

Conclusions and considerations for the future

Within just four years of their arrival in Europe, the new Tanzanian aardvarks have managed to establish themselves and breed. This positive start is a good omen for their future in European zoos. Moreover, the newcomers represent an opportunity to solve the aardvark inbreeding problem. But before mixing Tanzanian and southern African aardvarks it is urgent to test the relationships between the two populations to avoid gene dilution and outbreeding depression, respectively.

Robovsky and colleagues at the University of South Bohemia in the Czech Republic are currently working on the genetics of the captive aardvarks, and depending on the results, mixing or isolation of the two captive populations will need to be assessed. However, there are a few additional considerations in further developing a sound captive breeding programme: Currently there are 16 adults and one new-born Tanzanian aardvark in European zoological institutions. It is unclear if this number is sufficient for a viable population, even with a highly successful reproductive rate in these new animals. Finally, the inbreeding problem faced by the original European aardvark population, of southern African origin, would still not be solved, and might even spread to the American population, without additional animals (and genetic variability) from Africa. Encouragingly, a dozen zoological institutions in Europe have shown interest in obtaining their first aardvarks (Schoo 2011), so that with sound, scientifically-based coordination of the acquisition and transfer of individuals, a long term solution to the inbreeding problem could be found.

Even though the aardvark is considered "Least Concern" by the IUCN Red List (Lindsey *et al.* 2008), Africa is developing quickly, and in the future even animals that are currently seemingly safe could become threatened. With a viable zoo-breeding programme re-introduction becomes a possible conservation option in the future. Moreover, studies performed on the zoo population can have repercussions on wild aardvarks. In particular, the question of sub-species validity could show a more complex biodiversity pattern in modern aardvarks than previously realized. The conservation status of *O. afer* would have to be refined accordingly.

Acknowledgements

We would like to thank Prof. Dr. M. Niekisch (Director of the Frankfurt Zoo) for his constant encouragement and Prof. Dr. M. Niekisch and Dr. Stefan Stadler (Curator of Birds and Ungulates at the Frankfurt Zoo) for a thorough review of the manuscript.

References

- Allendorf, F. W. & Luikart, G. 2006. *Conservation and the genetics of populations*. Blackwell, Malden, Massachusetts, USA.
- Flower, S.S. 1929. *A list of the vertebrated animals exhibited in the gardens of the Zoological Society of London 1818–1927. Vol. I. Mammals*. Zoological Society, London, UK.
- Frankham, R., Ballou, J. D. & Briscoe, D. A. 2002. *Introduction to conservation genetics*. Cambridge University Press, Cambridge, UK.

- Ganswindt, A. Parys, A., Wielebnowski, N. & Lehmann T., 2011. Non-invasive assessment of reproductive and adrenocortical steroid hormones in captive aardvarks (*Orycteropus afer*). *Afrotherian Conservation*, 8: 17-18.
- Goldman, C.A. 1986. A review of the management of the Aardvark (*Orycteropus afer*) in captivity. *International Zoo Yearbook*, 24: 286–294.
- Lehmann T. 2006. The biodiversity of the Tubulidentata over Geological time. *Afrotherian Conservation*, 4: 6–11.
- Lehmann, T. 2007. Amended Taxonomy of the order Tubulidentata (Mammalia, Eutheria). *Annals of the Transvaal Museum, Pretoria*, 44: 179-196.
- Lehmann, T. 2009. Phylogeny and Systematics of the Orycteropodidae (Mammalia, Tubulidentata). *Zoological Journal of the Linnean Society*, 155: 649-702.
- Lindsey, P., Cilliers, S., Griffin, M., Taylor, A., Lehmann, T. & Rathbun, G. 2008. *Orycteropus afer*. In: IUCN 2011. *IUCN Red List of Threatened Species*. Version 2011.2. www.iucnredlist.org. Accessed on 23 May 2012.
- Melton, D.A. 1976. The biology of aardvark (Tubulidentata, Orycteropodidae). *Mammal Revue*, 6 (2): 75-88.
- Schoo, W. 2009. *European studbook for the aardvark (Orycteropus afer) – update to fourth edition (August 2009)*: 10 pp.
- Schoo, W. 2010. *European studbook for the aardvark (Orycteropus afer) – second update to fourth edition (July 2010)*: 11 pp.
- Schoo, W. 2011. *European studbook for the aardvark (Orycteropus afer) – third update to fourth edition (July 2011)*: 11 pp.
- Shoshani, J., Goldman, G.A. & Thewissen, J.C.M. 1988. *Orycteropus afer*. *Mammalian Species*, 300: 1-8.
- Taylor, W.A. 2005. Order Tubulidentata. Pp 35-40 in J.D. Skinner & C.T. Chimimba (eds.), *The Mammals of the Southern African Subregion*. Cambridge University Press, Cambridge, UK.
- Wegner, R.N. 1925. Erdferkel. *Mitteilungen aus dem Frankfurter Zoo, Zoologischer Garten (Frankfurt am Main)* 8:5-6.

Review

Eponyms in the Afrotheria: Who were the people that had Afrotheria species named after them?

Galen B. Rathbun

Department of Ornithology and Mammalogy, California Academy of Sciences (San Francisco), USA
grathbun@calacademy.org

Several species in the supercohort Afrotheria are named after people, but most mammalogists know little, if anything, about them. The data below were assembled from the book *The Eponym Dictionary of Mammals* by Beolens, Watkins, & Grayson and published in 2009 by Johns Hopkins Press. Link Olson and PJ Stephenson also contributed information. The taxonomy is from www.afrotheria.net accessed November 2010.

If you can fill any gaps or know of an eponym in the Afrotheria that we've missed, please let me know.

Taxon	Common Name	Person species is named after	Nationality	Vocation	Dates
<i>Eremitalpa granti</i>	Grant's golden mole	Capt. Claude H.B. Grant	British	Ornithologist	1878-1958
<i>Chrysofallex trevelyani</i>	Giant golden mole	Herbert Trevelyn	?	?	? - ?
<i>Chrysochloris visagiei</i>	Visagie's golden mole	I.H.J. Visagie	South African	Landowner	? - ?
<i>Chrysochloris stuhlmanni</i>	Stuhlmann's golden mole	Prof. Franz Stuhlmann	German	Zoologist	1863-1928
<i>Chrysochloris zyl</i>	Van Zyl's golden mole	Maj. Gideon van Zyl	South African	Landowner	1873-1956
<i>Carpitalpa arendsi</i>	Arends' golden mole	Nicholas P. Arends	British	Collector	? - ?
<i>Carpitalpa duthieae</i>	Duthie's golden mole	Dr. Augusta Duthie	South African	Botanist	1881-1963
<i>Carpitalpa sclateri</i>	Sclater's golden mole	William L. Sclater	British	Ornithologist	1863-1944
<i>Amblysomus marleyi</i>	Marley's golden mole	Harold W. Bell-Marley	South African	Naturalist	1872-1945
<i>Neamblysomus gunningi</i>	Gunning's golden mole	Dr. Jan W. B. Gunning	Dutch	Physician	1860-1913
<i>Neamblysomus julianae</i>	Juliana's golden mole	Juliana Meester	South African	Spouse	1919-1986
<i>Micropotamogale lamottei</i>	Nimba otter shrew	Dr. Maxime Lamotte	French	Zoologist	1920-2007
<i>Echinops telfairi</i>	Lesser hedgehog tenrec	Dr. Charles Telfair	British	Collector	1778-1833
<i>Microgale cowani</i>	Cowan's shrew tenrec	Rev. William D. Cowan	British?	Missionary	1844-1923
<i>Microgale dobsoni</i>	Dobson's shrew tenrec	George E. Dobson	Irish	Zoologist	1848-1895
<i>Microgale drouhardi</i>	Drouhard's shrew tenrec	E. Drouhard	French	Forester	? - ?
<i>Microgale grandidieri</i>	Grandidier's shrew tenrec	Alfred Grandidier	French	Naturalist	1836-1921
<i>Microgale jenkinsae</i>	Jenkins' shrew tenrec	Paulina D. Jenkins	British	Mammalogist	?
<i>Microgale majori</i>	Major's long-tailed tenrec	Charles I. Forsyth Major	British	Paleontologist	1844-1923
<i>Microgale nasoloi</i>	Nasolo's shrew tenrec	Nasolo Rakotoarison	Malagasy	Mammalogist	1961-1996
<i>Microgale talazaci</i>	Talazac's shrew tenrec	Rev. Pere Talazac	French	Missionary	? - ?
<i>Microgale thomasi</i>	Thomas' shrew tenrec	M.R. Oldfield Thomas	British	Mammalogist	1858-1929
<i>Rhynchocyon cirnei</i>	Chequered sengi	Manuel J.M. Cirne	Portuguese	Governor	1784-1832
<i>Rhynchocyon petersi</i>	Black-and-rufous sengi	Dr. Wilhelm K.H. Peters	German	Naturalist	1815-1883
<i>Elephantulus edwardii</i>	Cape rock sengi	Jean B. Edouard Verreaux	French	Naturalist	1810-1868
<i>Elephantulus revoili</i>	Somali sengi	George E.J. Revoil	French	Naturalist	1852-1894
<i>Elephantulus rozeti</i>	North African sengi	Claude-Antoine Rozet	French	Army Officer	1798-1858
<i>Heterohyrax brucei</i>	Yellow-spotted hyrax	James Bruce	British	Explorer	1730-1794

Afrotheria News

An update on the threats to Afrotheria in northern coastal Kenya

As reported in the last edition of *Afrotherian Conservation* (Amin *et al.* 2011), the wooded areas in northern coastal Kenya are coming under threat from unsustainable forest exploitation and clearance for agriculture. These forests are a haven for several afrotheres, including aardvark and three species of sengi, while dugongs are found in the coastal waters (Andanje *et al.* 2010, 2011); they are also home to the indigenous Aweer people (also known as the Boni), whose culture and lives as hunter-gatherers have been forged from their long and intimate association with the forest.

In July 2011 we undertook a participatory rural assessment with the Aweer in Mangai, one of the six Aweer settlements (see Fig 1.), to understand more about the interdependence of the people and the ecosystem (Bett *et al.* 2011). Today perhaps less than 1,500 Aweer people live in the forest and none in the Boni or Dodori national reserves. They depend primarily on crop farming although they have had no formal support in their efforts to become cultivators and most have limited means and little access to agricultural extension and other services or markets. There is also considerable crop damage done by wildlife, especially by buffalos and baboons and increasingly by hippos, whose numbers are reported to be on the increase. All attempts to secure compensation from the authorities for the damage associated with human-wildlife conflict have failed. The majority of people remain food-insecure most years. Coping strategies to address the deficit include falling back on traditional hunting and gathering skills, with women and older girls foraging for fruits, tubers, herbs and berries from the forest, and men collecting honey.

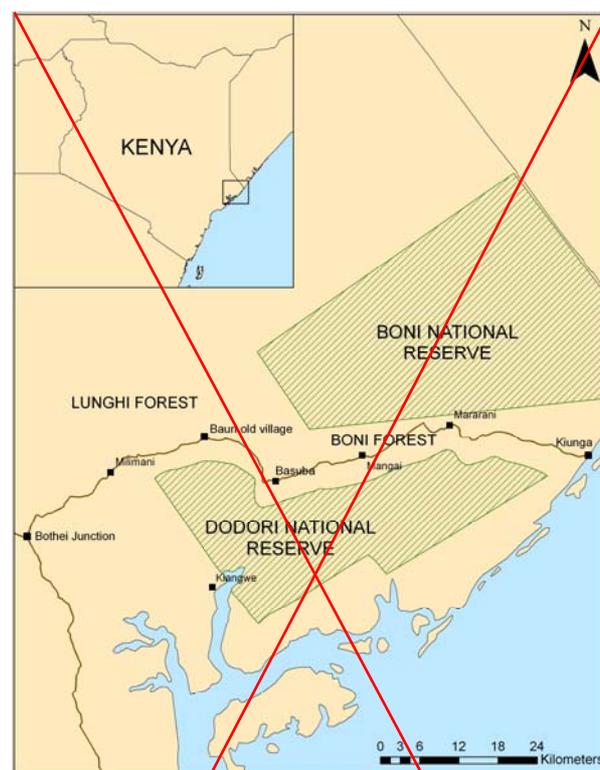


Figure 1. Map of north-eastern Kenya, showing national reserves and Aweer settlements.

Faced with few alternatives, the Aweer communities have continued to open up new farmlands within the forest corridor between the Boni and Dodori national reserves. The Constitution of Kenya 2010 calls for devolution of decision-making to county level, so now there is an excellent opportunity for community-based forest and related resources management with the Aweer and Tora communities to be promoted by the county governments and the relevant government agencies (i.e. Kenya Forest Service, Kenya Wildlife Service, National Environment