpetology for both the established and the next generation of herpetologists. The new committee has met several times since its formation as there were a number of outstanding issues, as well as new initiatives to discuss. We would like to share these with the members. Firstly, our membership has decreased substantially over recent years. We now have less than 150 members. Most of the loss has been from overseas members, most likely due to the lack of a mechanism to make payments to the society. We are looking into new methods, such as PayPal. While ease of payment might boost our membership, the committee also discussed why one would want to be a member. What is the advantage and why should we value membership in the HAA? We tossed around some ideas such as access to the journal, receiving the newsletter and cheaper conference fees. But ultimately, the group agreed that we really are members because it gives us a sense of belonging. We are a community, we have common ground, and we want to encourage others to participate so that herpetology in Africa grows. Thus, our goal for the next 2 years is to support scientific endeavors, to recognize excellence within our community and foster young researchers. Our first obvious step is to update the website and to step things up with social media on the FaceBook page. There will be frequent postings regarding the journal content and other activities. The FaceBook page will also become a more active student forum, where students can post questions and we will encourage our more seasoned members to engage with the students and provide advice.

This is just the beginning of our work and the committee will be meeting fairly regularly so if members have comments or recommendations, please contact us at our new committee email address: haa.herps@gmail.com.

Krystal Tolley
HAA Chairperson

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AHN EDITORIAL

With a new year, comes change and, with change, comes opportunity.

This February, a new HAA committee was elected – a nine-person committee with four new portfolios. Together, we are working to strengthen the HAA and its membership. African Herp News can and will be a key platform to do this by continuing to publish Herpetological Surveys, Natural History Notes, and Geographical Distributions as is demonstrated in this issue; and, starting next issue, publishing one or two popular articles showcasing your recently published work from national or international journals on African herpetology. The aim is to encourage herpetologists (new and seasoned) to promote their work to a broader audience and make everyone more aware of the kind and quality of scientific work taking place within this field. Recently, the work of our previous chairperson, Prof. Graham Alexander, on maternal care in pythons received much-deserved media attention, and this issue's cover photo is in honour of this work. It is up to each and every one of us to promote ourselves and African herpetology, and what better way than through African Herp News. As our new chairperson, Prof. Krystal Tolley, stated in her letter, "We are a community…" and as part of this community, African Herp News is devoted to supporting the work you do. For those interested in more detailed information regarding submitting a popular article for this new section, please do not hesitate to contact me. I will also be revising the Instructions to Authors to assist in future submissions.

May we all help make 2018 a fabulous herping year.

Jessica da Silva
Editor

AHN CORRECTIONS

In the previous issue, an error was printed in one of the abstracts (Issue 66, page 28, Incidence of fire-induced reptile mortality in savanna habitat), which we are rectifying here. The correct authorship and affiliation are as follows:

INCIDENCE OF FIRE-INDUCED REPTILE MORTALITY IN SAVANNA HABITAT

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Fire-prone habitats such as savanna, grassland, and fynbos harbour high reptile diversity. Extralimital documentation of mortality rates from both directly observed mortalities as well as pre- and post-fire population estimates have shown that anthropogenically modified fire regimes may have dramatic effects on reptile communities. Post-fire mortality surveys were conducted in sparse and open woodland on Tembe Elephant Park to evaluate the influence of different functional species traits on fire-induced casualty. Species specific habitat preference, reproductive traits, diet, ability to move through the environment and daily activity was tabulated from literature sources. Two burns were set in mid-August and a third in mid-October by reserve management to combat Terminalia sericea and Dichrostachys cinerea bush thickening. Chelonian specimens were expected but not observed. All samples were composed of squamate taxa. Physical examinations included the post mortem histopathological analyses of samples, external inspection, snout-vent length, and maturity. The mid-October fire had significantly higher densities of mortality specimens than earlier burns. Species utilising fossorial environments made up the majority of all three samples and specimens were associated with woody plant canopy cover and leaflitter. Specimens with SVL less than 100 mm were best represented. External burn damage was uncommon on specimens but occasional oral bleeding was observed in larger individuals. Contrary to smoke inhalation as an expected cause of most mortalities, post mortem histopathology suggested that asphyxiation or non-irritant gas intoxication to be considered as important mechanisms resulting in death for some specimens collected after the mid-October fire.

THE SNAKES OF DODOMA (06° 11’ S, 35° 45’ E), TANZANIA

BARRY HUGHES

INTRODUCTION

A contribution by Vats & Safari (2014: 41) lists 16 species of snakes for the Dodoma Campus of the University of Tanzania which occupies an area of 6,000 hectares. The area is comprised of bushy grassland, scattered rocky hills and a small reserved forest. The site lies in an outlier of Zambezian miombo woodland at 1,120 m altitude and is encircled by an extensive area of “Somalia-Masai deciduous bushland and thicket (White 1981). Collection and observations were made from February/August 2009 to April 2014. From an online source (vertnet.org) I have found three species not previously found or reported by the authors and here discuss another three species that are likely erroneously listed. These errors could have been avoided had the authors been aware of earlier surveys and collections (e.g., Sternfeld 1912), which are accessible in Berlin’s Natural History Museum. Vats and Safari (op. cit.) do not provide the number of specimens seen/collected, but clearly the larger the sample the more species are likely to be encountered. It is hoped that what follows is a more accurate list and that the removal of misleading identifications will make for concordance.

DODOMA SNAKE LIST, WITH COMMENTS

To the Dodoma list of Vats & Safari (op. cit.) I have added three species (3, 4, 17) not found or mentioned by the authors. These species are, however, reported on vertnet.org. Moreover, I delete A - C from their list with comment. Vats & Safari (op. cit.) express no awareness that the length of their species list might reflect the size of their sample. Of their photographs only 2. *Bitis arietans*, 4. *Eryx colubrinus*, 5. *Dasypeltis scabra,* 6. *D. medici* and 16. *Python natalensis* are identifiable. Museum acronyms indicate as follows: BMNH Natural History Museum, London, CAS California Academy of Natural Sciences, San Francisco, MCZ Museum of Comparative Zoology, Harvard, NMK National Museums of Kenya, Nairobi.

1. *Atractaspis bibronii* - Vats & Safari (2014: 43, Table 1).

2. *Bitis arietans* - Vats & Safari (2014: 43, Table1. Also known (MCZ 30425) from Mpwapwa (06° 40’ S, 36° 25’ E), 83 km distant.

3. *Boaedon capensis* - CAS 174044 online as *B. fuliginosus* but having seen photographs of the specimen, the ephithet *fuliginosus* is a blanket name used by Spawls et al. (2002) for two species, the second being *B. capensis* of which a fine picture appears as “Brown House Snake, striped phase” in their book (Spawls et al. 2002: 319). *B. fuliginosus* is black or grey with faint to no head lines, as in Spawls et al. (op. cit., Nakuru specimen). Thanks to Jens Vindum having sent me many pictures of the specimen in the California Academy of Sciences (CAS 174044, Fig. 1) it is clear that this is *B. capensis.*

4. *Crotaphopeltis hotamboeia* - CAS 174042 online.

5. *Dasypeltis medici* - Vats & Safari (2014: 43, Table 1). The occurrence of *Dasypeltis medici* so far inland at this altitude is unexpected. Gans (1959: 151, repeated by Spawls et al. (2002: 417) lists Morogoro as the furthest inland occurrence other than on the southern lowlands (e.g. Liwale), where both *D. medici* and *D. scabra* have been collected by Ionides. However, the photograph is identifiable and may be assumed to be correctly attributed.

6. *Dasypeltis scabra* has not been recorded from Dodoma but the photograph is convincing and MCZ 30205 from Maji Malulu (04° 52’ S, 35° 40’ E) is listed online.

7. *Eryx colubrinus* - Vats & Safari (2014: 43, Table 1). Another even less likely occurrence is otherwise unknown south of the northern boundary of Tanzania (Broadley & Hughes (2000: 8, map). This is a self-evident misidentification of the following species.

8. A. *Hemirhagerrhis kelleri* - Vats & Safari (2014: 43, Table 1). Another even less likely occurrence is otherwise unknown south of the northern boundary of Tanzania (Broadley & Hughes (2000: 8, map). This is a self-evident mis-identification of the following species.

B. *Hemirhagerrhis nototaenia* - MCZ 23071, Loveridge (1928: 55 as *Amplorhinus nototaenia),* Broadley & Hughes (2000: 11), online.

Figure 1. Photograph of *Boaedon “fuliginosus”* CAS 174044 supplied by Jens Vindum, re-identified by the writer as *B. capensis.*

9. *Lycophidion capensis* - Vats & Safari (2014: 43, Table 1) as *L. capense*). *Lycophidion capensis* was once used as a blanket name for specimens from the length and breadth of Africa, but Laurent's (1968: 482) map upon which Dodoma is not plotted and the nearest plots would seem to represent specimens identified as *L. c. loveridgei* or *L. depressirostre.* As the former is likely to prove a distinct species (D. Broadley, pers. com.), it is unfortunate that neither distinguishing features nor voucher specimen receive mention.

10. *Meizodon semiornatus* - Vats & Safari (2014: 43, Table 1).

11. *Naja nigricollis* - Vats & Safri (2014: 43, Table 1).

B. *Psammophis mossambicus* - Vats & Safari (2014: 43, Table 1). Despite surveying extensive American and European collections, I have not seen any specimens from Dodoma that I would assign to *P. mossambicus*. Furthermore, the authors provide no evidence from which to verify their identification as *P. mossambicus*.

12. *Psammophis orientalis* is the name I have given to BMNH 1959.1.3.9 *(vide supra)* and three other specimens (NMK 1730, 1732-4) which do not feature on Vats & Safari's list. Moreover, the authors do not mention *P. rukwae* to which Broadley later assigned much that he and others had earlier identified as *P. sibilans.*

13. *Psammophis sibilans* - CAS 173774 is online as *P. s. sibilans,* Vats & Safari (2014: 43, Table 1). *Psammophis sibilans* is not supposed to occur as far south (Brandstätter 1995: Karte 20, 1996: 94), yet Broadley (pers. com.) identified a Dodoma specimen (BMNH 1959.1.3.91) as of this species before Brandstätter's work.

14. *Psammophis tanganicus* CAS 173794 online, 174043, MCZ 18468, 23073-4 (Bezy & Drewes 1985: 253, Spawls et al. 2000: 390) online, 54750, Vats & Safari (2014: 43, Table 1).

C. *Psammophis sudanensis* - Vats & Safari (2014: 43, Table 1). This citation derives from Loveridge's (1940: 50) revision but more recent work has excluded this taxon from Tanzania (Hughes, in prep.).

15. *Python natalensis* Vats & Safari (2014: 43, Table 1). Classification as *P. natalensis* is questionable. A more likely identification would be *P. sebae* as the name of the African Rock Python, particularly as Spawls et al. (2002: 309) mention the occurrence of intermediates ("hybrids") at Morogoro, about 220 kilometres east of Dodoma. As above, this likely error highlights the authors' lack of familiarity with the literature.

16. *Rhamphiophis rostratus* CAS 173772-3 online as R. oxyrhynchus, MCZ 18214, 18460, online as R. oxyrhynchus or R. o. rostratus, Vats & Safari (2014: 43, Table 1).

17. *Scaphiophis albopunctatus* MCZ 23069 Loveridge (1928: 53), Broadley (1994: 7), USNM 72469, 6047091: all online. As a precautionary note I am including the following record as it also bears the name of Dodoma. "Dodoma" is often applied to a wider area and therefore one needs to be cautious accepting records with this name. It is common practice to name regions/districts after the main city/town.

A Black Mamba, *Dendroaspis polylepis* (MCZ 22995) is known online from Bahi (05° 59' S, 35° 19' E), Dodoma Region.

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Psammophis crucifer
(Daudin, 1803)
Cross-marked Grass Snake

EFFECT OF DROUGHT ON HATCHING SUCCESS OF EGGS

R. C. BOYCOTT

The Cross-marked Grass Snake (*Psammophis crucifer*) was first recorded from Swaziland from three localities in the western part of the country (Boycott 1992). The species is restricted to the highveld region of the country (Boycott 1992, Boycott & Culverwell 1992) and is endemic to southern Africa having been recorded from South Africa, Lesotho, Swaziland and Zimbabwe (Bates et al. 2014). The species occurs mainly in the grassland, savanna and fynbos biomes but also in some of the semi-arid regions of South Africa.

Reproductive data on *Psammophis crucifer* has been documented on several occasions (FitzSimons 1962, Rose 1962, de Waal 1978, Broadley 1983, Kunzi 1984, Haagner 1988, Branch 1988, 1998, Jacobsen 1989, Flemming 1994, Marais 1992, 2004, Cottone & Bauer 2010). The present paper presents new information on oviposition, incubation and hatching times in *P. crucifer* and summarizes what is known of the size and mass of eggs and neonates. The susceptibility of hatching success in *P. crucifer* and another species occurring in the same habitat, *Psammophylax rhombeatus*, with regard to recent drought conditions in western Swaziland is discussed.

Fieldwork was carried out in Malolotja Nature Reserve (ca 26°08'26"S; 31°08'13"E) situated in the Afromontane grassland biome of western Swaziland. The vegetation type is described as Barberton and Kangwane Montane Grassland (Dobson & Lotter 2004). Snake eggs were searched for under rocks at two sites near the main entrance gate of the reserve. A single clutch of nine eggs was discovered. Egg size and mass were measured using a Mitutoyo Vernier caliper and a Highland HCB602H electronic scale with an accuracy to two decimal points. Neonate measurements were made using a millimeter ruler and their mass was recorded on the electronic scale. Eggs were incubated in a circular opaque plastic tub 110 mm in height and 120 mm in diameter placed on a south-facing windowsill in the writer's study that was never in direct sunlight. The substrate used was sterilized river sand at a depth of 20 mm. Humidity was maintained by adding water to the sides and lid of the container at regular intervals. Temperature was recorded irregularly until the eggs hatched and ranged between 16°C and 30°C, but mostly between 20°C and 28°C. For the period of study maximum monthly temperatures and total rainfall figures were obtained from the Malolotja Nature Reserve weather station. Within 10 days of hatching the neonates were released at the site of oviposition in the nature reserve. Additional observations are presented on a clutch of thirteen eggs of the sympatric *Psammophylax rhombeatus* from a second locality, 4 km south of Forbes Reef (ca 26°11'55"S; 31°04'43"E) during the same period of study.

De Waal (1978) collected gravid females of *Psammophis crucifer* from September to November but did not observe oviposition. Kunzi (1984), Haagner (1988), Branch (1988, 1998) and Jacobsen (1989) record oviposition in *P. crucifer* in mid-summer and late summer. Flemming (1994) states that ovulation and oviposition in *P. crucifer* occurs from spring to early summer based on his findings of post-ovipository females in October and November. This is supported by the findings of Cottone & Bauer (2010) who recorded the majority of sexually active females being collected in the spring (September to November). Flemming (1994) provides the first indication of oviposition occurring as early as October. This was confirmed during the present study when a clutch of 9 eggs was discovered under a rock slab in unburned grassland on 2 October 2015 (Fig. 1, Table 1). At the time the identity of the eggs was not known and four eggs were collected for incubation and the remaining five left *in situ*. The size and mass of the four eggs were recorded and two weeks later the writer returned to the site to measure the sizes of the remaining five eggs. The sizes of the eggs fall within the size range recorded by other authors (Table 2). In conclusion, oviposition in *P. crucifer* has been recorded from spring (October) through to mid-summer (November and December), and clutch size ranges from 3 to 13 eggs (Tables 1 & 2).

Haagner (1988) provides the first mass measurements of *P. crucifer* eggs and reports on a clutch of 5 eggs laid by a captive snake in which egg mass ranges from 3.3 g to 4.4 g (mean 3.96 g). Jacobsen (1989) records egg mass within the same range. The masses of the four eggs collected in Malolotja Nature Reserve range from 2.76 g to 3.24 g with an average mass of 2.91 g. Reports on copulation and gestation period in *P. crucifer* seem to be lacking. However, Flemming (1994) found that peak spermatogenesis in males of this species occurred from autumn

Figure 1. *Psammophis crucifer* eggs in situ in Malolotja Nature Reserve, Swaziland. (Photo R.C. Boycott)

Figure 2. *Psammophis crucifer* neonate from Malolotja Nature Reserve reared in captivity. (Photo R.C. Boycott)

Figure 3. *Psammophylax rhombeatus* egg clutch of 13 from south of Forbes Reef, Swaziland. (Photo R.C. Boycott). Only three of the eggs hatched.

to summer suggesting that copulation could possibly take place between May and September. This is supported by the more recent findings of Cottone & Bauer (2010) who found that males with swollen testes and sperm in the efferent ducts were collected most often in spring and autumn. During a visit to the study site on 4 July 2015, the writer found an adult male and an adult female *P. crucifer* under the same rock. Although speculative, the date falls within the range of sexually active males as revealed by the studies of Flemming 1994 and Cottone & Bauer (2010), and could suggest that copulation in *P. crucifer* occurs during the winter.

Information on the incubation period of *P. crucifer* is scarce and only one report of incubation could be found. This relates to a clutch of 8 eggs laid by a captive snake in December (exact date not given), incubated at a temperature of 29°C to 30°C, which hatched after 45 days (Kunzi 1984). During the incubation period high humidity was maintained with 65% being recorded during the day and 95% at night (*vide* Jacobsen 1989). The Malolotja Nature Reserve clutch of nine eggs was discovered on 2 October and appeared very fresh, being virtually pure white with a slight pink tinge on the dorsal surface, and could have been laid within a few days of them being found (Fig. 1). After an incubation period of between 132 and 136 days three of the four eggs that had been kept hatched. The remaining egg failed to develop fully and has been preserved. The temperature at which the eggs were incubated ranged from 16°C to 30°C, but mostly between 20°C and 28°C. The incubation period recorded by Kunzi (1984) must surely be considered the exception rather than the rule and was probably very quick considering the constant high temperatures (29°C to 30°C) at which the eggs were incubated. The Malolotja eggs experienced a more natural variation in temperature during incubation. Assuming that the clutch was found within a few days of being laid, the incubation period for *P. crucifer* eggs in this case is probably around 140 days.

Table 1: Oviposition and hatching times in *Psammophis crucifer*.

Oviposition (month/season)	Clutch size (n)	Hatching (month)	Incubation period (days)	Source
December	8	(?) Januuary to February	45	Kunzi (1984)
November	5	Failed to hatch	-	Haagner (1988)
mid-summer	5 to 13	-	45	Branch (1988)
mid- to late summer	13	-	-	Jacobsen (1994)
October/ November	4 to 13	-	-	Flemming (1994)
mid-summer	5 to 13	-	45	Branch (1998)
spring	4 to 10	-	-	Cottone & Bauer (2010)
October	9	February	circa 140	Boycott (this study)

Table 2: Size and mass of *Psammophis crucifer* eggs.

Clutch size (n)	Egg length (mm)	Egg width (mm)	Mass (g)	Source
6	21.0 (max 32.0)	18.0	-	FitzSimons (1962)
6	18.0	-	-	Rose (1962)
5	-	-	-	Broadley & Cock (1975)
3 to 13	31.0	9.0	-	de Waal (1978)
13	21.0 (max 32.0)	18.0	-	Broadley (1983)
8	-	-	-	Kunzi (1984)
5	30.8 to 36.1	12.0 to 14.0	3.3 to 4.4	Haagner (1988)
5 to 13	18.0 to 21.0 (max 32.0)	10.0	-	Branch (1988, 1998)
13	21.0	18.0	3.3 to 4.4	Jacobsen (1989)
3 to 13	18.0 to 21.0 (max 36.1)	9.0 to 10.0	-	Marais (1992, 2004)
9	23.8 to 29.7	12.5 to 13.5	2.76 to 3.24	Boycott (this study)

The sizes of neonate *P. crucifer* have been documented on only a few occasions (Table 3). Jacobsen (1989) provides the first report of size and mass in neonate *P. crucifer* and records a total length of 186 mm to 203 mm. Marais (1992, 2004) records a total length of between 180 mm and 200 mm, and Branch (1998) records a total length of 195 mm. The three neonates from the Malolotja clutch have a total length of 158 mm to 167 mm, with an average of 161 mm, which is smaller than the neonate sizes previously recorded. Jacobsen (1989) also provides the first report of mass in neonate *P. crucifer* and records a mass ranging from 1.65 g to 2.10 g. The three Malolotja neonates have a mass of 1.72 g to 1.95 g (Table 3) which falls within the range given by Jacobsen (1989).

Additional observations on a second species, *Psammophylax rhombeatus*, were also made in early December 2015 and Febru-

Table 3: Size and mass of *Psammophis crucifer* neonates.

SVL length (mm)	Tail length (mm)	Total width (mm)	Mass (g)	Source
142.0 to 153.0	44.0 to 50.0	186.0 to 203.0	1.65 to 2.10	Jacobsen (1989)
-	-	180.0 to 200.0	-	Marais (1992, 2004)
-	-	195.0	-	Branch (1998)
125.0 to 134.0	33.0 to 34.0	158.0 to 167.0	1.72 to 1.95	Boycott (this study)

Table 4: Rainfall figures for October to January over last three summers at Malolotja Nature Reserve.

Season	October	November	December	January	Total
2013/2014	159.7 mm	119.0 mm	260.6 mm	175.6 mm	714.9 mm
2014/2015	72.6 mm	122.7 mm	191.7 mm	28.4 mm	415. mm
2015/2016	28.4 mm	31.1 mm	88.4 mm	95.5 mm	243.4 mm

ary 2016. At a locality about 4 km south of Forbes Reef and near Malolotja Nature Reserve, an adult *P. rhombeatus* was found under a rock slab with 13 eggs, most of which were showing signs of dehydration (Fig. 3). On revisiting the site in early February it appeared as though only three of these eggs hatched (23.0%), this being determined by careful and thorough examination of the eggshells.

The summer of 2015/2016 in Swaziland was exceptionally dry and hot with approximately half the amount of rain falling at Malolotja by the end of January than is the norm, and higher maximum monthly temperatures than previous years (see Tables 4 and 5). It appears as though these climatic factors, which also affect humidity, might have had a significant effect on the hatching success of some snake eggs. The wild clutch of five *P. crucifer* eggs was checked three times between October 2015 and January 2016, and by early February the remaining eggs appeared dehydrated and were clearly not going to hatch. The eggs were collected on 7 February 2016 and retained as a voucher specimen (RCBS2237), together with the shells of the hatched eggs, and the undeveloped embryo. Although there was an element of human intervention the hatching success for this clutch was 33.3% and naturally would probably have been much less had the eggs been left in the field. It appears as if one of the most important factors during the incubation period of reptile eggs is the maintenance of optimum humidity in order for the eggs to develop successfully.

Although the present report is centred on only two clutches of snake eggs, it may be concluded that the drought experienced during the summer of 2015/2016 in western Swaziland appears to have adversely affected hatching success of eggs in *Psammophis crucifer* and *Psammophylax rhombeatus*. As a large part of the subcontinent also experienced an unusually dry and hot summer it would be interesting to see if any other instances of poor hatching success in reptiles were recorded.

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AHN
NATURAL HISTORY
Notes

LAMPROPHIIDAE

Psammophis crucifer
(Daudin, 1803)
Cross-marked Sand Snake

DEATH-FEIGNING

M. F. BATES & D. BOSHOFF

Death-feigning has been recorded in 12 species of snakes in southern and eastern Africa, including psammophylid snakes in the genera *Psammophylax* and *Psammophis* (see Bates & Nuttall 2013). In psammophylid snakes death feigning occurs when the snake rolls partly or completely onto its back with the underside facing upwards. In July 2013 an adult Cross-marked Sand Snake (*Psammophis crucifer*) was found by DB under rock in grassland near the Mooi River, about 2.5 km east of the town of Mooi River, Umgunglovu district, KwaZulu-Natal, South Africa (29°12'20.6" S, 30°01'20.7" E; 2930AA; 1373 m a.s.l.). After only a couple of minutes of handling the snake for photographic purposes, it turned completely onto its back exposing its underparts (Fig. 1). It remained in this position for several minutes after which time it turned over of its own accord and then moved away with no signs of discomfort. This is the first record of death feigning in this species; the only other species of *Psammophis* known to do so is *P. angolensis* (see Bates & Nuttall 2013).

Figure 1: Death-feigning behaviour by a specimen of *Psammophis crucifer* collected near Mooi River, KwaZulu-Natal, South Africa. (Photo: D. Boshoff)

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GEKKONIDAE

Afrogecko porphyreus
(Daudin 1802)
Marbled African Leaf-Toed Gecko

REPRODUCTION

E. HESTER, A. SCHAEFER & A. M. BAUER

Afrogecko porphyreus is distributed widely in temperate regions of South Africa, especially in the Western Cape (Branch 1998, 2014) and is generally the most commonly encountered species of gecko along the south coast of South Africa, especially in edificarian habitats, where they may take advantage of artificial lighting that attracts prey (Branch 1998; Perry et al. 2008). Oviposition in this species occurs chiefly in summer months (Branch & Hanekom 1987) and, as in most gekkonids, clutch size is two. In natural habitats eggs may be laid under stones (FitzSimons 1943), in rotting tree stumps (Branch & Hanekom 1987), under tree bark, in rock cracks (Branch 1998) or in other protected areas. However, in commensal situations, eggs may be laid in any protected location, including amongst rubbish (Branch 1998). We report on an amusing case of an oviposition site at Storms River Village, Western Cape Province (33°58′15″ S, 23°53′00″ E) in an anthropogenic environment. In February 2017 one of the authors (EH) removed a beaded-wire chameleon (total length approximately 30 cm, of which the tail was half) that had been hanging beneath a pergola at a private residence. The body of the wire lizard was found to contain the shells of three hatched eggs, two near the center of the body and one near its tail base (Fig. 1). Egg size was within the range of 7.0–8.0 X 8.7–11.0 mm previously reported for *A. porphyreus* (FitzSimons 1943; Branch & Bauer 1995; Branch 1998) but out of range for the smaller *Lygodactylus capensis* and larger *Hemidactylus mabouia*, the only other climbing geckos occurring in the area, and both introduced. The spacing of wires on the underside of the lizard would have likely admitted the body of the female only at the larger gaps. The wire lizard provided an ideal oviposition site as the eggs were not visible from the dorsal side, were protected from predators and were exposed to good airflow. Whether one female laid all three eggs (presumably as parts of more than one clutch) or the eggs were those of more than one female is unknown, as communal egg-laying is common in the species (FitzSimons 1943; Branch & Hanekom 1987; Branch 1998).

Figure 1. Ventral view of body and anterior portion of tail of wire lizard in which three hatched *Afrogecko porphyreus* eggs were found at Storms River Village.

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LACERTIDAE

Latastia longicaudata
(Reuss, 1834)
Common long-tailed Lizard

DIET

S. KIRCHHOF, L. B. LOSOGO, C. S. GOOSH, K. SAITOTI & P. K. MALONZA

On 31 March 2017, during a survey of the fauna and flora of the Sibiloi National park, an adult *Latastia longicaudata* (Reuss, 1834) was observed swallowing a highly venomous scorpion *Parabuthus liosoma* (Ehrenberg, 1828) in bushy vegetation along a dry riverbed about 22 km inland of the eastern shore of Lake Turkana, Marsabit County, northern Kenya (N 4° 0'5.69"; E 36°24'41.49"; 460 m a.s.l).

Very little is known about the feeding behaviour of *L. longicaudata* and its selection of prey. In general, this species' diet is reported to consist of insects and other arthropods (Spawls et al. 2002). The only empirical study known to us on diet of *L. longicaudata* was conducted in central Kenya (Isiolo District) during the dry season (July, August) of 1987 (Hardy & Crnkovic 2006). Here, stomach analyses revealed that 96% of prey items consumed by *L. longicaudata* (N = 7) were termites and another 0.7% were ants (the rest comprised Orthoptera, Coleoptera larvae (Scarabaeidae) and more Hymenoptera (wasps); Hardy & Crnkovic 2006).

Lizards and scorpions have been reported to be involved in cross predation, meaning they belong to taxa eating each other over the course of ontogenetic development (McCormick & Polis 1982). Lizards may even form important parts of the diet of scorpions, particularly in arid regions (Castilla et al. 2009). McCormick & Polis (1982) reported nine different lizard genera (both diurnal and nocturnal) that get preyed on by scorpions of the families *Scorpionidae* and *Buthidae*. On the other hand, it was shown in a review, that for example 12 species of gekkonid lizards had up to 15% scorpions in their diet volume (Polis et al. 1981). For the Sinai Fan-fingered gecko (*Ptyodactylus guttatus* Heyden, 1827), it was shown not only that they preyed upon the highly toxic Israeli yellow scorpion *Leiurus quinquestriatus hebraeus* (Birula, 1908), but also they appeared to be physiologically tolerant towards its venom as opposed to the allopatric *Ptyodactylus puiseuxi* Boutan, 1893 (Zlotkin et al. 2003). Lizards of the family Lacertidae both occasionally eat and get eaten by scorpions (Pianka et al. 1979, Huey et al. 2001, Castilla et al. 2008, 2009, Edwards et al. 2013). One Kalahari lacertid, *Nucras tessellata* (Smith, 1838) may be specialized in feeding on scorpions, at least during certain periods of the year (Huey & Pianka 1981, van der Meer et al. 2010, Edwards et al. 2013). In extremely arid or otherwise depauperate environments with limited arthropod prey, scorpions may form an important prey source to lizards given that they are large and considered to be energetically rich prey (Pianka, 1986). It may well be that as a result of the current ongoing drought in northern Kenya, *L. longicaudata* was forced to scavenge for alternative, highly nutritious prey items such as scorpions.

When we detected the *L. longicaudata* individual with the scorpion that day at 3.30 pm in the arid savannah of Sibiloi National Park, the scorpion was already missing its head and most of its legs (Fig. 1A). We cannot be sure if the lizard killed the scorpion and already removed the legs or if the scorpion was found dead and subsequently devoured. Studies on *Parabuthus liosoma* from Isiolo (Kenya) have shown that this species carefully ponders before using the stinger, and stinger use decreases depending on the resistance and size of the opponent (Rein 1993). It may well be that *L. longicaudata* was able to overpower the scorpion. In any case, despite the remarkable size of the scorpion, in the end the lizard managed to swallow its remains (Figs. 1B-D). Whether *L. longicaudata* is able to kill a live *Parabuthus liosoma* remains to be confirmed.

Figure 1 A-D: *Latastia longicaudata* with *Parabuthus liosoma* shortly after we discovered it (A), handling and re-arranging the scorpion (B, C) and finally swallowing it (D).

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TESTUDINIDAE

Homopus signatus
Gmelin, 1789
Speckled Padloper

TWO-EGG CLUTCHING

F. H.A. VAN LOON

On 23 september 2015, I received a male and female Speckled Padloper, imported from South Africa for the conservation-breeding programme of the Homopus Research Foundation. This couple was acclimated from southern to northern hemisphere conditions at my location (Belgium). At the time of import, both animals were fully grown, the female weighed 200 g (SCL 107.3 mm, SH 47.5 mm and SW 81.8 mm) and the male 99 g (SCL 92.0 mm, SH 34.5 mm and SW 63.2 mm). Fully grown speckled padlopers will only grow further at a very slow rate. On 22 October 2015, the female of this single-egg producing species (e.g., Loehr et al., 2011) laid her first egg in captivity. The egg weighed 16.7 g and measured 35.5 by 28.1 mm. The egg was buried at shallow depth, at a site that was partly covered by foliage from a plastic plant. Body mass of the female was 238 g on 22 November 2015, 223 g on 26 December 2015 and 230 g on 21 February 2016.

I frequently observed mating behavior from December to April in 2015-2017. Additional single egg clutches were discovered at the same egg-laying site on 20 May 2016 (egg buried and weighing 13.2 g), 16 June 2016 and 16 January 2017 (egg buried, probably laid several days before it was discovered, weighing 16.7 g and measuring 35.7 by 28.6 mm). The egg-laying site was checked on 20 February 2017, but no eggs were found.

On 23 February 2017, a two-egg clutch was discovered at the egg-laying site. Both egg were only partly buried. The female was sitting next to the egg-laying site and appeared exhausted. She moved very little when picked up and weighed 212 g. One egg weighed 15.5 g and measured 35.4 by 26.9 mm. The second egg weighed 14.0 g and measured 31.7 by 27.8 mm. Both eggs appeared fresh, the egg-shells were still moist and the eggs still had their pinkish egg-shell coloration. When candled, both eggs showed that the egg yolk had not set. On 27 February, both eggs had developed a clear, broad white band (approximately 1.5 cm in width), indicating that they were developing. On 3 March, candling revealed that the egg yolks in both eggs had set and by 14 March blood vessels had developed in both eggs.

All published information on reproduction in Speckled Padlopers reports single-egg clutches, with the exception of two cases where a small, marbled-sized egg was produced together with a normal egg (Morgan, 1993; V.J.T. Loehr, pers.). My observation demonstrates that a Speckled Padloper female with a straight carapace length (SCL) of 107.3 mm, is physically able to produce two normal-sized (i.e., Loehr et al., 2011), fertile eggs in a single clutch.

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LAMPROPHIIDAE

Lamprophis guttatus
(A. Smith 1844)
Spotted House Snake

DIET

R. VAN HUYSSTEEN & M. PETFORD

On the 11th January 2014 at 11am while on a guided walk at Telakishi Cultural Village near Masebe Nature Reserve, Limpopo (-23°41'4 2.3168", 28°34'38.0244"), an adult *Smaug breyeri* (Waterberg Dragon Lizard) was observed hanging from a vertical crevice, close to the ground, on a sandstone outcrop. On closer inspection it became apparent that the lizard was being consumed by a large *Lamprophis guttatus* (Spotted Rock Snake). The *Smaug breyeri* was already dead and was being consumed head first. After taking some photos we retreated and left the snake to consume its meal. After 45 minutes I returned and both the snake and the lizard were gone (presumably the snake had eaten the lizard and hidden away to digest the animal). The record was uploaded to SARCA (VM9963).

This is the first documented record of lizards from the genus *Smaug* being eaten by *Lamprophis guttatus,* adding to a growing list of known Cordylid prey including *Karusosaurus polyzonus* (Taft et al. 2017) and *Pseudocordylus melanotus subviridis* (Branch and Burger 1991). The most common form of prey for *L. guttatus* are rupicolus lizards such as geckos, skinks and lacertids (Branch 1998; Marais 2004). *Agama atra* has also been recorded in their diet (Helm 2015). As *Lamprophis guttatus* and *Smaug breyeri* share the same rupicolus habitat and both occupy cracks, these predations are not completely unexpected due to the opportunistic manner in which these snakes hunt.

Fig. 1. *Lamprophis guttatus* swallowing *Smaug breyeri.* Near Masebe Nature Reserve. Photo Ryan van Huyssteen.

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VARANIDAE

Varanus albigularis albigularis
Daudin, 1802
Rock monitor

SEVERE FACIAL MYIASIS

P.R. JORDAAN

During priority species monitoring for Wildlife ACT on the 3rd of November 2014 at the Mkhuze Game Reserve (iSimangaliso Wetland Park), a Rock Monitor *Varanus albigularis albigularis* (Daudin, 1802), estimated at 0,4 m snout-vent length, was encountered on a low water bridge close to the Mshopi gate and camping area (27°38'14,89" S 32°9'30,53" E). It was evident from a distance that the monitor lizard was emaciated. Upon approach, it tried to flee, but was easily captured. Overall body condition was exceptionally poor with skeletal features protruding from beneath the skin (Fig. 1 D). Extensive facial injuries were severe with pronounced degradation of the fleshy nasal structure exposing the premaxilla, maxilla, nasal bones, the lower jaw as well as the anterior edge of the frontal bone. The dentition was partly exposed between the remnants of desiccated flesh. Colonies of maggots were observed as cream coloured patches along the edge of necrotic and live facial tissue concentrated below the right eye, right cheek, as well as the right ocular, pre-ocular, and frontal regions. Although the larvae were not collected or positively identified, the presence of adult *Chrysomya albiceps* (Wiedemann, 1819) landing on the wound during examination, may suggests that the larvae belong to the same species. Skin was in the process of peeling away from the jaw and throat. An excavated cavity exposing the jugal bone, presumably created by feeding maggots, was present below the left eye which was achromatic and blind. Ticks were present in the excavated cavity. Due to the extent of its injuries and degraded physical state, the decision was made to euthanise the individual. The specimen was not collected.

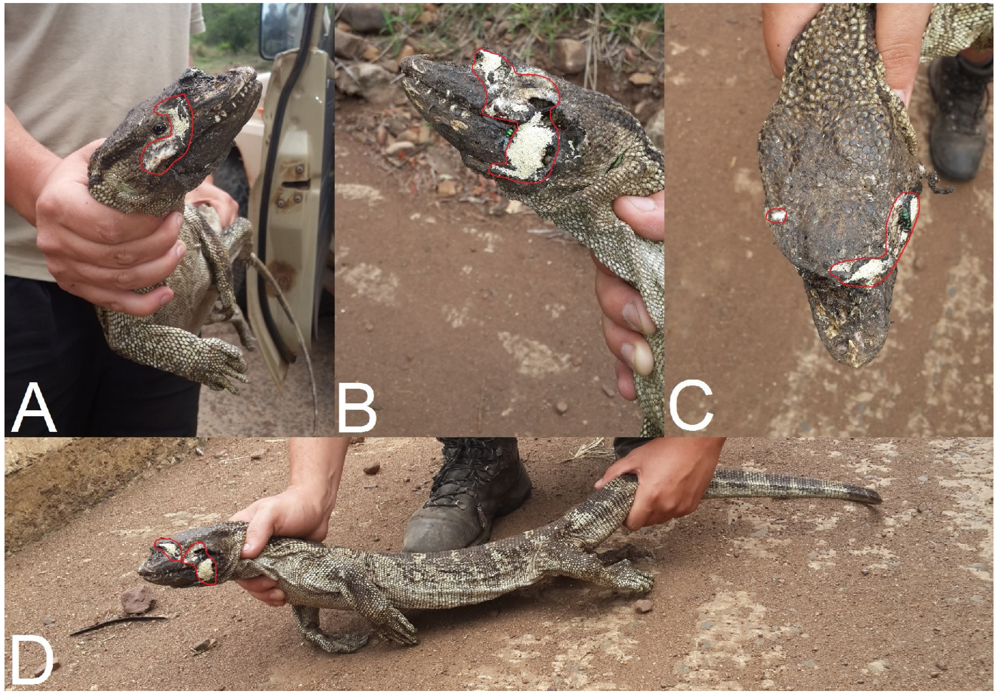

Figure 1. The injuries sustained by the *Varanus a. albigularis* (Daudin, 1802) illustrating the extent of myiasis on the right (A), left (B), and top of the snout (C) with active maggot colonies (white blotches on the face) as well as the overall physical condition of the body (D). Photos: Pippa Orpen.

Myiasis (invasion of live vertebrate tissues by dipterous larvae) results from fly eggs being laid on wounds with maggots, feeding on live or dead host tissue after emergence (Klingenberg, 2007). The origin of such an initial wound can only be speculated on. Wounds arising from conspecific conflict is deemed unlikely as altercations between animals of both the opposite and same sex does not result in physical injury, with male to male aggression limited to territorial chases (Phillips & Millar 1998). Raptors such as the Martial Eagle *Polemaetus bellicosus* (Daudin 1880), African Crowned Eagle *Stephanoaetus coronatus* (Linnaeus, 1766) and Black-chested Snake Eagle *Circaetus pectoralis* (Smith 1829) are well known predators of monitor lizards (Hockey *et al*. 2005) but captured *Varanus* often escape (Pienaar *et al*. 1983) baring extensive wounds. The face and specifically the eyes are targeted during initial immobilisation (Pooley 1967) but ventral wounds associated with failed avian predation were absent on the individual in question. Wounds originating from high tick loads have been recorded to precede myiasis in reptiles (Klingeberg 2007). *Varanus a. albigularis* is known to suffer from extensive tick infestations on areas of the body with softer skin such as the limb joints, cloaca, skin around the eyes and even inside the nostrils (Branch, 1998; Jacobsen, 2005). *Amblyomma exornatum*, *A. hebraeum*, *A. marmoreum*, *A. nuttalli* and *Rhipicephalus gertrude* ticks have all been recorded in *V. a. albigularis* (Horak *et al.*, 2006) with specific reference made of severe male *Amblyomma* infestations in the nasal passages of monitor lizards causing tissue damage and open wounds (Jaconsen, 2005) which in the authors opinion offers the best explanation for the genesis of the myiasis in this case as the damage was centred and most severe around the snout.

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CROCODYLIDAE

Crocodylus niloticus
(Laurenti, 1768)
Nile crocodile

HUNTING BEHAVIOUR

P.R. JORDAAN & X. COMBRINK

Tembe Elephant Park (TEP) houses a small population of Nile crocodile *Crocodylus niloticus* (Laurenti, 1768) largely restricted to a series of pans in the northern section of the Muzi Swamp (Tembe Elephant Park 2015) and the only source of natural permanent surface water on the reserve (Matthews *et al*. 2001). Crocodiles generally congregate in these pans during the dry winter period, with individuals moving southwards in the swamp during summer depending on rainfall and surface water availability. During summer, some crocodiles settle in tourist accessible areas. In winter or periods of drought, however they are rarely seen by visitors as access to the northern section of TEP is limited to Ezemvelo KwaZulu-Natal Wildlife staff (Tembe Elephant Park, 2015).

On the 17th of January 2015 during priority species monitoring for Wildlife ACT, a 2.5 m (estimated length) *C. niloticus* individual was observed in a shallow pan in front of the Ponweni hide (26°56’49,24” S; 32°31’28,17” E). The crocodile actively hunted for frogs (most likely *Xenopus* Wagler 1827) among submerged vegetation growing at the water’s edge (Fig. 1). As apex predators, Nile crocodile target a wide variety of prey items which at the individual level reflects an ontogenetic shift in prey preference (Cott 1961; Pooley 1980; Wallace *et al*. 2008; Radloff *et al*. 2012). Hatchling and juvenile *C. niloticus* are known to prey on adult anurans and even tadpoles, but in most studies analysing stomach content, no amphibians were recorded for individuals longer than 2 m (Corbet 1959; Wallace & Leslie, 2008) with the exception of a single account by Cott (1961). Adult *C. niloticus* feed primarily on fish (especially *Clarias* Scopoli 1777), as well as crustaceans, molluscs, reptiles, avifauna and to a lesser extent on mammals (Cott 1961; Branch 1998; Wallace & Leslie, 2008). Eight fish species including *C. gariepinus* have been recorded in TEP (Tembe Elephant Park 2015), but no fish activity was observed from the hide.

Figure 1. The observed sub-adult Nile crocodile *Crocodylus niloticus*, with the hind leg of a captured frog (circled) protruding from its mouth.

Three hunting attempts were witnessed between 09:30 and 10:00 during cloudy weather. Each attempt followed a similar sequence of behaviour (Fig. 2), focussing on the same section of shoreline. The crocodile approached the shoreline swimming slowly (A), stopping in front of the bank (B) before making powerful sideway movements with its tail (C), propelling itself forward in a lunge (D), grabbing a frog along with a mouthful of vegetation before lifting its head above the water (E) and then submerging its jaw moments later to manoeuvre the frog deeper into the mouth, while separating it from the vegetation (F) before swallowing. After each hunting attempt the crocodile would retreat away from the bank to the far side of the pan before approaching the shoreline again

Figure 2. Photo sequence documenting a Nile crocodile *Crocodylus niloticus* hunting frogs in the vegetated shallows at Ponweni hide, Tembe Elephant Park.

after several minutes. All three hunting attempts witnessed were successful.

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SCINCINAE

Trachylepis occidentalis
(Peters, 1867)
Western Three-striped Skink

AVIAN PREDATION

P. CUNNINGHAM

Although lizards are known to fall prey to a variety of predators (e.g. Branch 1998, Marais 1992, Alexander & Marais 2007) there is often a paucity of data regarding specific species and/or predators with most data on predators being anecdotal. This is especially true for the genus *Trachylepis*. However, some predators are mentioned, albeit mostly at genus level – e.g. Shine et al. (2006) include *Trachylepis* in the diet of Psammophiine (Colubridae) snakes; Marais (1992) include *Trachylepis* spp. in the diet of the Cape wolf snake (*Lycophidion capense*); Branch (1998) indicate that domestic cats prey on *Trachylepis capensis* and Clauss & Clauss (2002) mention snakes, monitors, raptors, small mammals (e.g. shrews, mongoose, African wild cat and domestic cat) preying on *Trachylepis wahlbergii*. Known avian predators of *Trachylepis* spp. are various raptors and lilac-breasted roller (Clauss & Clauss 2002).

On 21 July 2017 I found a juvenile *Trachylepis occidentalis* individual (SVL 50 mm & Tail 78 mm – identified by colour pattern and known presence on the farm) impaled on a *Rhigozum trichotomum* shrub (at a height of 70 cm on a shrub with a total height of 100 cm) by a common fiscal (*Lanius collaris*) on a farm approximately 70 km northeast of Noordoewer in the Karas Region, southern Namibia (28°16'12.7"S & 18°03'44.1"E; 740m). Although the actual impaling process was not observed, this is inferred as common fiscal are resident on farm and often seen preying on invertebrates (Fig. 1).

Common fiscal's have a catholic diet and are known predators of vertebrates - e.g. blindworms, lizards, chameleons, snakes, frogs, birds, rodents, bats (Hockey *et al.* 2005) although these usually make up a small percentage of the diet (e.g. <10% of the diet in KwaZulu/Natal – e.g. Soobramoney *et al.* 2004). Prey items are often impaled or wedged on thorns, wood splinters, and barbs of wire fence (Hockey *et al.* 2005) which serves as a 'storage' function (Bevan & England 1969) or as a display for territorial advertisement and to attract females (Yosef & Pinchow 1989). However, common fiscal do not cache as much as their northern hemisphere counterparts (Harris & Arnot 1988).

Figure 1. Juvenile *Trachylepis occidentalis* impaled on *Rhigozum trichotomum* shrub by common fiscal.

Common fiscal are seen daily on the farm and although this was the first impaled prey item encountered, most other foraging observations have been of arthropods and even a scorpion, but no reptiles. The last few years on the farm have been associated with below average annual rainfall. This overall dry spell and probably general lack of arthropod prey items may have influenced the bird to attempt larger reptile prey. On the other hand, the breeding season for common fiscal is between August and January (Tarboton 2001) which could imply that the *Trachylepis occidentalis* "kill and display" could serve a social function although the placement of the carcass within the shrub contradicts this although it is not clear how common fiscal view their surroundings. Nevertheless, this is a first record of *Trachylepis occidentalis* as prey by common fiscal as far as I could determine (See Broadley 1974 for other prey items).

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PSAMMOPHIINAE

Hemirhagerrhis nototaenia
(Günther, 1864)
Eastern Bark Snake

HUNTING STRATEGY

M. PETFORD & R. VAN HUYSSTEEN

On November 16, 2016 while sampling at Medike Mountain Sanctuary, Soutpansberg, Limpopo Province, South Africa (QDG 2229DC, 22°59’35”S, 29°36’82”E); a sub-adult Eastern Bark Snake (*Hemirhagerrhis nototaenia*) was observed hunting a Cape Dwarf Gecko (*Lygodactylus capensis*). What was notable about this observation was that the snake used caudal luring in its attempt to capture the gecko.

The snake initially took about five minutes observing the *Lygodactylus* before moving to within 80cm of the gecko. Once the snake had taken up position it began to wriggle its tail in a caterpillar like motion, attracting the attention of the gecko. The gecko became increasingly interested in the movement of the tail, turning around, raising its head and inching forward toward tail. However, as the gecko was inching closer the snake appeared to make a slight movement of the head and the gecko retreated.

Caudal luring has been recorded many times before in numerous different snake species and families. It usually involves the use of a bright, conspicuous tail tip (Sazima 1992; Martins *et al.* 2002; Andrade 2010), but may be even further developed in the ‘spider’ caudal lure of *Pseudocerastes urarachnoides* (Fathinia *et al.* 2009). The individual Eastern Bark Snake we observed displaying caudal luring was a sub-adult, but adults of this species also have orange or yellow tipped tails and may also utilize this behaviour (Branch 1998).

To our knowledge this is the first observation of *Hemirhagerrhis nototaenia* caudal luring and the first species within the Psammophiinae which has been observed to do so.

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Fig. 1. *Hemirhagerrhis nototaenia* from Soutpansberg. Note bright coloration of tail tip. Photo Ryan van Huyssteen.

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A NEW PROVINCIAL RECORD AND OTHER NOTEWORTHY RECORDS OF REPTILES IN THE WESTERN CAPE, SOUTH AFRICA

M. P. HEINICKE & A. M. BAUER

Significant contributions to an understanding of the reptiles of the Western Cape begin with the works of Andrew Smith, whose publications date from the 1820s (e.g. Smith 1826) and culminated in the Reptile volume of his "Illustrations of the Zoology of South Africa" (Smith 1838–1849). Subsequent research on Western Cape reptiles has continued uninterrupted to the present, driven by interest in the diversity of the fauna and the presence of both a major urban centre and several research universities in the province. As a result, the Western Cape has the most heavily collected and thoroughly documented reptile fauna in Africa, with 29,997 unique records belonging to 149 species vetted in the SARCA database (Bates *et al.* 2014). It might be expected that the ranges of most of these species have been fully documented as a result of these collections. However, on a recent herpetological survey we documented 15 new quarter-degree square locality records for reptiles in the Western Cape, two of which represent significant range extensions (one a new provincial record).

Surveys were conducted between 21 July and 02 August 2013; participants were the authors (M. Heinicke, A. Bauer) as well as E. Frietas, T. Gamble, A. Kuhn, J. Marais, R. Skinner, and D. Zarkower. Specimens were collected by hand during diurnal visual encounter surveys, with vouchered specimens deposited in the Museum of Comparative Zoology (MCZ), Harvard University. Survey sites were spread throughout the Western Cape Province, but focused on rocky habitats. We report these new records here, as well as previous adjacent records based on the SARCA database. The two significant range extensions are given in detail, while other new quarter-degree square records are presented without comment.

Goggia essexi
(Hewitt, 1925)
Essex's Pygmy Gecko

Goggia essexi has the easternmost distributional range of any member of its genus. It has previously been known exclusively from the Eastern Cape Province of South Africa (Branch et al. 1995), in which it occupies ten quarter degree squares. Most records are from the Suurberg and surrounding areas, with the westernmost records coming from the Ecca shales, 20–24 km SE of Steytlerville (3324CB; Branch 2014a). In these areas, it occupies areas of rocky substrate with sparse vegetation and exfoliating rock, cracks of which are used as sites of shelter. We collected three specimens of this species (MCZ R-192415, MCZ R-194430, MCZ R-194431) along the Pardabont Road at Farm Heimers

Rivier (33° 43’ 59.3” S, 22° 01’ 31.5” E). This locality lies on the southeastern flank of the Gamkaberg; all specimens were encountered under exfoliating rock along a slope.

The new record lies approximately 230 km west of the nearest Eastern Cape localities and represents the first record of *G. essexi* for the Western Cape Province. There are also records of *G. incognita* (recently erected for southern populations of *G. lineata*; Heinicke et al. 2017) and *G. hewitti* from this quarter degree square. Although a broad overlap of the former, more terrestrial, species with other, chiefly rupicolous congeners is well known (Branch et al. 1995) this represents the first documentation of sympatry or near-sympatry among other small-bodied *Goggia*. The specimens are morphologically similar to other *G. essexi* in color pattern, body form, and scalation (Fig. 1). However, given the close resemblance among small-bodied rupicolous *Goggia* (Branch 2002), we also obtained genetic confirmation of their identity. Sequences of the mitochondrial ND2 gene showed a 7.6% pairwise sequence divergence from Eastern Cape *G. essexi*, well within the range of genetic distances reported for other gecko species (e.g. Brown et al. 2012). The next closest relative, *G. hewitti*, has a pairwise *ND2* divergence of 12%. Given the close resemblance of *G. essexi* and *G. hewitti*, and the many records of *G. hewitti* from the Outenikwaberg and other regions between Gamkaberg and Suurberg (Bates et al. 2014), re-examination of *G. hewitti* specimens from these regions is warranted.

Lygodactylus capensis (Smith, 1849)
Common Dwarf Gecko

Species of *Lygodactylus* are distributed across the more tropical regions of sub-Saharan Africa. No species are native to the Western Cape Province, but the native range of *Lygodactylus capensis* is broader than that of any other species and in South Africa it occurs throughout northeastern portions of the country exclusive of areas in the grassland biome (Branch 2014b). The species has spread extensively into southern portions of the country, chiefly in anthropogenic habitats. Records from the Western Cape are limited to seven quarter degree squares (De Villiers 2006; Branch 2014b; SARCA online). These include 3318CD, 3318DC, 3318DD, and 3418BB in the greater Cape Town region as well as records from George (3322CD; Jacobsen 2012), Oudtshoorn (3322CA) and the Karoo National Park (3222BC). We collected two *L. capensis* specimens (MCZ R-192185, MCZ R-192204) and observed numerous others at Farm Voorsorg on the outskirts of Vredendal (31° 40’ 33.8” S, 18° 30’ 43.6” E).

Figure 1. Specimen of *Goggia essexi* (MCZ R-194430) from Farm Heimers River (33° 43’ 59.3” S, 22° 01’ 31.5” E). Photo by T. Gamble.

The new record is 240 km north of the nearest of these records viz. Joostenberg Vlakte (3318DC). Both collected specimens and all additional observed individuals were found either on walls of buildings or else on ornamental plantings including bananas (*Musa* sp.). We did not obtain genetic confirmation of the identity of these specimens, however few other *Lygodactylus* species are easily mistaken for *L. capensis* and the specimens we observed appeared identical to typical *L. capensis* individuals (Fig. 2). We expect that *L. capensis* will continue to spread its range through Western Cape Province via inadvertent human transport until all climatically suitable parts of the province are occupied.

OTHER NEW QUARTER-DEGREE SQUARE RECORDS

CORDYLIDAE ***Cordylus cordylus*** (Linnaeus, 1758) – (no number; not collected): Gouritsmond (34° 21’ 45.3” S, 21° 52’ 04.7” E.).

GEKKONIDAE: ***Afrogecko porphyreus*** (Daudin, 1802) – MCZ R-192419–23: Vlees Bay, W. of point (34° 17’ 55.6” S, 21° 56’ 05.1” E). MCZ R-192406–7, MCZ R-194425–6: Vlees Bay, E. of point (34° 18´ 5.6´´ S, 21° 56´ 39.2´´ E). ***Goggia incognita*** Heinicke,

Figure 2. A. Specimen of *Lygodactylus capensis* (MCZ R-192185) from Farm Voorsorg (31° 40’ 33.8” S, 18° 30’ 43.6” E). Photo by M. P. Heinicke.

Turk & Bauer, 2017 – MCZ R-194424: Farm Buffelskloof (33° 30′ 18″ S, 21° 32′ 08″ E).

Goggia hewitti (Branch, Bauer & Good, 1995) – MCZ R-192402, MCZ R-192403: Farm Buffelskloof (33° 30′ 18″ S, 21° 32′ 08″ E).

Pachydactylus barnardi FitzSimons, 1941 – MCZ R-192196: W. of Farm Kamaboes on road to Bitterfontein (30° 47′ 54.6″ S, 18° 26′ 46.8″ E).

Pachydactylus labialis FitzSimons, 1938 – MCZ R-194446: Farm Waterval (31° 47′ 29.1″ S, 18° 54′ 39.9″ E).

Pachydactylus namaquensis (Sclater, 1898) – MCZ R-192195: Farm Kamaboes (30° 44′ 13.2″ S, 18° 34′ 02.9″ E).

GERRHOSAURIDAE: ***Cordylosaurus subtessellatus*** (Smith, 1844) – MCZ-R192388: Farm Kamaboes (30° 44′ 13.2″ S, 18° 34′ 02.9″ E).

LACERTIDAE: ***Pedioplanis namaquensis*** (Duméril & Bibron, 1839) – MCZ R-192188: along R358 E of Bitterfontein (30° 48′ 55.7″ S, 18° 23′ 45.2″ E).

LAMPROPHIIDAE: ***Psammophis notostictus*** – MCZ-R192451: Vlees Bay, E. of point (34° 18´ 5.6´´ S, 21° 56´ 39.2´´ E).

SCINCIDAE: ***Acontias lineatus*** Peters, 1879 – MCZ R-192389–90: Farm Kamaboes (30° 44′ 13.2″ S, 18° 34′ 02.9″ E). MCZ R-192391: Farm Waterval (31° 47′ 29.1″ S, 18° 54′ 39.9″ E).

VIPERIDAE: ***Bitis cornuta*** (Daudin, 1803) – MCZ R-192198: Brand se Baai-Lutzville Road (31° 17′ 50.1″ S, 18° 10′ 55.2″ E).

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LAMPROPHIIDAE

Macrelaps microlepidotus
(Günther, 1860)
Natal Black Snake

NATAL BLACK SNAKES IN THE EASTERN CAPE

W. CONRADIE & T. BUSSCHAU

We herein report two new locality records for *Macrelaps microlepidotus* (Günther, 1860) from the interior of the Eastern Cape Province, South Africa. These records represent the first inland records for this region (referred to formerly as Transkei, a former homeland in pre-democratic South Africa). These specimens were collected during a Foundational Biodiversity Initiate Program (FBIP) sampling trip to the Transkei Mistbelt Forests west of Mthatha, conducted during January 2017. Both records are of adult female specimens collected from isolated indigenous forest patches, and deposited in the Port Elizabeth Museum (PEM). In both cases, the specimens were found active on the forest floor on warm days, in the mid to late afternoon, after numerous cold rainy days. The first record (PEM R22659; Fig. 1A-B) is from Baziya forest (31°34′06.2″S 28°24′49.7″E, 1014m a.s.l, 3128CB), 40 km west of Mthatha, collected by T. Busschau on 12 January 2017. The second record (PEM R22660; Fig. 1B-C) is from Nqadu forest (31°25′15.0″S 28°44′07.4″E, 1120m a.s.l, 3128BC), 25 km north of Mthatha, collected by W. Conradie and T. Busschau on 19 January 2017.

Figure 1: New records of *Macrelaps microlepidotus* for Baziya (A & B) and Nqadu (C & D), Eastern Cape. Photos: Theo Busschau.

Scalation and measurements of the Baziya specimen (PEM R22659): length 640 + 116 = 786 mm (body + tail); rostrum and mental entire; internasal divided; prefrontal divided; undivided frontal; parietal divided; nasal shield semi-divided; prenasal not divided; 2nd and 3rd upper labial touching prefrontal; undivided postnasal, well separated from orbital; one post-ocular; one supra-ocular: no sub-ocular or pre-ocular; temporals 1 + 2; 5th upper labial not touching parietal; upper labials 7 (3rd and 4th entering orbital, 5th largest); lower labials 8, first 4 in contact with sublinguals, 2 pairs of sublinguals; row of midbody scales 23/25/20; ventral 163; anal shield entire; entire subcaudals 40 (first split). The Nqadu specimen (PEM R22670) has the same scalation as the Baziya specimen, but differs in: length 705 + 124 = 829 mm; ventral 161; row of midbody scales 23/25/19. This conforms to the description provided by Broadley (1983), except in the case with the Baziya specimen, where the 2nd and 3rd upperlabial touch the prefrontal (only 3rd upperlabial reported touching). In both the Baziya and Nqado specimens, the 5th upperlabial is excluded from the parietal by the first temporal. In Broadley (1983), the lateral head drawing shows clearly the 5th upperlabial touching the parietal, but in the text it is stated that if the temporal scales are 0+1+1 then the 5th upper labial is touching the parietal. We examined all the PEM *Macrelaps microlepidotus* material for this feature, and found only 2 out of 19 (11%) specimens in which the 5th upperlabial is touching the parietal, making the most likely scale orientation the 5th upperlabial being excluded from the parietal by a temporal scale.

This species is fairly widely distributed along the eastern seaboard of KwaZulu-Natal and Eastern Cape Provinces of South Africa (Conradie *et al.* 2012). In the Eastern Cape, they are mostly documented from the coastal strip, except for records from the Amathole area. The Baziya and Nqadu records are both new quarter degree grid square records for the Eastern Cape, and extend the distribution of the species 80 km and 70 km, respectively, inland from the nearest coastal record at Coffee Bay. The existence of these records exhibit the need to further survey fragmented forest habitats in the interior of the Eastern Cape Province to fully understand the distribution of this species

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GEKKONIDAE

Lygodactylus chobiensis
FitzSimons, 1932
Chobe Dwarf Gecko

D. W. PIETERSEN, J. P. DAVIES & L. J. THOMPSON

The Chobe Dwarf Gecko (*Lygodactylus chobiensis*) is largely restricted to the Zambezi Valley and Okavango Basin, extending as far east as Caia in Sofala Province, Mozambique (Branch 1998, Broadley 2000; Pietersen 2014). On 11 January 2016 at 12h30, a single individual was observed and photographed by DWP in the upper strata (4–5 m above ground level) of a Flamboyant Tree (*Caesalpinia pulcherrima*) in Liwonde town, Southern Province, Malawi (15° 04' 04" S, 35° 13' 48" E, 1535AA, 494 m a.s.l.) (Fig. 1). Photographs were submitted to ReptileMAP (VM no. 159799) and can be accessed online at vmus.adu.org.za. It was distinguished from the sympatric Common Dwarf Gecko (*Lygodactylus capensis capensis*) on the basis of its more robust appearance, yellowish wash to the head, lack of pale or dark dorsolateral stripes, and the presence of scattered medium-sized pale spots on the body and tail; from the Angulate Dwarf Gecko (*Lygodactylus angularis*) on the basis of its generally more greyish body with scattered pale spots, and in particular the yellowish wash to the head, and lack of large pale flank spots and dark spots on the lower flanks (both usually present in *L. angularis* in southern Malawi: DWP, pers. obs.; also see submissions of *L. angularis* in the ADU virtual museum

(vmus.adu.org.za)(; from the Angola Dwarf Gecko (*Lygodactylus angolensis*) based on the yellowish wash to the head and the absence of large dark-edged pale spots on the flanks.

This represents the first record of this species for Malawi (Uetz *et al.* 2016). The locality is situated about 200 km NNE of the nearest reported locality on the Zambezi River in Tete Province, Mozambique (Branch 1998, Broadley 2000). The extent of this species' range appears to be poorly understood, with a number of previous records situated away from the Zambezi Valley and Okavango Basin, including at Ngoma in Kafue National Park, and in Lusaka (Broadley 1971); in Niassa Game Reserve in Niassa Province, northern Mozambique (Branch *et al.* 2005); and in Gorongosa National Park in Sofala Province, central Mozambique (H.O.M. Farooq & DWP, unpubl. data). Although records of this species in urban areas could be the result of accidental anthropogenic translocations, records from wilderness areas in national parks suggest that it may be more widespread than currently thought. This species may be overlooked because of its tendency to occupy the upper strata of trees in areas where it occurs sympatrically with *L. c. capensis* (Branch *et al.* 2005; Pietersen 2014). The present record is less than 2 km from the Shire River, a major tributary of the Zambezi River, and it is possible that it may occur more extensively along major tributaries, perhaps explaining some of the purportedly isolated populations. However, intensive surveys along the Zambezi River's tributaries are required to assess the extent of its distribution properly.

Figure 1. Adult Chobe Dwarf Gecko (*Lygodactylus chobiensis*) photographed in Liwonde town, Southern Province, Malawi, on 11 January 2016. Photo: D.W. Pietersen

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CHAMAELEONIDAE

Chamaeleo anchietae Bocage 1872

Anchieta's (Angolan) Chameleon

D. W. PIETERSEN, J. P. DAVIES & L. J. THOMPSON

Anchieta's Chameleon is a poorly-known species with a wide but disjunct distribution on montane plateaus stretching in a narrow band from the Bie highlands in central Angola, across southern DRC (Upemba, Kundelungu and Marungu plateaus) as far east as the Udzungwa highlands in southern Tanzania (Spawls *et al.* 2004; Broadley & Cotteril 2004; Tolley *et al.* 2015). Although previously thought to also occur in the highlands of western Tanzania and adjacent Rwanda and Burundi, the latter two populations were recently shown to be genetically distinct at the species level (Tolley *et al.* 2015).

On 1 January 2016 at ca. 11:00 am, we found an individual crossing the main Thazima Gate – Chelinda Camp access road (10° 41′ 58″ S, 33° 37′ 29″ E, 1033DA, 1 945 m a.s.l.) in Nyika National Park, Northern Province, Malawi. The surrounding vegetation consists of open *Parinari excelsa* – *Protea* sp. savannah in a matrix of short, montane grassland. As we did not have collecting permits, no tissue samples were taken for DNA analysis and the individual was photographed (Figure 1) but otherwise left undisturbed.

This individual was distinguished from the widespread Flap-necked Chameleon (*Chamaeleo dilepis*) by the absence of occipital lobes, the parietal crest being continuous with the dorsal crest and the absence of a pale lateral stripe (Spawls *et al.* 2004). Superficially *Chamaeleo anchietae* may be confused with *Chamaeleo laevigatus* which it resembles, but from which it can be distinguished by its truncated snout, much shorter tail and a background pattern of spots. In

Figure 1. Adult male Anchieta's Chamaeleon (*Chamaeleo anchietae*) photographed in Nyika National Park, Northern Province, Malawi, on 1 January 2016. Photo: Darren W. Pietersen

addition, *C. anchietae* is confined to montane plateaus, while *C. laevigatus* inhabits more lowland habitats.

This is the first record of this species in Malawi (Spawls *et al.* 2004; Tilbury 2010; Tolley & Trape 2014; Glaw 2015; Tolley *et al.* 2015; Uetz *et al.* 2016), and is ca. 300 km south-west of the Udzungwa highlands, 520 km south-east of the Marungu plateau and 630 km directly east of the Kundelungu plateau. Although assigned to *C. anchietae* on morphological grounds, this species assignment is provisional and the specific identity of this population will need to be assessed using molecular techniques. The nearest known population of the *C. anchietae* species complex is in the Udzungwa highlands in Tanzania, and thus it is likely that the Nyika population is also referable to this species, however it is also possible that this population represents a cryptic species as was found in the Rwanda and Burundi populations. Because of the large gaps between known populations, it is considered likely that other intervening highland areas such as the Kitulo plateau and the Ubena and Njombe highlands in Tanzania might also harbour as yet undetected populations (C. Tilbury, *pers. comm.*).

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