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Find out more about the Group on our website at http://afrotheria.net/ASG.html and follow us on Twitter @Tweeting_Tenrec

To help PJ focus on our conservation work, Chris and Mathilde Stuart have kindly agreed to take on the role of editing the next edition of *Afrotherian Conservation.* Their contacts are in the guidelines for submissions (page 17). We hope you'll send them plenty of material for the next edition.

Galen Rathbun, Cambria, California, USA
&
PJ Stephenson, Gland, Switzerland
1 October 2015

Message from the Chairs

Galen Rathbun & PJ Stephenson
Co-Chairs, IUCN/SSC Afrotheria Specialist Group

It's been a busy twelve months for the group. Sadly, 2015 started with the terrible news that Peter Vogel had passed away. Peter was a global expert on shrews but he was a long-term member of the group due to his specialist knowledge of otter-shrews; he was one of the few biologists to capture and study these illusive afrotheres. We include an obituary to Peter on page 8 and send our condolences to his family, friends and colleagues.

Many group members have been helping update the IUCN Red List assessments for the smaller afrotheres under our charge, and we thank Andrew Taylor, our Red List Co-ordinator, for keeping us on track. Most of the tenrec section met in Madagascar in April to start developing an action plan for the Malagasy tenrecs (a workshop report is summarized on page 10). It gave PJ a chance to visit Andasibe, his main PhD study site, for the first time in 25 years and reminisce with old colleagues.

There has been some restructuring in the group. We are now co-chairs, PJ having been officially appointed by the SSC Chair Simon Stuart in June. We undertook this change to better spread the workload and to improve the conservation activities of our group. We have divided responsibilities that best fit our interests and strengths. Galen will largely continue to deal with the information and research aspects of our group, whereas PJ will focus on developing and implementing conservation projects. The co-chairs' roles are explained in more detail on page 13. One of the first things PJ did as a co-chair is to represent our specialist group at the IUCN/SSC Leaders' Conference in Abu Dhabi, 15-18 September (See the Afrotheria News section).

Chequered sengi (*Rhynchocyon cirnei*) by Jonathan Kingdon

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Dendrohyrax arboreus has been cited as present in Benin in the past, although they do not give details. To test our hypothesis, quantitative study of museum specimens would be useful, together with an analysis of DNA in tissue samples. One of our colleagues has already collected fresh tissue from two western Nigerian tree hyraxes, but samples are still lacking from east and west.

If an evolutionarily distinct population of tree hyraxes is confirmed in western Nigeria and the Dahomey Gap, this would support the proposition that there was a Pleistocene forest refuge in this region that led to the differentiation of several vertebrate taxa (Booth 1958, Grubb 1978a, Oates 2011). This area has distinct forms of potto (*Perodicticus potto juju*), guenon monkey (*Cercopithecus erythrogaster*) and small forest duiker (*Philantomba walteri*) (Grubb 1978b, Colyn *et al.* 2010, Oates 2011), and two closely-related genetic clades of soft-furred mouse, *Praomys misonnei,* which are distinct both from those found east of the Cross River and from *Praomys tullbergi* west of the Volta River (Nicolas *et al.* 2010).

Conclusion

Given the major qualitative difference in the long calls of the Benin tree hyrax (rattles and barks) and the western tree hyrax (klaxon calls), in addition to our evidence of differences in their anatomy, it would be surprising if these animals did not prove to be a separate species. Tree hyraxes in general are under threat from deforestation and bushmeat hunting and our understanding of their taxonomy is a vital first step towards clarifying their distribution and status. Based on our extensive library of hyrax calls, built up over the last 35 years, we believe that a major taxonomic revision of this highly cryptic group is long overdue.

Acknowledgements

We are grateful for the help provided by Colin Groves, Diana Roberts and the staff of the Mammals Section, Natural History Museum, London. Additional tape recordings were provided by Yvonne de Jong and other members of the Nocturnal Primate Research Group. We thank those who contributed useful input through the peer review process.

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Notes on hyrax in South Sinai's high-mountains

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Introduction

Of the three extant genera of hyrax, *Procavia* is the most widely distributed, ranging from the Cape of South Africa to Lebanon at the northernmost extent of its range (Barry *et al.* 2008a). The number of species recognized in *Procavia* varies greatly. The taxon has been divided into five species by Kingdon (2011), with mitochondrial DNA variation indicating two species in South Africa (Prinsloo & Robinson 1992). However recent classification recognises a single species, *Procavia capensis*, commonly referred to as the rock hyrax or rock

dassie (Shoshani 2005, Barry *et al.* 2008a).

Rock hyrax habitat typically encompasses areas of bare rock in the form of outcrops, cliffs, and boulders with colonies centred around crevices and holes (Sale 1966). They inhabit a wide altitudinal range from below sea level along the margins of the Dead Sea (Koren *et al.* 2006) to over 4,000 m in the alpine zone of Mount Kenya (Young & Matthew 1993). Rock hyraxes are able to adapt to a wide range of ambient temperatures (Brown & Downs 2006) and tolerate aridity in desert environments (Kingdon 2011).

Both the rock hyrax and the bush hyrax, *Heterohyrax brucei,* have been recorded as occurring in the Egyptian Sinai peninsula (Barry & Shoshani 2000, Kingdon 2011). However other literature on the region's mammalian fauna does not include Sinai within the range of the bush hyrax (Osborn & Helmy 1980, Harrison & Bates 1991). Hoath (2003) treats the ranges of *P. capensis* and *H. brucei* as indistinguishable in Sinai and implies that greater evidence exists for the presence of *P. capensis*. Recent assessments regard records of *H. brucei* from Egypt (and Sinai) as erroneous, with no confirmed reports (Hoffmann *et al.* 2008). Thus Sudan represents the northernmost extent of that species' distribution (Barry *et al.* 2008b). Basuony *et al.* (2010) also emphasize that the persistent recording of *Heterohyrax* in Sinai by international authors is a long-term mistake and that it is definitively absent from Egypt. Through the distributional literature and sightings of wild and captive individuals we can confidently assume that observations in South Sinai refer to the rock hyrax *P. capensis*.

Rock hyrax distribution is recorded as occurring throughout Sinai's rocky regions, predominantly in the Governorate of South Sinai, being absent from the sandy desert of North Sinai (Barry *et al.* 2008a). Hoath (2003) documents hyrax occurrence in South Sinai from the low-lying areas of Ras Mohammed, Wadi Kid, and Al-Tor, along with the higher altitude mountainous area around the town of Saint Katherine.

Throughout its range the rock hyrax is categorized as 'Least Concern' by the IUCN Red List (Barry *et al.* 2008a). The overall population trend is unknown, but they may be subject to local decline and extinction (Kingdon 2011) as they have high site fidelity with low levels of dispersion (Barry & Mundy 1998, Gerlach & Hoeck 2001). Hyraxes are hunted for bushmeat which may cause localised population declines (Barry *et al.* 2008a, P. Coals, *pers. obs.*). However, in Israel range expansions have been recorded with new agricultural land use (Moran *et al.* 1987), where they are regarded as economically significant orchard pests (Moran & Keidar 1993).

Information on population trends and threats in Egypt is limited and contradictory. Hoath (2003) reports that hyrax numbers are 'much reduced' throughout their Egyptian range due to hunting and clearance of acacia trees for charcoal. However, *Acacia tortilis*i occurs at lower altitudes on sandy plains and wadis (Boulos 1999), is rare in the high mountains of South Sinai and, therefore, unlikely to form a large part of the diet of the rock hyraxes found there. Perceptions of hyraxes by Jebaliya Bedouin and monks of the monastery of St Catherine in South Sinai vary. Hobbs (1995) records hunting of hyrax for meat and skins, and, due to the mammal's taste for shoots and fruits (Barry *et al.* 2008a, Kingdon 2011), some monks and Bedouin view hyraxes as destructive pests and set traps to prevent damage to gardens and orchards. Other Bedouin believe the hyrax to be a distant relative of humans which should not be hunted or eaten (Hobbs 1995).

Site and Methods

Informal conversations were held with Bedouin tribesmen and opportunistic field surveys (in conjunction with vegetation surveys) were carried out from late October to mid-December 2014 in the St Katherine Protectorate, South Sinai.

The St Katherine Protectorate covers 4,350 km^2 of the southern Egyptian Sinai peninsula, encompassing the majority of the high-altitude south Sinai massif to form one of Egypt's largest protected areas (Grainer & Gilbert 2008). The massif is made up of 600 million-year-old red granite, with an igneous pre-Cambian ring-dyke covering 640 km^2 of the centre of the Protectorate (UNESCO 2002). The ring-dyke contains Egypt's highest mountain, Mt St Katherine, at 2,643 m. The mountainous terrain is traversed by steep-sided, dry wadis (valleys). South Sinai receives above-average rainfall (62 mm) (Zahran & Willis 2008) and generally cooler temperatures (summer mean 30^{o}C) than the rest of Egypt, and is the only region where snow can settle (Grainger & Gilbert 2008). The Jebaliya Bedouin tribe inhabit the high-mountains surrounding the town of St Katherine. Unique amongst Bedouin cultures, the Jebaliya have strong historical and cultural ties with the Monastery of St Catherine and retain aspects of Byzantine monastic cultural influence in the form of tended gardens and orchards which they maintain in the high mountains (Hobbs 1995; Zalat *et al.* 2001).

Field observations were carried out in mountainous areas predominantly within the geological ring-dyke over an altitude range of 1,324 m to 2,629 m. In addition to sightings of live animals, we looked for animal signs, specifically middens and urine stains on rocks, which can persist for millennia and provide an historical record of the presence of past colonies (Scott & Bousman 1990, Scott 1996).

Informal conversations were conducted with male members of the Jebaliya tribe. Conversations were held in Arabic with clarification and explanation of specific terms in the Jebaliya Bedouin dialect provided by local Bedouin guides. During conversations relating to hyrax populations and numbers, it was made clear that our area of interest was the high mountains of the Jebaliya territory and not further afield or lowland regions outside of Jebaliya territory. Anecdotal evidence presented here therefore refers to knowledge of hyrax populations within the high mountains of the South Sinai ring-dyke.

Findings and Discussion

From 36 wadis and gullies visited for vegetation surveys, along with trips by foot through the mountains totalling 54 days, five adult hyrax were sighted at a single location in Wadi Jebel Ahmar (Lat. 28.5316333, Long. 33.9617500 Decimal degrees) at an elevation of 1,900 m. The wadi is a steep-sided gully of north-easterly aspect with a bed-gradient of approximately 20 degrees. The easterly wadi wall comprises black volcanic rock, whilst the west is red-coloured granitic rock. The gully bottom is strewn with boulders of 1-2 m^2 with infrequent larger boulders of up

to about 4 m diameter (Fig. 1). The hyraxes were observed feeding upon leaves of a wild fig tree (*Ficus palmata*) for approximately five minutes before retreating into holes between large boulders. There was no visible evidence of middens or urine staining in the area; it is likely that any dung is deposited in inaccessible cracks between large boulders. The individuals in Wadi Jebel Ahmar were the only evidence of hyrax recorded throughout the duration of surveys in the high-mountain region.

Figure 1. Hyrax habitat in Wadi Jebel Ahmar, 1900 m, Lat. 28.5316333, Long. 33.9617500 (Decimal degrees)

At the base of Wadi Jebel Ahmar in a Bedouin orchard-garden, known as Ramadan's Garden, a colony of about 15 captive hyrax is maintained. They serve as a curiosity for tourists and travellers passing through the garden which, as with many orchards in the area, serves as a campsite for tourists and an area where local Bedouin sell handcrafts and curios. Despite the existence of this captive colony, wider efforts have not been made to domesticate the species as a source of meat to supplement household supply or income, as has been attempted in Yemen (Stevenson & Hesse 1990). However, it is thought that the hyraxes from Ramadhan's Garden are occasionally sold to Saudi Arabians, who believe that hyrax blood and meat have medicinal (aphrodisiac) properties (F. Gilbert, *pers. obs*). Hobbs *et al.* (1998) report a Gararsha tribal community at al-Hiswa in the lower altitude west of South Sinai watching over a hyrax colony, but no consumptive use is mentioned for this colony.

The Jebaliya said that hyraxes are much rarer in the high mountains than they once were, asserting that large-scale decreases have taken place in the last 10-15 years. They conceded that hunting may play a role in these declines, but they do not think that hunting pressure has increased. Instead they believe hyrax population declines are in large part due to the spread of red fox (*Vulpes vulpes*), a hyrax predator, into the high mountain region.

The first record of the Middle Eastern red fox, *Vulpes vulpes arabica*, in Sinai was made in the late 1990s (Saleh & Basuony 1998) and has reportedly followed human settlement to become the commonest fox species found in the St Katherine area (Gilbert & Zalat 2009). The red fox is listed amongst the 100 worst invasive species in the world (Lowe *et al.* 2000). In both the Old and New Worlds, expansion of non-native red fox distributions is widely documented to have had detrimental effects upon indigenous species across a range of taxa, since they are predators of reptiles, birds, and small- and medium-sized mammals (Dickman 1996, Lewis *et al.* 1999, Risbey *et al.* 2000, Hardin *et al.* 2001, Saunders *et al.* 2010).

Better documented declines in mammal abundances in Sinai of Dorcas gazelle, *Gazella dorcas* (El Alqamy & Din 2006), and Nubian ibex, *Capra nubiana* (El Alqamy *et al.* 2010), are attributed to direct human impact (hunting). Anecdotal evidence from the Jebaliya Bedouin concerning perceived declines in hyrax abundance, if indeed due to expansion of red foxes around St Katherine, may represent wider-scale undocumented impacts of the red fox in Sinai. No quantitative data are available to assess the absolute extent of hyrax declines in South Sinai's high mountain area. However, indigenous perception should serve as an alarm bell as to the state of species and ecosystems in the region and has been shown to be an effective addition to the methods of evaluating conservation status (Ziembicki *et al.* 2013).

We cannot prove categorically that hyrax numbers have been impacted by red fox expansion, nor are there quantitative figures relating to hyrax numbers or red fox range expansion in the region. Nevertheless, local knowledge suggests there may be a link. Only through long-term, comprehensive, quantitative monitoring studies of South Sinai's mammals (cf. Gecchele 2013) can more accurate population trend predictions be made and assessed.

Acknowledgements

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Afrotheria News

Obituary: Professor Peter Vogel

5 February 1942 – 12 January 2015

Nicole Chuard © UNIL

It is with great sadness that we report the loss of one of our specialist group members. Professor Peter Vogel passed away on 12 January 2015 following a serious heart operation. He was 24 days away from his 73rd birthday.