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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: *Hyperolius pusillus* from near Nelspruit, South Africa. Photograph by: Bryan Maritz. Canon EOS 50D (1/250, F25, ISO 200).

ARTICLES

NOTES ON SOME ASPECTS OF THE ECOLOGY OF THE HUSAB SAND LIZARD, *PEDIOPLANIS HUSABENSIS*, FROM NAMIBIA

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INTRODUCTION

Biodiversity loss is one of the world's most pressing crises. Many species are declining to critical population levels, important habitats are being destroyed, fragmented, and degraded, and ecosystems are being destabilised through a variety of factors including direct human impacts (Millenium Eosystem Assessment 2005, IUCN 2010). In the central Namib Desert of Namibia, such impacts are currently caused by a significant increase in uranium mining and exploration activities, to such an extent that the area has become known as the Uranium Province (SAIEA 2010).

Western Namibia – including the Namib Desert – is a mosaic of habitats, often with sharp boundaries and disjunct populations. Approximately 60 endemic or near-endemic reptile species (i.e., 23% of all species and 50% of all Namibian endemics) occur in this region. Lizards, especially the genus *Pedioplanis*, show the greatest endemism and/or species radiation (with approximately 35% endemism within the Namibian fauna; Griffin 1998).

This paper provides basic ecological data on the central Namib endemic Husab Sand Lizard (*Pedioplanis husabensis*), which is potentially directly affected by uranium mining, especially since its known area of distribution is confined to the core of the Namibian Uranium Province (Berger-Dell'Mour & Mayer 1989). The objectives of the study were to collect basic ecological data of a little known and understudied species prior to full-scale mining operations planned for the general area.

STUDY AREA

The study area comprised the area surrounding the planned Swakop Uranium Mine (prior to the mining license being granted, this mine site was called Husab Mine), but not exclusively limited to the expected footprint of the mine. The roughly triangular study area extended from the Husab geological camp (south-eastern boundary) towards the Khan River (northern and northwestern boundary). The eastern boundary included the boundary fence of the Namib-Naukluft National Park (Fig. 1). This study area was

deemed to be ecologically meaningful for the assessment of potential impacts, considering the known distribution and biology of *P. husabensis*.

The central Namib in general, and specifically our study area, is heavily influenced by the cold Benguela Current and associated coastal climate with mean annual temperatures ranging between 18 and 22 °C and average and median annual rainfall less than 50 mm with southerly and westerly winds being typical (Mendelsohn et al. 2002). The dominant soils are petric gypsisols and calcisols and the main vegetation type is Central Desert (Mendelsohn et al. 2002) or Central Namib (Giess 1971), with the dominant vegetation structure being sparse shrubs and grasses. The plains of the Central Namib are normally bare, but after localised winter rains become covered with scattered clumps of *Mesembryanthemum* species and *Stipagrostis obtusa* and *S. ciliata* grasses (Giess 1971, Wassenaar & Mannheimer 2010). Average plant production and the variation in plant production are extremely low with a low overall terrestrial diversity and average to high terrestrial endemism (Mendelsohn et al. 2002). Reptile diversity is moderately high, with 41 to 60 species occurring in the area, although 25 to 28 of these are endemic (Mendelsohn et al. 2002).

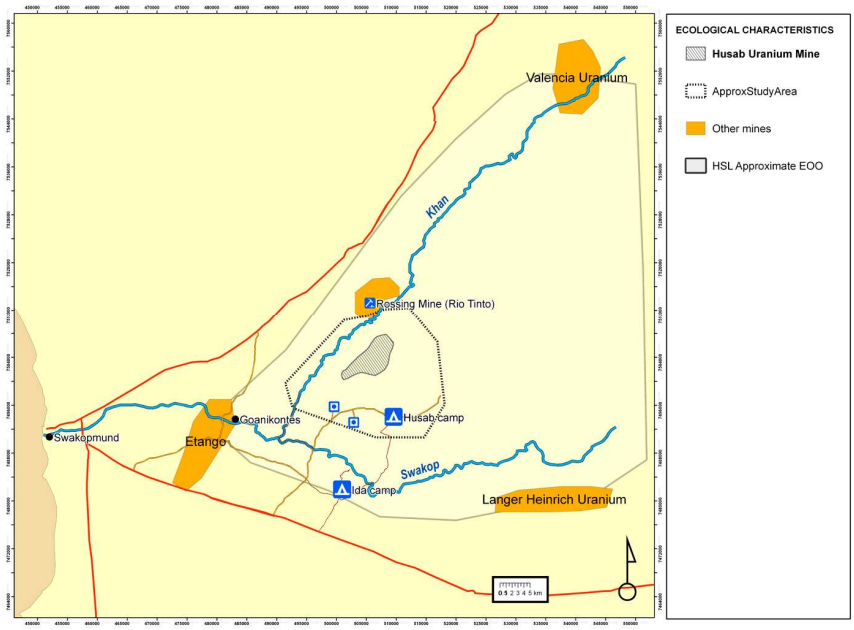

Figure 1: Approximate extent of occurrence (EOO) of Husab Sand Lizard, with the study area, relative to the location of the planned Swakop Uranium Mine. The approximate locations of other mines (planned and operational) are provided for reference (after Wassenaar et al. 2010). Note that the latter are not drawn to scale.

The habitats covering the largest part of the study area were described as part of an Environmental Impact Assessment for the mine (Wassenaar & Mannheimer 2010). Typical habitats are the Khan River, three plains habitats (gypsite plain, grassy gravel plain [Fig. 2-left] and hard undulating plain), rocky valley drainages, plains drainage channels, broken rocky pink granite, broken rocky black metamorphosed sediments, marble intrusions in broken rocky terrain (Fig. 2-right), and koppies and ridges on plains. The latter included ridges consisting of mostly marble rock with relatively high habitat diversity, as well as more simple metamorphosed sediments of the Khan group. It is especially the marble ridges that are relevant to this study, both those occurring as inselbergs on the plain, and those that occur as intrusions into broken granite and metasediment rocky terrain (Fig. 2-right).

Figure 2: Left) Sparsely vegetated grassy gravel plains typical of most of the Swakop Uranium area with the Husab Mountain in the background. Right) Vegetated marble ridges extending down towards the Khan River and occurring as an intrusion into widespread exposed broken rocky granite and metasediment terrain. Note the drilling rigs on the horizon in the background.

The Husab Sand Lizard (*Pedioplanis husabensis*) (Fig. 3), first described by Berger -Dell'Mour & Mayer (1989), is a restricted range endemic lizard species (100% of the taxon's range is within Namibia) that occurs in the general area of the confluence of the Swakop and Khan Rivers (Berger-Dell'Mour & Mayer 1989, Branch 1998, Griffin 2003).

Very little is actually known about the basic ecology and or actual habitat requirements for this species. Except for this study, probably the most comprehensive to date, and the study conducted by Berger-Dell'Mour & Mayer (1989) in the Rössing Mine area, even reference to the distribution of the species are limited to 'grey literature' (e.g., Griffin 2005, Cunningham 2007, Conradie & Branch 2009, Wassenaar & Mannheimer 2010). Habitat requirements are broadly and vaguely, described as "stony substrates" (Griffin 2003) and "rocky desert with expanses of flat rock on exposed bedrock being preferred" (Branch 1998) while Alexander & Marais (2007) provide general habitat and basic ecological data for the genus.

Figure 3: *Pedioplanis husabensis* in typical marble boulder dominated habitat in the Husab area.

According to the Namibian Nature Conservation Ordinance of 1975, the conservation and legal status for *P. husabensis* is viewed as "endemic" and "secure" and proposed as "protected" under the new Parks and Wildlife Management Act (In Prep.) (Griffin 2003). *Pedioplanis husabensis* is furthermore viewed as "threatened" by the 'Uranium Rush' (SAIEA 2010). Its total known range at this stage is probably less than 5,000 km^2 (Wassenaar et al. 2010), which would put it in the "endangered" category according to the IUCN Red List Categories and Criteria (IUCN 2001).

METHODS

Fieldwork was conducted from sunrise to sunset over a period of 5 days between 18 and 22 November 2010, with more emphasis on the early morning and late afternoon as these were noted to be the periods of most *P. husabensis* activity. Transects were conducted on foot, varying in length and direction, traversing as many habitats as possible throughout the study area.

Although the study focused on *P. husabensis*, all other reptiles especially all species in the genus *Pedioplanis* (e.g. *P. inornata* and *P. breviceps*) encountered along the various transects were identified and their geographic coordinates plotted using a hand held GPS. The *P. inornata* in the study site had the coloration patterns of the northern form, which is thought to be a distinct parapatric species of the nominate taxon in the south (Berger-Dell'Mour & Mayer 1989, Makokha et al. 2007, Conradie & Branch 2009). This "northern Plains Sand Lizard" occurs in western central Namibia, has been found to be genetically distinct (Conradie *Pers. Comm.*), but has yet to be formally described and named. Here we refer to it as *P. inornata*.

To ascertain basic habitat and ecology requirements for *P. husabensis* the following

data were gathered at each point where an individual *Pedioplanis* spp. was sighted: habitat type (according to Wassenaar & Mannheimer 2010), date and time of observations, temperature (°C measured using a hand held thermometer at 1 m above the soil surface, wind direction and strength (still/breeze/moderate/strong - estimated), cloud cover (clear, light cloud, overcast, rain), substrate (plate rock, rocky [rocky, rock and gravel, rock and sand], gravel [gravel, gravel and rock, gravel and sand], sandy [sand, sand and rock, sand and gravel] as the majority type within 100 m radius of actual sighting), scale of roughness of the rock surface (scaled from 1 to 5, with 1 being flat and 5 very rough), vegetation (bare, sparse, open, vegetated, well vegetated - estimated), closest plant (measured by pacing the distance to the closest perennial species), closest rock/boulder (measured by pacing the distance to the closest suitable shelter), activity as one of five activity classes (basking, sit-and-wait, moving, foraging/hunting, other) and relative position observed (open, concealed, sun, or shade).

Individuals were captured using an active capture technique ('reptile noosing'), identified *in situ*, photographed, standard measurements taken with Rabone plastic callipers (e.g. snout-vent and tail length in mm), weighed with a Pesola spring balance (g) and released unharmed at the site of capture.

A rapid plant species composition assessment was conducted in habitat favoured by *P. husabensis* using the "step point" method (conducted while walking the survey transect): the closest plant to the observer's foot was identified at 10 m intervals following a 1,000 m transect. Population density was estimated using the various transect lengths (paced) and observational widths (3 m to each side). A rough estimate of population numbers was determined through extrapolation using the above estimated density and preferred habitat size.

Differences in habitat variables, between species and categories were tested for using One-Way Analysis of Variance (ANOVA).

RESULTS

The combined length of all the transects was 69,380 m of which 46.6 % was spent searching for *P. husabensis* in potentially suitable habitats – e.g. koppies and ridges on plains and marble intrusions in very uneven eroded stony and rocky valleys. A total of 13 *P. husabensis* individuals were encountered, all on the habitat classified as Marble intrusions into Broken Rocky Terrain which resulted in an encounter rate of 1/1,080 m or 1.54 individuals.ha^{-1}. Using this density estimate, a simple (i.e. with low confidence) extrapolation to the total area of the Marble intrusions habitat contained within the study area (159.66 ha) gives a total population of ~103 individuals. Only three *P. inornata* individuals were encountered, all of which occurred on the Pink and Black Broken Rocky terrain. Nine individuals of *P. breviceps* were encountered on four habitat types of which the majority were observed on Grassy Plains or Hard Undulating Plains. No *P. inornata* or *P. breviceps* were observed in association with *P. husabensis* or in the habitat type favoured by the latter.

Nine of the 13 *P. husabensis* individuals encountered were captured, measured and weighed. Mean snout-vent and tail length were 47.7 ± 4.6 mm and 116.9 ± 19.9 mm respectively, and mean weight was 3.2 ± 0.8 g (Table 1). Tail length differed significantly between the three *Pedioplanis* species (ANOVA: F = 7.43; df = 2; p = 0.006) as did snout-vent-length (F = 5.61; df = 2; p = 0.02). Too few data were available to analyse differences in mass.

Table 1: Body measurements of the three *Pedioplanis* species encountered and captured in the Husab area.

Species	n	Total length (mm)	Range of Total length	Tail length (mm)	Range of Tail length	Weight (g)	Range of Weight
P. husabensis	9	47.7±4.6	42.5 to 53.5	116.9±19.9	78 - 147	3.2±0.8	2 to 4.5
P. inornata	2	47	47	113±2.8	111 - 115	3	3
P. breviceps	7	38.4±7.2	26 to 46	80.1±20.3	56.5 - 108.5	1.1±0.4	1 to 2

The majority of the *P. husabensis* sightings were made between 10:00 and 12:00 and at a mean ambient temperature of 25.7 ± 1.9 °C (Table 2).

Pedioplanis husabensis and *P. inornata* were exclusively associated with rocky substrate and rough terrain while *P. breviceps* were mainly associated with gravel substrate and flat terrain (Table 2). *Pedioplanis husabensis* were never observed far from potential shelter – on average 0.9 ± 0.2 m from a suitable rocky refuge (Fig. 4) and 1.5 ± 1.3 m from perennial vegetation (Table 2). There were significant differences in the distances the three *Pedioplanis* species were observed away from potential rocky shelter (ANOVA: F = 6.14; df = 2; p = 0.008) and from vegetation (F = 3.82; df = 2; p = 0.04).

Table 2: Habitat and environmental data for all three *Pedioplanis* species as observaed during November 2010 in the Husab area.

Species	n	Temp (°C)	Closest rock (m)	Closest plant (m)
P. husabensis	13	25.7 ± 1.9	0.9 ± 0.2	1.5 ± 1.3
P. breviceps	3	23 ± 3.6	0.5	2.3 ± 1.5
P. inornata	9	26.1 ± 2.3	6.1 ± 6	4.6 ± 3.9

Pedioplanis husabensis and *P. breviceps* individuals were mostly observed foraging (69% [n = 13] and 56% [n = 9] respectively), while all the observations (n = 3) of *P. inornata* were made whilst the lizards were basking. Without exception, all observations of all three species were made with individuals being in the open in full sunshine.

Other species observed on the same habitat as *P. husabensis* include *Agama anchietae*, *Rhoptropus afer*, *R. boultoni* and *Trachylepis hoeschi* with *R. afer* favouring the

more open areas with smaller boulders or plate rock while *R. boultoni* were mainly encountered in areas with large boulders. *P. husabensis* seemed to favour the intermediate areas which are vegetated with a combination of medium and large boulders with suitable refuge (Fig. 4).

Figure 4: Typical broken grey marble ridge with medium/large boulders with numerous cracks and crevasses used as refuge by *P. husabensis* in the Husab area.

DISCUSSION

The holotype of *P. husabensis* with a snout-vent-length of 59.3 mm and tail length of 116 mm is larger than the mean 47.7 ± 4.6 mm and 116.9 ± 19.9 mm (n = 9) measured during this study although the mean tail length is similar. Too few data were collected to statistically compare the body measurements of the three *Pedioplanis* species although significant differences were seen in tail length. Although the two closely related species are morphologically similar, Berger-Dell'Mour & Mayer (1989) describe field-distinguishable superficial differences in lower eyelid and tympanic shield shape and size, body colouration, and gular scale counts between *P. husabensis* and *P. inornata*. However, the gravel/sand open habitat-dwelling *P. breviceps* captured in the current study were smaller than the *P. husabensis*. This difference could be a requirement necessitated by habitat preference.

Desert animals seldom stray from their "activity patterns" except in response to seasonal changes with many diurnal ectotherms being active from soon after sunrise to around noon (Lovegrove 1993). Although most lacertids typically show a bimodal ac-

tivity pattern (e.g. Pérez-Mellado 1992), *P. husabensis* were observed to be active mainly during the mornings without an afternoon peak in activity. Although the current study's design – i.e. lack of correction for search effort – does not allow a confident conclusion about diurnal activity patterns (fewer observations were made in the midday hours), the pattern conforms to that of many desert lacertids (Cunningham 2011) and is probably real. As with many other reptiles, morning activity might be advantageous to *P. husabensis* as energetic costs of foraging activities are lower during the mornings (Pérez-Mellado 1992) or, simply because afternoon temperatures are too high (Cunningham 2001). The thermal characteristics of the white/grey marble dominated habitat favoured by *P. husabensis* could also play a role. However, the small sample size and season during which fieldwork was conducted limits the ability to generalise.

Pedioplanis husabensis occurred at a much higher frequency (1,080 m.sighting^{-1}) and at higher population densities (1.54 individuals.ha^{-1}) on marble ridges than *P. inornata* (0.39 individuals.ha^{-1}) and *P. breviceps* (0.36 individuals.ha^{-1}) in their primary habitats. However, in the current study *P. husabensis* was only recorded on marble intrusions – essentially two pockets – located within the broken rocky terrain. The characteristics of at least the pink granites broken rocky terrain are for all intents and purposes very similar to those of the marbles. During the mine EIA survey (Wassenaar & Mannheimer 2010), *P. husabensis* was also recorded on two marble ridges to the east of the Swakop Uranium Mine site (Joh Henschel & Mycke Matengu Pers.Obs.), but the nature of the surrounding habitat was not recorded. Berger-Dell'Mour & Mayer (1989) describe *P. husabensis* as inhabiting the Husab Mountain as well as the lowest parts of steep slopes along the Khan River and its many tributaries while *P. inornata* are found on the upper flatter sections. They do not however refer to the geology preferred by *P. husabensis*, except to note that the boundary line is the "last flat limestone hills [most likely the Marble rocks] on both banks of the Khan" (Berger-Dell'Mour & Mayer 1989). The two pockets of *P. husabensis* found on marble ridges during the current study may therefore represent isolated pockets or populations inhabiting the "boundary line" area as suggested by Berger-Dell'Mour & Mayer (1989). *Pedioplanis husabensis* individuals were also found on isolated marble outcrops and ridges on the opposite side of the Khan at the Rössing Mine (Pallett et al. 2008) and further to the northeast along the Khan River in the Valencia area (Cunningham 2007).

From our results it thus appears that *P. husabensis* is an extreme habitat specialist, selecting not only marble substrates, but specifically marble surrounded by other bare rock types. This conclusion is however based on 13 individuals, but concurs with the earlier observations by Conradie & Branch (2009) who noted the occurrence of *P. husabensis* on light-coloured, vegetated quartzite ridges surrounded by schist. It is not unknown for lizards to show this high degree of habitat specialisation (Goodman et al. 2008).

Although the surface roughness and substrate use are similar between *P. husabensis* and *P. inornata*, these closely related species were never recorded on the same habitat. *Pedioplanis inornata* appears to inhabit the sparsely vegetated broken terrain (Black and Pink Gramadoelas) around the better vegetated marble ridges as favoured by *P. husabensis*. This finding clearly supports the observation that these two species exist parapatrically (Berger-Dell'Mour & Mayer 1989), but also suggests that the scale at which the separation occurs is as fine as the difference between light marble substrates and other rock types – much finer than previously suspected. *Pedioplanis husabensis*' affiliation to marble is interesting, because the factors that resulted in this are not immediately apparent, but could include habitat structure (e.g. ridges are better vegetated attracting more potential prey or cracks and crevasses serve as refuge from predators or thermoregulation); food preferences or competition between related *Pedioplanis* species (e.g. *P. inornata* may confine *P. husabensis* to their range and habitat).

Other factors such as physiological differences between the two species in their tolerance of extreme temperatures and long periods without food may be as important (Sinervo et al. 2010). Although most lacertids typically show a bimodal activity pattern (e.g., Pérez-Mellado 1992), the activity patterns that we recorded certainly suggest that *P. husabensis* prefers to be active in the cooler part of the day before 13:00, indicating a potential issue with ambient temperature.

These issues may be elucidated with more information on densities and population sizes, and on changes in these, because it should permit a finer understanding of the species' relative performance, and thus better management plans. Unfortunately it is not possible to extrapolate the low numbers of individuals that we recorded to confident population size estimates, nor is the delineation of habitats sufficiently detailed. More data, collected over a larger area and a longer period and ground-truthed at an appropriate spatial scale are needed for this.

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THE HERPETOFAUNA OF SCHAAPEN ISLAND, LANGEBAAN, SOUTH AFRICA

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INTRODUCTION

Langebaan is a small West Coast town, approximately 100 km north of Cape Town, found on the edge of the Langebaan Lagoon. The 41 ha Schaapen Island is one of seven islands situated within the Langebaan Lagoon (Fig. 1) and is home to large colonies of shore birds. The inshore rocky island was named Schaapen Island by seafarers after they found sheep on the island, which were left there by the natives in the area to prevent the predators from getting to their sheep. The island has little soil and sparse vegetation (West Coast Strandveld) covering it. It is a bird sanctuary and is off limits to the general public.

A herpetofaunal assessment project was conducted on 5 March 2011 and 18 April 2011 on Schaapen Island. The assessment, an essential component of international obligations and compliance with the biodiversity legislation of the country, involved the gathering of information on reptiles and amphibians through active searching on the island. The main aim was to identify species found on the island as there is an extreme shortage of information in this regard and such information is important for the conservation management of the island. The only apparent species list that exists is for the West Coast National Park (WCNP), which encompasses the islands, but no detailed species list exists for the islands of the lagoon.

Figure 1: The Langebaan region of the Western Cape, South Africa, including the study site, Schaapen Island.

Herpetofauna play an important role in any ecosystem functioning as both predator and prey animals. As predator they help control various pest species (e.g., mice and rats) which could have a negative impact on the birds on the island. This assessment provides the baseline information needed to do conservation planning and to prioritize particular species for conservation action. This assessment is the start of a long term project spanning several years and aims to accumulate data on the herpetofaunal species on Schaapen Island and on the other islands in the Langebaan Lagoon.

METHODS AND RESULTS

I searched the available literature for reports of reptiles and amphibians on the island, and supplemented these with active searches on the island during two day-long field-trips. Active searching during both days on the island, looking under rocks, in rock crevices, rocky caves, under bird nests, in burrows and looking under leaf litter delivered 41 specimens representing seven reptile species. An additional species *Acontias meleagris* was not recorded during the survey but reported in the literature. No amphibians were found during the survey.

On the 1st day 18 specimens (seven species) were found. All snakes where measured, taking the total length (TL) and vent or tail length (VL) of the snake by placing a flexible

tape measure along its body midline from its snout to the tip of the tail, and from the vent to the tip of the tail, respectively. The snout-vent length (SVL) was then calculated by subtracting the vent length from the total length. Cloacal probing was used to ascertain the gender of snakes. Tissue samples (scale clippings) were taken from the snakes and tails clippings were taken from lizards and placed in 90% ethanol. The samples will be deposited in the DNA bank at the South African National Biodiversity Institute (SANBI). Specimens were photographed for addition to a photographic database of the herpetofaunal species on the islands.

On the 2nd day 23 specimens (5 species) were found. Only photographs where taken of all the specimens captured. All the reptiles collected on the two days were released in the same area where they were caught on the island.

SYSTEMATIC ACCOUNT

Family: COLUBRIDAE

***Dasypeltis scabra* (Linnaeus, 1758) Common Egg-eater**

A large specimen was found on the island in the 1980s by John Visser (Thomas *Pers. Comm.*). Since then the presence of this snake on the island has not been confirmed (Branch 1991). In March 1990 several *Dasypeltis scabra* sloughs were found on the island (Dyer, 1996). On 5 March 2011 three female snakes were located (33°05'21"S, 18° 01'14"E; two at 33°05'22"S, 18°01'09"E). Two of these were found in a smallish rocky cave near the shore line, and the third was found in a sandy burrow a bit farther inland. The snake in the sandy burrow was busy with its shed cycle. In addition to this a stop-count of 12 *Dasypeltis scabra* sloughs were found. The three specimens measured (SVL+Tail length) 960 + 110 mm, 922 + 140 mm, and 871 + 120 mm in length.

Family: VIPERIDAE

***Bitis arietans arietans (Merrem, 1820)* Puff Adder**

On 5 March 2011 a large (837 + 75 mm) gravid female was found in a rocky crevice near the shore line (33°05'30"S, 18°01'06"E). Dyer (1996) reported that a *Bitis arietans* was found and photographed on Meeuw Island in October 1994, but reported none for Schaapen Island. This is the first record of the species on the island.

Family: SCINCIDAE

***Acontias meleagris (Linnaeus, 1758)* Cape Legless Lizard**

Cordes and Mouton (1996) reported a dark phase *A. meleagris* that was collected on the island (Branch 1991). I did not detect this species during the survey.

***Scelotes gronovii (Daudlin, 1802)* Gronovi's Dwarf Burrowing Skink**

On 5 March 2011 seven *Scelotes gronovii* (Fig. 2) were caught under rocks at various locations on the island (33°05'22"S, 18°01'22"E; three at 33°05'22"S, 18°01'21"E;

33 05’21”S, 18°01’21”E; 33°05’21”S, 18°01’19”E; 33°05’34”S, 18°01’15”E). Four of the seven animals were adults while the remaining three were juveniles. This near threatened species (IUCN: 2006) is threatened by ongoing habitat destruction such as coastal town developments, potato farming activities and coastal mining activities. On 18 April 2011 a single *Scelotes gronovii* was caught under a rock (33°05'24"S, 18°01'15"E).

Figure 2: Close-up photograph of the feet and toes of a *Scelotes gronovii* captured on Schaapen Island during the survey.

Trachylepis capensis (Gray, 1830) **Cape Skink**

On 5 March 2011 four *Trachylepis capensis* were captured (33°05’26”S, 18°01’08”E; 33°05’25”S, 18°01’08”E; 33°05’21”S, 18°01’15”E; 33°05’30”S, 18°01’19”E) Three were found in the sparse vegetation whereas the other was found in a rocky area. On 18 April 2011 an additional five specimens were captured (33°05'28"S, 18°01'27"E; 33° 05'26"S, 18°01'27"E; 33°05'28"S, 18°01'14"E; 33°05'21"S, 18°01'17"E; 33°05'30"S, 18° 01'07"E). Two were found in the sparse vegetation, two in vacated bird burrows and one under a piece of old driftwood.

Family: CORDYLIDAE

Cordylus niger (Smith, 1844) **Black Girdled Lizard**

Branch (1991) reports this species from the island. On 5 March 2011 one *Cordylus sp.* was found under a rock (33°05’23”S, 18°01’09”E) along with a *Goggia lineata*. Le Fras Mouton (*Pers. Comm*.) identified the animal as *Cordylus cordylus* from a photograph on the grounds that the specimen was very darkly coloured but not pitch black, especially on the sides. He added that *C. niger* has never been recorded in or close to Langebaan

but that the specimen in the photograph had a subocular reaching the lip as in *C. niger* as well as seperated prefrontals as is often the case in *C. niger*. Moreover, Mouton said that there is a contact zone between *C. niger* and *C. cordylus* in the Saldanha-Langebaan area, and that the area had previously produced specimens of mixed morphology. He added that the number of longitudinal rows of ventrals should be check during future visits to the island as *C niger* has 10 rows whereas *C cordylus* has 12. On 18 April 2011 an additional four *Cordylus* specimens were found under various rocks (33°05'23"S, 18° 01'11"E; 33°05'30"S, 18°01'06"E; 33°05'31"S, 18°01'06"E). All showed ten longitudinal rows of ventral scales (Fig. 3) were counted, confirming the presence of *Cordylus niger* on the island. Three of the specimens were found with *Afrogecko porphyreus* in a rocky area of the island.

Figure 3: Close-up photographs of the head (top) and ventral scales (bottom) of a *Cordylus niger* captured on Schaapen Island.

Family: GEKKONIDAE

***Afrogecko porphyreus (Daudlin, 1802)* Marbled African Leaf-toed Gecko**

On 5 March 2011 a single *Afrogecko porphyreus* was found under a rock. (33°05’23”S, 18°01’09”E). On 18 April 2011 eleven additional specimens were located (33°05'26"S, 18°01'22"E; 33°05'30"S, 18°01'06"E; 33°05'31"S, 18°01'06"E). Ten were found under rocks on the island, and one juvenile was found behind a piece of dry bark.

***Goggia lineata (Smith, 1846)* Striped Dwarf Leaf-toed Gecko**

On 5 March 2011 a single *Goggia lineata* was found under the same rock as a *C niger* was found (33°05’23”S, 18°01’09”E). On 18 April 2011 an additional two juvenile specimens were caught, one under a rock and the other one behind an old piece of bark (33°05'21"S, 18°01'16"E; 33°05'37"S, 18°01'07"E).

DISCUSSION

This survey confirmed two of the three species from the historical data records, namely; *Dasypeltis scabra* and *Cordylus niger***.** However work on *C. niger* on the island still needs to be undertaken, because of the variation in colour and potential taxonomical confusion. The presence of *Acontia meleagris* still needs to be confirmed on the island. In addition to confirmation of the historical data, five new species for the island were recorded, namely; *Bitis arietans arietans, Afrogecko porphyreus, Goggia lineata, Trachylepis capensis* and *Scelotes gronovii*.

ACKNOWLEDGEMENTS

Johan Marais proof read and scrutinizing the article. Pierre Nel from SANParks provided permission and the boat to get onto the island. Kobus Smit, Tanya Heald, Alana Hendricks and Kamaal Soeker made the assessment a success. Prof. Le Fras Mouton verified the identity of the *Cordylus sp.;* and Dr. Mike Bates verified the identity of the *Goggia lineata, Afrogecko porphyreus.* and *Scelotes gronovii* specimens.

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DESCRIPTION OF THE TADPOLE OF *LEPTOPELIS BOCAGII* GÜNTHER, 1864, FROM BULAWAYO ZIMBABWE

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INTRODUCTION

On the 13th December, 2011 the pan HA 13, approximately 5 km south of Bulawayo, Zimbabwe (S 20° 09.560'; E 28° 37.799'; Elevation: 1346 masl), received 57.1 mm of rain and as a result filled to a depth of 76 mm overnight. On the night of the 14th December 2011 the following species were heard calling (1) *Amietophrynus gutturalis* Power, 1927 (2) *Amietophrynus garmani* Meek, 1897 (3) *Schismaderma carens* Smith, 1848, and (4) *Pyxicephalus adspersus* Tschudi, 1838. I noted that the male *P. adspersus* appeared to be on shrubs, which had been inundated. I did not see females, or sub-adult males. At 18h00 on the 15 December, I waded across to the position where the Alpha males had been seen. I was able to take a number of ova from the area at the base of the shrubs. Some were on grass stems and some were in the mud. I collected a sample of 40 eggs, which I took to home where I placed them in water (21° C; the water temperature at HA 13 was 22° C) and noted their development.

From the 15 December, to 19 December the water level recorded at HA 13 was dropping drastically, as the area was experiencing hot and dry weather. I also noted that large numbers of *Pyxicephalus adspersus*, tadpoles were shoaling. These shoals were beached in places, and a number of the shoals were lying out of the water, or very near to the edge. On 21 of December, I decided to collect a number of these tadpoles from HA 13, as it was obvious that they were in eminent danger of dying due to HA 13 drying. I placed these specimens in tanks at home, and observed their development. Their metamorphosis was rapid, but I noted that some of the specimens were smaller than others. All were black in colour. I took a small specimen and preserved it. I tried to examine the mouthparts, but due to the size of the specimen, about Gosner stage 25, a clear photograph could not be taken. However I recorded the LTRF and mouthparts (Fig. 1).

I was still in no position to say what species these tadpoles belonged to, and watched them as they metamorphosed, at the same rate as *Pyxicephalus adspersus*, and ate the same diet as *Pyxicephalus adspersus*. A specimen at Gosner stage 42 surprised me, when I noted it was positively *Leptopelis bocagii* Günther, 1864 (Fig. 2). I recorded the stages of development of the remaining four specimens.

DESCRIPTION

The tadpole takes from 18 to 30 days to metamorphose (in captivity). Once they have reached stage 47, tadpoles readily left the tanks, and moved into the overhead foliage. By this stage the tadpoles had reached a length of 37 mm (body approximately 17 mm).

The body is elongated and slender, and the tail is deepest at just short of the midpoint, and tapers to a rounded apex. It is uniform black up to about stage Gosner 42, but lightens to a silvery-grey colour, with greenish tinges, and is transparent below. From stage Gosner 42 onwards, the dorso-lateral areas become dark green, up to just past the vent, the limbs are also green at this stage; the customary dark mask from nose along the lateral sides to the apex of the tail is also diagnostic. The oral disk has a single row of papillae above the oral angle, and one row in the region of the oral angle, a single row along the outer thirds of the posterior margin, and a single row along the middle third of the posterior margin. Keratodonts are in four rows anteriorly, two entire and two divided, posteriorly there are three rows, none of which are divided. LTRF 4(2-4)/3 or 3(2 -3)/3.

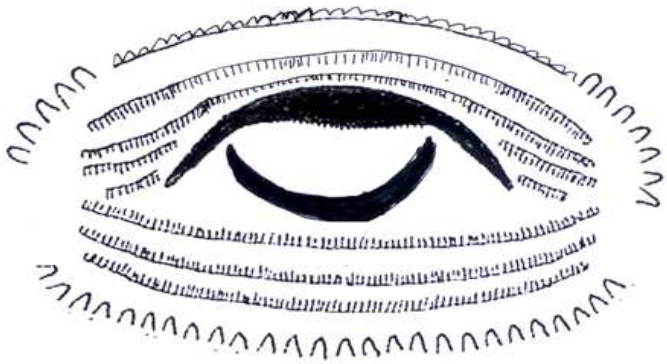

Figure 1: Mouthparts of *Leptopelis bocagii* (Gosner Stage 25)

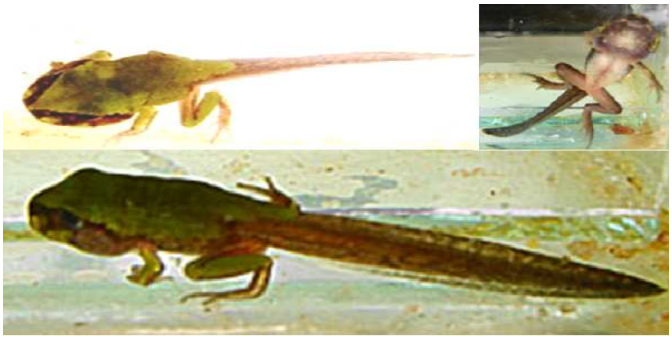

Figure 2: *Leptopelis bocagii* Günther, 1864 (Gosner Stage 42)

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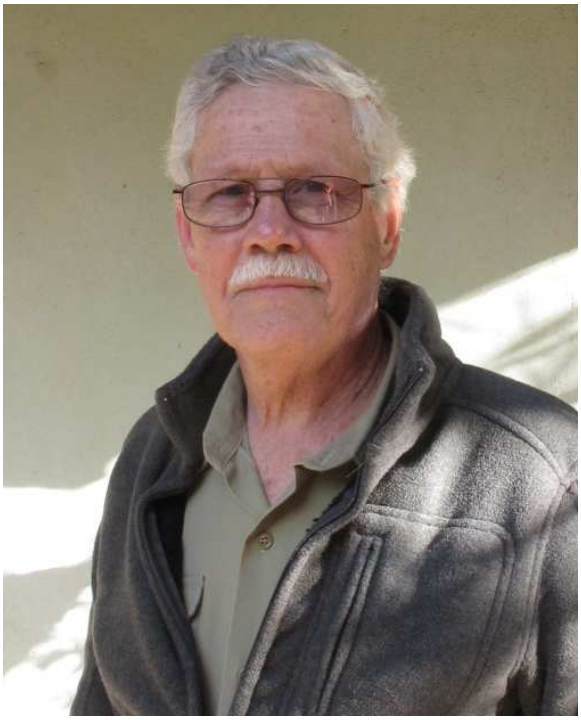
*****

OBITUARY: JOHN PÉRI LOVERIDGE



John Loveridge unexpectedly died of pneumonia on 9th January after only a few days illness. His tragic and untimely death is a great loss to southern African herpetology and many other disciplines.

John was born in Bulawayo in 1942 and his schooling was mostly at Courteney Selous (Harare) and Chaplin (Gweru), where he met his future wife Nan. They both graduated in 1963 with honours degrees in Botany and Zoology from the University College of Rhodesia & Nyasaland [now University of Zimbabwe]. They married in 1965 and had one son (Andrew, 1969) and one daughter (Morag, 1972).

After graduating, John went on to complete his Ph.D. in Entomology, his thesis being a physiological study of the water relations of locusts. From 1967 he continued at the local university as a Junior Lecturer in Zoology, before moving to the University of Cape Town from 1977–1980 as Senior Lecturer in Zoology. He then returned to UZ as a senior lecturer, being promoted to Professor of Biological Sciences in 1984 and Professor of Zoology from 1990-2007. After retirement, John became Director of Studies at St. John's College, Harare.

John was a true polymath, and his early publications were botanical, beginning with

a paper on the *Cryptosepalum* forests of northwestern Zambia, and another on the flora of a frozen lake in the Ruwenzori Mountains. Apart from his studies on insect physiology, he also made outstanding contributions on the biology of reptiles and amphibians. His discovery that *Chiromantis* secreted uric acid crystals was a major breakthrough. John's research on crocodiles, in collaboration with Dave Blake, and that of his students, contributed enormously to the development of crocodile farming and to the conservation of crocodiles in Zimbabwe. He also carried out ground-breaking work on large termitaria as hotspots of biodiversity in miombo woodlands.

John was a talented lecturer and teacher. He successfully supervised many postgraduate students and acted as an external examiner to several universities.

John was a great sportsman and athlete, and at UZ he played first team hockey, cricket (wicket keeper) and rugby (wing), in later years he enjoyed tennis. He was also a scoutmaster.

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I am very grateful to Andy Loveridge for a copy of his father's CV and list of publications, and to David Cumming for a copy of his Eulogy for John Loveridge delivered at his funeral in Harare on 9th January 2012. These documents have provided a good foundation for the present herpetology-slanted obituary.

SUBMITTED BY:

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NATURAL HISTORY NOTES

AMPHIBIA: ANURA

PYXICEPHALIDAE

***Pyxicephalus adspersus* Tschudi, 1838**
Giant Bullfrog

REPRODUCTION

South Africa, Gauteng, Midrand, Glen Austen Pan, 25°58'622"S, 28°09'920"E, (2528CC), altitude 1591 masl.

On 16 December 2010, after heavy rain during the previous 24 hours (> 100 mm) I visited the Glen Austen Pan during the late afternoon (from 16:00 onwards). A thorough search of the entire pan yielded six male giant bullfrogs, evenly dispersed around the pan, of which one was calling. Most of these males, once they were aware of me, would scatter away in to deeper water. No females were observed.

The following morning (17 December 2010) at 10h00, I visited the pan again. One male was found dead on the road having been killed by a motor vehicle, which indicated that at least some males had migrated to the pan during the previous evening. At the Glen Austen Pan I found a large lek (group of displaying males) around a small vegetated island near the south end of the pan. Most of the frogs were concentrated on one side of the small island. I counted 63 males and 40 females, a total of 103 animals around the island. The main group consisted of at least 40 males, substantially bigger than the group of 20 males reported by Preez and Cook (2004). After thoroughly searching the pan I found another small lek of 15 individuals, of which 6 pairs were in amplexus and three males were trying to dislodge copulating pairs. The smaller lek was in the south-eastern corner of the pan, approximately 25 m away from the larger lek, and indicated that at least two successful leks can occur in the same pan simultaneously. Five males were found in the northern area of the pan. No females were observed in their vicinity and they appeared to be unsuccessful in breeding.

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REPTILIA: SQUAMATA

PYTHONIDAE

***Python natalensis* (Smith, 1840)**
Southern African Python

PREDATION/DIET

On the 14th August 2004 an adult female Southern African Python (*Python natalensis*, Length = 3410+305, Mass > 18.06 kg) was found on the edge of a dam in Mongena Game Lodge, Gauteng, South Africa (25°19'38.66"S; 28°21'04.21"E, 2528AD, 1062 m a.s.l). The snake had been killed and partially eaten by a predator; the anterior third of the body had been severely mutilated. In addition to the body musculature, parts of the oesophagus, liver, heart and lungs had been remove and probably eaten by the predator. The nature of the damage and the amount of tissue removed was consistent with predation by a Honey Badger (*Mellivora capensis*). Honey Badgers have previously been recorded preying on Southern African Pythons (e.g., http://www.youtube.com/watch?v=WDmr_2YjzqU).

The python's stomach contained six Egyptian Goose (*Alopochen aegyptiaca*) eggs. Three of these were still intact (59.5-62.5 mm x 48.6-51.0 mm) and all contained near full-term hatchlings. Dove et al. (2012) report three recent records of feral *Python bivittatus* in Florida, USA, consuming avian eggs, but comment that consumption of avian eggs is unknown in any of the large Africa pythons (i.e., *P. sebae* and *P. natalensis*). Generally, snakes such as *P. natalensis* are considered to be ambush foragers (Secor & Ott 2007), and it is thus not surprising that they do not regularly consume eggs, since finding eggs would require at least some level of active searching. This feeding record thus suggests that like *P. bivittatus*, *P. natalensis* does forage actively on occasions.

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Geoff Lockwood is thanked for identification of the eggs. Mongena Game Lodge gave permission for research to be conducted on their land.

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PYTHONIDAE

***Python natalensis* Smith, 1840**
Southern African Python

REPRODUCTION

The Southern African Python (*Python natalensis*) is widespread in southern Africa and is found in Mozambique, Botswana, Namibia, Swaziland and South Africa. The species reaches a southern limit in the northern portion of Gauteng Province, South Africa. Brooding *P. natalensis* have been observed basking and coiling around clutches of eggs to raise egg temperature and improve the incubation of the eggs (Alexander 2007) and it has been hypothesised that the distribution of *P. natalensis* is proximally limited by the colder temperatures that result from an increase in altitude (Alexander 2007). The range limitation in Gauteng appears to be related to the environmental temperatures of the Highveld and their impact on the brooding success of female *P. natalensis* (Alexander 2007).

On 23 December 2010, my colleagues and I observed and photographed a large female Southern African Python (*Python natalensis*) with neonates at Roodeplaat Dam Nature Reserve (RDNR), Gauteng (25.63483° S, 28.36566° E; Fig. 1). The female was first encountered and photographed by staff at RDNR during an alien plant removal project in August 2010 and was repeatedly encountered at the same locality by staff during patrols throughout September to December 2010. Neonate *P. natalensis* were first observed on Tuesday 21 December 2010 by Jackson Lephuting and Joshua Mathebula at RDNR. Observations of the behaviour of *P. natalensis* neonates after hatching indicate that they may spend between 48 – 72 hours below ground after hatching, which suggests that hatching occurred on 18 or 19 December 2010 (Prof. G. J. Alexander, Pers. Comm.)

Fig. 1: Photograph of an adult, female *P. natalensis*, with a neonate at Roodeplaat Dam Nature Reserve.

The history of *P. natalensis* at RDNR is confused by the unconfirmed and confirmed reports of translocations of *P. natalensis* into RDNR during the last decade or so. Translocations of individuals from the surrounding areas may have led to the establishment of *P. natalensis* at RDNR or may just have contributed to the local population but it is not possible to say which of the two possibilities true. Nevertheless, this record is simultaneously the first confirmed record of *P. natalensis* and the first confirmed record of breeding for the species in the RDNR. Historical records of *P. natalensis* and incidental encounters recorded by Whittington-Jones et al. (2008) indicate that our record of *P. natalensis* at RDNR is also one of the southernmost records of *P. natalensis* reported since 2000 (Fig. 2). We note that this does not mean that *P. natalensis* does not occur further south than RDNR in Gauteng. Most recent reports of *P. natalensis* remain unconfirmed due to a lack of suitable evidence – photographic or otherwise but see SARCA record number 767 of a *P. natalensis* individual photographed at Blaauwbank Mine in the Magaliesburg (go to www.vmus.adu.org.za). Historical records of pythons suggest that the species can occur further south than RDNR, but the rate of habitat transformation and the densification of urban settlements are expected to have a negative impact on populations of *P. natalensis* in the southern parts of the species' distribution in Gauteng. The persistence of *P. natalensis* will most likely depend on protected areas of habitat such as Roodeplaat Dam Nature Reserve and others.

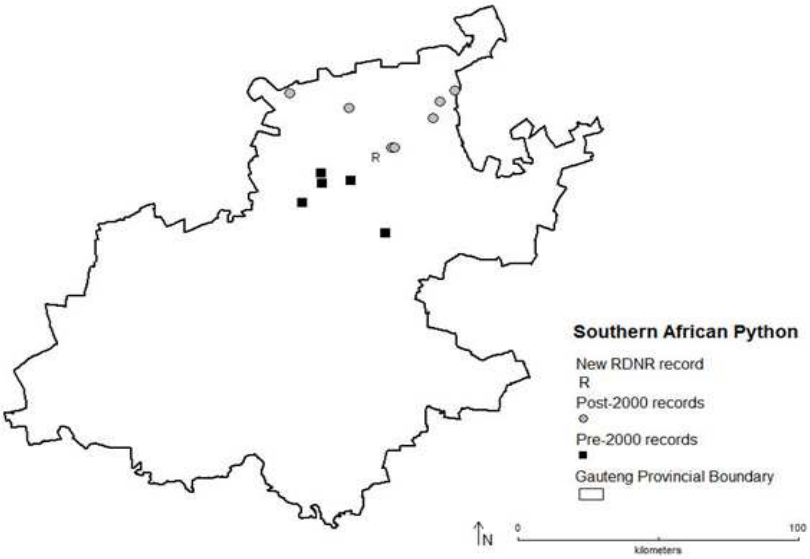

Figure 2: Historical and recent records of Southern African Python (*P. natalensis*) in Gauteng Province, South Africa. The new record of *P. natalensis* in Roodeplaat Dam Nature Reserve is also shown. Data for the pre- and post-2000 records of *P. natalensis* are provided by Whittington-Jones et al. (2008) and reprinted with permission.

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GEKKONIDAE

***Chondrodactylus bibronii* (Smith, 1846)**
Bibron's Thick-toed Gecko

ENDOPARASITES

Chondrodactylus bibronii occurs mainly in the Cape Provinces of the Republic of South Africa, barely extending into the adjacent Free State and Namibia (Branch 2004). They are gregarious and often live in dense colonies on rocky outcrops, but also under loose tree bark and around houses (Branch 2004). The following helminths: Cestoda, cyclophyllid metacestodes; Nematoda, *Skrjabinelazia ornata*, *Spauligodon smithi*; Acanthocephala, cystacanth were previously reported in *C. bibronii* (as *Pachydactylus bibronii*) by Goldberg and Bursey (2002a). The purpose of this note is to add to the helminth list of *C. bibronii*.

Twenty *C. bibronii* (mean SVL = 71.8 mm ± 5.0 mm, range: 60—79 mm) collected in 1970 from Botswana (n = 16), Kgalagadi District, 1 km W Tsabong and the Republic of South Africa, (n = 4) Northern Cape Province, 121 km N, 16 km E Upington and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, U.S.A. (Republic of South Africa LACM 82828-82831; Botswana LACM 82848, 82850-82854, 82857, 82858, 82861, 82862, 82864, 82868-82871, 82896, 82897) were examined for intestinal helminths. The stomachs had been previously removed and were not available for examination.

The body cavity was opened and the digestive tract was removed, opened longitu-

dinally, and examined under a dissecting microscope. One cestode and 953 nematodes were found. The cestode was regressively stained in hematoxylin and mounted in balsam. The nematodes were placed in a drop of glycerol on a glass slide, a cover slip was placed on top. The preparations (cestode and nematodes) were studied under a compound microscope. One cestode, assigned to *Ochoristica truncata*, was found in the small intestine of LACM 82828 (prevalence [number infected lizards/total lizards examined X 100] = 5%; mean intensity [mean number helminths per infected lizard ± 1 SD] = 1.0.) A total of 7 nematodes, assigned to *Parapharyngodon rotundatus* were found in the large intestine of LACM 82853, 82861, 82870 (prevalence = 15%; mean intensity = 2.3 ± 1.7 SD, range = 1-3) and a total of 946 nematodes, assigned to *Spauligodon smithi*, were found in the small and large intestines of 14 *C. bibronii* (prevalence = 70%; mean intensity = 67.6 ± 89.0 SD, range = 1-302). Voucher helminths were deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland as: *Oochoristica truncat*a (USNPC 105227), *Parapharyngodon rotundatus* (USNPC 105229), *Spauligodon smithi* (USNPC 105228).

Oochoristica truncata is widely distributed in Old World reptiles primarily from Africa and the Middle East; hosts are listed in McAllister et al. (2011). The life cycle of *O. truncata* is unknown but beetles serve as intermediate hosts of the congener *O. anolis* (Conn 1985). *Parapharyngodon rotundatus* is endemic to Africa and has been reported from a variety of lizards also listed in McAllister et al. (2011). *Spauligodon smithi* was originally described from *C.* (as *Pachydactylus*) *bibronii* by Bursey et al. (1997) and was subsequently reported from the same host by Goldberg and Bursey (2002a). It has been reported from *Adolfus jacksoni, Colopus wahlbergii, Meroles suborbitalis, Nucaras tessellata, Pedioplanis lineoocellata, Pedioplanis namaquensis*, and *Ptenopus garrulous*, (Goldberg & Bursey 2002a, 2002b, 2004, 2005, 2006, 2009; McAllister et al. 2010). *Parapharyngodon rotundatus* and *Spauligodon smithi* have direct life cycles and infection most likely occurs by ingestion of eggs (Anderson 2000). *Chondrodactylus bibronii* represents a new host record for *Oochoristica truncata* and *Parapharyngodon rotundatus*.

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GEKKONIDAE

***Hemidactylus mabouia* (Moreau De Jonnès, 1818)**
Tropical House Gecko

PREDATION

Geckos are preyed upon by a variety of different predators. One of these predators is the Rain Spider (*Palystes superciliosus*). Both Rain Spiders and Tropical House Geckos commonly seek refuge in buildings where they prey upon invertebrates attracted by lights at night. Predation on the Common Tropical House Gecko (*H. mabouia*) by the Rain Spider (*Palystes* sp.) has been documented by (Hawthorne 1998).

On 6 December 2008, at 22h00 in the campsite of Bonamanzi Game park, Hluhluwe, KwaZulu-Natal, South Africa, we observed a Rain Spider (*P. superciliosus*) feeding on a Tropical House Gecko (*Hemidactylus mabouia*)on a wall in the camp kitchen. Because of the diet of this spider it is also referred to as the Lizard-eating Spider. The spider was not disturbed and it took about 6 hours to eat the lizard.

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GEOGRAPHICAL DISTRIBUTIONS

REPTILIA: SQUAMATA

COLUBRIDAE

Gonionotophis nyassae **(Gunther, 1888)**
Black File Snake

Nyondo (1729DC), 100 km east of Rundu, at 22h00 on the tarred road. Observed with Hennie Roets of the Crocodile Ranch and Snake Park.

This species is currently known from only three localities in Namibia (Griffen 2003), viz., Okapuka (2217AC), Grootfontein (1918AC) and Katima Mulilo (2724CA). In December, 2011, at 22h00 an adult male was found on the tarred road at Nyondo, 100 km east of Rundu in the Caprivi Strip. This new locality represents a range extension 312 km north-east of Grootfontein which is the nearest locality recorded for this species in Namibia. The snake regurgitated a *Lygosoma s. sundevalli*. The specimen has been deposited in the National Museum, Windhoek (SMR 1078/JV 95161).

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ELAPIDAE

***Naja nivea* Linnaeus, 1758**
Cape Cobra

Namibia, Damaraland. 10 km south of the Brandberg West Mine (2114BA) collected by Gernot Ahrens, Windhoek (Fig. 1).

The most recently defined Namibian distribution for this species is south of Windhoek (Griffin 2003). The closest I have recorded this species south of Windhoek is 125 km south of Rheboth (2317AC). The Brandberg West Mine specimen is from 350 km north-west of Windhoek and represents a considerable extension of range for this species. The specimen has been deposited in the National Museum Windhoek under catalogue number SMR 1077.

Figure 1: Cape cobra (*Naja nivea*) from Damaraland, Namibia.

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CORDYLIDAE

Cordylus vittifer (Reichenow, 1887)
Common Girdled Lizard

Mozambique, Maputo Province, Estatuane, on the lower eastern slopes of the Lebombo Mountains (2632AC). Four specimens of *Cordylus vittifer* (NMZB-UM 30515-8) were collected by Jose Tello in March 1974 and deposited in the collection of the Natural History Museum, Bulawayo, Zimbabwe. Both *Smaug w. warreni and Platysaurus intermedius wilhelmi* were also collected by Tello at this locality. Description of specimens: Scales of the first transverse row of dorsals much longer than those of the second row; nasals in broad contact; frontonasal widely separated from both the loreals and frontal, except in NMZB-UM 30516 in which the frontonasal is absent; interparietal separated from frontoparietal, except in NMZB-UM 30517 in which they are in narrow contact; supraciliaries 3; suboculars 3; supralabials 5-7, usually 6; infralabials 6; gulars between posterior angles of jaws 15-18; dorsals + laterals transversely 23-25; dorsals + laterals (excluding granules) longitudinally 26; ventrals transversely (from axilla to groin) 24-25; ventrals longitudinally 14-18; femoral pores in male 8 per thigh, with 24 modified scales per thigh; lamellae beneath fourth toe (one foot) 13-15. Measurements: male (NMZB-UM 30517) 46 mm snout-vent length + 54 mm tail length; largest female (NMZB-UM 30518) 79 mm + 91 mm. *Cordylus vittifer* has a large range and is widely distributed in the South African provinces of Limpopo, Mpumalanga, Gauteng, the eastern part of North West Province, northern and north-eastern Free State, and KwaZulu-Natal (De Waal, 1978; Jacobsen, 1989; Bourquin, 2004), Swaziland (Boycott, 1992) and south-eastern Botswana (Auerbach, 1987). Although the occurrence of this species in Mozambique was reported by Auerbach (1987: 122, “on the southern border of Mozambique”), Branch (1998: 195, “one record from Mozambique”, not plotted on map) and Broadley (2006: 7, “southwest Mozambique [eastern slopes of the Lebombo Range]”), this note provides full documentation for the specimens that appear to have been the basis of these statements. The species has been recorded from the adjacent quarter-degree cells of 2631BD and 2632CA in Swaziland (Boycott, 1992).

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AGAMIDAE

***Agama hispida* (Linnaeus, 1754)**
Southern Spiny Agama

On 3 October 2011, an adult male *Agama hispida* in breeding colours was observed basking on a railway line and photographed on the farm Knolfontein in the Riebeek valley, Western Cape, South Africa (Fig.1). A female was also spotted on the same day on a nearby gravel road followed by another female specimen on 7 October in the same vicinity. No voucher specimen was collected due to the individuals darting off soon after being photographed and no collecting permits.

Knolfontein is located approximately 33°19'47.68" S, 18°52'15.52" E, altitude 153 m, in the Riebeek West valley approximately 2 km and 27 from Riebeek West and Malmesbury in the Swartland Region, respectively. The general area is well developed with vineyards and wheat the main source of farming.

Agama hispida is widely distributed from south western Namibia throughout the western and Northern Cape Province including an isolated small population in the north western Free State in South Africa (Branch 1998, Griffin 2003, Alexander and Marais 2008). Branch (1998) indicates that *A. hispida* prefer arid semi-desert and coastal dunes.

Figure 1. *Agama hispida* from the Riebeek West area, south Western Cape, South Africa.

Confirmed sightings in the general area include Tulbach (28 km), Worcester (65 km) and Stellenbosch (67 km) (McLachlan 1981). Our sighting confirms *A. hispida* in a well developed anthropogenic setting in the Riebeek valley although in 30 years living in the area, this is the first observation by the authors.

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GEKKONIDAE

***Lygodactylus capensis capensis* (A. Smith 1849)**
Cape Dwarf Gecko

With reference to the previous discovery of the Cape Dwarf Gecko *Lygodactylus capensis capensis* in the Western Cape Province, South Africa (De Villiers 2006, Witberg & Van Zyl 2008), the species has subsequently been recorded from several sites within the town of George, including the Garden Route Botanical Garden (33^0 56' 50,8" S, 22^0 27' 46,5" E), altitude 256 m. Although only adults have been seen, it is assumed that the species has established itself within the town environs (five adults and subadults seen at the Botanical Garden on March 23, 2012) where an adult was photographed (Fig. 1). No specimens were collected. This locality is approximately 400 km east of Somerset West and 350 km west of Port Elizabeth, the nearest locality (Branch, 1998).

Figure 1: Cape Dwarf Gecko (*Lygodactylus capensis*) photographed at the Garden Route Botanical Gardens, George, South Africa.

As inferred by Witberg & Van Zyl (2008) the species may have been translocated with nursery plants from Gauteng but it is as likely that those geckos and their eggs were transported, together with household items, of people resettling in the Western Cape. With the large-scale movement of people from Gauteng it is probable that such geckos will be found in most towns in the Western Cape Province. For several years I had a Tropical House Gecko (*Hemidactylus mabouia*) in my house in Wilderness Heights, which had obviously been transported with goods from Pretoria.

Although there may be some competition with local species such as the Marbled Leaf-toed Gecko (*Afrogecko porphyreus*) in choice of habitat, this is likely to be limited as the Cape Dwarf Gecko is diurnal whereas the former and other species of similar size are nocturnal. The latter is therefore successfully exploiting a previously unoccupied niche.

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African Herp News publishes manuscripts in four categories, namely Articles, Herpetological Surveys, Natural History Notes, and Geographical Distributions. **CONTRIBUTIONS SUBMITTED IN AN INCORRECT STYLE (SEE GUIDELINES BELOW) WILL BE RETURNED TO THE AUTHORS**. All submissions should be set in 10 pt, Times New Roman font, with 1.15 line spacing throughout. Submitted manuscripts should not contain any consecutive space characters, nor should they contain tab characters. Every word in English common names should start with a capital letter (e.g., Namaqua Dwarf Adder).

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African Herp News publishes longer contributions of general interest that would not be presented as either Natural History Notes or Geographical Distributions. A standard format is to be used, as follows: **TITLE** (capitals, bold, centred); **AUTHOR(S)** (bold, centred); *Author's address(es)* (italicised; use superscript Arabic numerals with authors' names and addresses if more than one author); **HEADINGS** (bold, aligned left) and **Subheadings** (bold, aligned left) as required; **REFERENCES** (bold), following the standardised formats described below.

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African Herp News publishes succinctly annotated species lists resulting from local surveys of amphibians and reptiles on the African continent and adjacent regions, including the Arabian peninsula, Madagascar, and other islands in the Indian Ocean. The area surveyed may be of any size but should be a defined geographic unit of especial relevance to the herpetological community. For example, surveys could address declared or proposed conservation reserves, poorly explored areas, biogeographically important localities or administrative zones. The relevance of survey results should be judged by the extent that these records fill distributional gaps or synthesise current knowledge. As far as possible survey records should be based on accessible and verifiable evidence (specimens deposited in public collections, photos submitted illustrating diagnostic features, call recordings and sonograms, or DNA sequences accessioned into international databases). Survey results should be presented in the same format as for Articles (described above), and must additionally include a section titled **SYSTEMATIC ACCOUNT** (bold) comprising *Scientific name* (including author citation), location and habitat, evidence (including registration numbers and location of vouchers), and comments (where required). **REFERENCES** should follow the standardised formats described below.

NATURAL HISTORY NOTES

Brief notes concerning the biology of the herpetofauna of the African continent and adjacent regions, including the Arabian peninsula, Madagascar, and other islands in the Indian ocean. A standard format is to be used, as follows: **FAMILY**; ***Scientific name*** (**including author citation**); **English common name** (using Bill Branch's *Field Guide to Snakes and Other Reptiles of Southern Africa*, third edition, 1998, for reptiles; and Du Preez & Carruthers' *A complete guide to the frogs of southern Africa*, 2009, for amphibians as far as possible); **KEYWORD** (this should be one or two words best describing the topic of the note, e.g. Reproduction, Avian predation, etc.); the Text (in concise English with only essential references quoted). The body of the note should include information describing the locality (Country; Province; quarter-degree locus; location; latitude and longitude in D° M' S" format; elevation above sea level), providing the date (day, month, year), naming the collector(s), and stating the place of deposition and museum accession number or describing the fate of the animal. **REFERENCES** should follow the standardised formats described below. **SUBMITTED BY: NAME**, Address, E-mail.

GEOGRAPHICAL DISTRIBUTION

Brief notes of new geographical distributions of amphibians and reptiles on the African continent and adjacent regions, including the Arabian peninsula, Madagascar, and other islands in the Indian Ocean. Records submitted should be based on specimens deposited in a recognised collection. A standard format is to be used, as follows: **FAMILY**; ***Scientific name* (including author citation)**; **English common name** (using Bill Branch's *Field Guide to Snakes and Other Reptiles of Southern Africa*, third edition, 1998, for reptiles; and Du Preez & Carruthers' *A complete guide to the frogs of southern Africa*, 2009, for amphibians as far as possible). The body of the note should include information describing the locality (Country; Province; quarter-degree locus; location; latitude and longitude in D°M'S" format; elevation above sea level), providing the date (day, month, year), naming the collector(s), and stating the place of deposition and museum accession number, or fate of the animal. The body should also include information on the size, colour and taxonomic characters (e.g., scalation, webbing) used to identify the specimen, as well as the distance to the nearest published locality. **REFERENCES** should follow the standardised formats described below. **SUBMITTED BY: NAME**, Address, E-mail.

REFERENCES

Reference formatting is similar to *African Journal of Herpetology*. References should be listed in alphabetical order and should refer only to publications cited in the text. References should be in the following format:

ALEXANDER, G.J. 2007. Thermal biology of the Southern African Python (*Python natalensis*): does temperature limit its distribution? Pp. 50-75. In HENDERSON, R.W., AND POWELL, R. (eds.), *Biology of the Boas and Pythons*. Eagle Mountain Publishing, Utah.

BRANCH, W. R. 1998. *Field guide to the snakes and other reptiles of southern Africa*. Third edition. Struik Publishers. Cape Town.

COTTONE, A.M. 2007. Ecological investigations of the Psammophiidae (Squamata: Serpentes). Unpubl. MSc thesis. Villanova University, Pennsylvania.

FROST, D.R. 2010. Amphibian Species of the World: an Online Reference. Version 5.4 (8 April, 2010). http://research.amnh.org/vz/herpetology/amphibia/ (accessed 27 April 2010).

LAMB, T., BISWAS, S. & BAUER, A. 2010. A phylogenetic reassessment of African fossorial skinks in the subfamily Acontinae (Squamata: Scincidae): evidence for parallelism and polyphyly. Zootaxa, 2657:33 – 46.

Note that author names are set as SMALL CAPS, not ALL CAPS, and that Journal Titles are not abbreviated. Formatting should be achieved using paragraph settings and NOT tabs or spaces. Citations should occur in chronological order: (Branch 1998, Alexander 2007, Cottone 2007, Frost 2010, Lamb et al. 2010). For papers with more than two authors, only the first author should be named in the text (e.g., Masterson et al. 2010) without italicising "et al.". Cite unpublished data as in press, e.g., Marais (in press), which then appears in the list of references, or as J. J. Marais (pers. comm.), in which case Johan J. Marais's name and institutional affiliation should appear under Acknowledgements. Unpublished reports should be cited as personal communications.

TABLES, FIGURES, AND PHOTOGRAPHS

Tables should be submitted as separate MS Excel files. Tables should be small enough to fit onto an A5 page, and should NOT contain any vertical lines. Photographs and figures should be submitted as separate JPEG files, and not embedded in the text. They should preferably be 500—800 KB in size, and not more than 1.5 MB. The name of the photographer should be given, if not taken by the author of the submission. Each table, figure, or photograph, needs to be associated with an appropriate caption that should follow the reference list in the submission.

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