Probable records of Pousargues's Mongoose *Dologale dybowskii* in the Chinko/Mbari drainage basin, Central African Republic

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Abstract

Little information is available about the biology, behaviour and habitat of Pousargues's Mongoose *Dologale dybowskii*, a species which is known only from museum specimens and a few sightings. During 2009–2012, suspected living Pousargues's Mongooses were sighted several times in the Chinko/Mbari drainage basin in Central African Republic. This report holds the first images of the Mongoose in its habitat, and covers all physical, behavioural and ecological attributes observed.

Keywords: camera-trapping, habitat analysis, *Helogale parvula*, Herpestidae, new record

Des observations probables de la Mangouste des savanes *Dologale dybowskii* dans le bassin de drainage de Chinko/Mbari, en République centrafricaine

Résumé

Peu d'information est disponible sur la biologie, le comportement et l'habitat de la Mangouste des savanes *Dologale dybowskii*, une espèce qui est connue seulement par l'entremise de spécimens de musées et de quelques observations. De 2009–2012, des individus vivants de ce que nous suspectons être la Mangouste des savanes ont été observés à plusieurs reprises dans le bassin de drainage de Chinko/Mbari, en République centrafricaine. Cette note livre les premières images de cette Mangouste dans son habitat, et reporte toutes les caractéristiques physiques, comportementales et écologiques qui ont pu être observées.

Mots clés: analyse de l'habitat, *Helogale parvula*, Herpestidae, nouvelle observation, piégeage photographique

Pousargues's Mongoose *Dologale dybowskii* is endemic to Central Africa and is presumed rare. Scientific knowledge of this small carnivore is restricted to 31 specimens stored in museum collections, limited scientific drawings and a few reliable sightings, none of which occurred in the past 20 years (Stuart *et al*. 2008).

Due to political strife and low accessibility, the east of the Central African Republic (CAR) belongs to one of the least scientifically investigated areas of Earth today. As a result, there is a striking deficiency of data for organisms restricted to this region. The possible distribution of *D. dybowskii* proposed by Stuart *et al*. (2008) includes eastern CAR. Thanks to the fortunate collaboration with "Central African Wildlife Adventures", a local hunting safari company, access to this region was obtained.

In April 2012, while conducting a large-mammal study in the Chinko/Mbari drainage basin in CAR (Fig. 1), TA and RH asked hunting guides and locals for possible *D. dybowskii* sightings, and were then informed by AP (a hunting guide) of his sightings of an undetermined brownish mongoose that was distinctly smaller than the other mongooses of which he knew. He had made several sightings (Table 1) during his four years in the area, and had taken pictures in late 2011 (e.g. Fig. 2). Based on this information, we investigated the area in which AP reported the mongoose. We dedicated three full days of observation and mounted spare camera-traps for weeks. However, there were no further records of the mysterious mongoose until the very end of the large mammal survey in April 2012 (Table 1). We then filmed (see Table 1 for links) and took pictures of what was most likely to be one single individual, and observed it for several minutes. To learn more about its behaviour, we mounted camera-traps (e.g. Fig. 3) covering all holes of the abandoned termite mound (Fig. 4) that the individual was sighted in and around.

According to the literature, the most obvious and particular physical characteristics of *D. dybowskii* are its small size (body length: 22–33 cm; tail length: 16–23 cm), thick and bushy tail, powerful claws on the forefeet – associated with digging – and prominent reverse cowlick of fur on the throat (Kingdon 1997: 244). Our observations took place under various light conditions, but the mongoose observed appeared short legged, small bodied and very dark, with a short bushy tail. Claws on the forefeet seemed very massive and powerful, as can be seen on one camera-trap picture (Fig. 3). Estimated measurements obtained from that picture with the open source software "ImageJ" using a scale bar are: head length (8 cm), ear opening–nose tip (6 cm), eye–nose tip (3 cm) and shoulder height (11.5 cm).

The combination of characteristics of the observed individual strongly indicates Pousargues's Mongoose, differentiating it from other mongoose species potentially in the area. The similar small sympatric Common Slender Mongoose *Herpestes sanguineus* has a longer and much thinner tail and overall body appearance. The body, tail and legs of Marsh Mongoose *Atilax paludinosus*, Egyptian Mongoose *H. ichneumon*, White-tailed Mongoose *Ichneumia albicauda* and Long-nosed Mongoose *H. naso* are much larger than that of the observed animal, and additionally the tails of *H. ichneumon* and *H. sanguineus* have conspicuous black tassels, obviously absent in the observed animal. In fact, the observed animal resembled and behaved similarly to the better-known Common Dwarf Mongoose *Helogale parvula*. Common Dwarf Mongoose has a groove on the upper lip and strong teeth, characteristics not shown by *D. dybowskii* (Kingdon 1997). These features could not be checked on the observed animal, so the possibility that

Table 1. Records of probable Pousargues's Mongoose *Dologale dybowskii* in the Chinko/Mbari drainage basin, Central African Republic, 2009–2012.

Observer[1]	Date	Time	Location	Number of animals[2]	Device[3] (distance)	Material
AP	2009	Not recorded	apprx. 6°48′N, 24°00′E	1	Eye	-
AP	20 Dec 2011	11h00–11h30	6°21′10.80″N, 24°00′25.92″E	10–12	Tele-objective, eye (5 m)	Fig. 2
TA	25 Apr 2012	17h30–17h45	6°22′01.74″N, 23°59′11.28″E	1*	Telescope, binoculars, video, eye (7 m)	video[4]
TA+RH	26 Apr 2012	05h15–07h00	6°22′01.74″N, 23°59′11.28″E	1*	Telescope, binoculars, eye (18 m)	-
TA+RH	26 Apr 2012	09h30	6°22′01.74″N, 23°59′11.28″E	1*	Camera-trap (1 m)	Fig. 3

[1]Observers: AP, Adam Parkison; TA, Thierry Aebischer; RH, Raffael Hickisch
[2]*probably the same individual in all three sightings.
[3]Device: binoculars, Swarovski SLC 10×42; telescope, Swarovski ATM HD 20–60×80; camera-trap, Bushnell TrophyCam; eye: unaided eyesight; tele-objective: 400 mm Nikon Coolpix AW100 camera, through the telescope.
[4]On: http://db.tt/vpz4OOty and: http://db.tt/e1NU2YU7

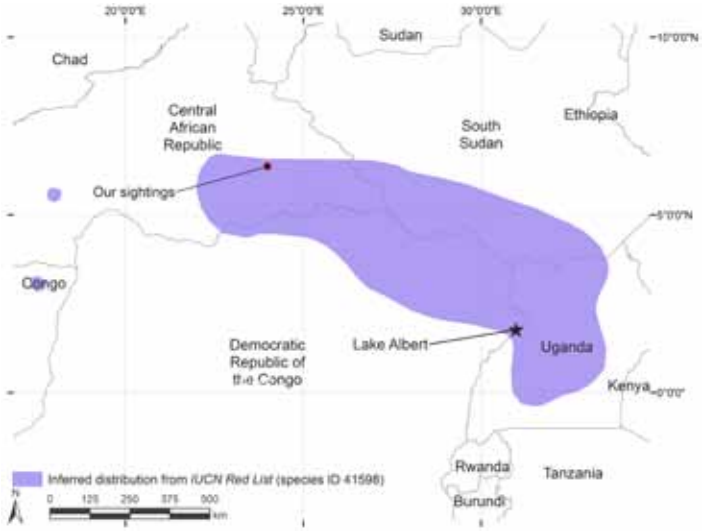

Fig. 1. Pousargues's Mongoose *Dologale dybowskii* possible distribution according to *The IUCN Red List of Threatened Species* (Stuart *et al*. 2008; available via http://bit.ly/dodydist), and localities mentioned in the text.

Fig. 2. First recorded photograph of live presumed Pousargues's Mongoose *Dologale dybowskii*: 20 December 2011, within 11h00–11h30, at 6°21′10.80″N 24°0′25.92″E in the Central African Republic (Photo: A. Parkison).

Fig. 3. Presumed Pousargues's Mongoose *Dologale dybowskii* caught on a Bushnell TrophyCam camera-trap: 26 April 2012, 09h30, at 6°22′01.74″N 23°59′11.28″E in the Central African Republic (Photo: T. Aebischer and R. Hickisch).

Fig. 4. Area around the abandoned termite mound where the presumed Pousargues's Mongoose *Dologale dybowskii* was sighted in late April 2012, in the Central African Republic (Photo: T. Aebischer and R. Hickisch).

it was a Common Dwarf Mongoose cannot be ruled out. However, according to published distribution maps of *H. parvula* (e.g. Kingdon 1997, Gilchrist *et al*. 2009), this seems very unlikely and indeed the obvious similarity of *H. parvula* with the observed small mongoose paradoxically supports the identification of the latter as *D. dybowskii* (P. Schmid verbally 2012). Additional distinctions, particularly from small *Herpestes* species, that could not be evaluated from these photographs include a shorter palate and weaker teeth (Kingdon 1997).

The region where the suspected Pousargues's Mongoose was sighted is a mosaic of tropical wet savannah and deciduous tropical lowland rainforest. Fig. 5 indicates the specific

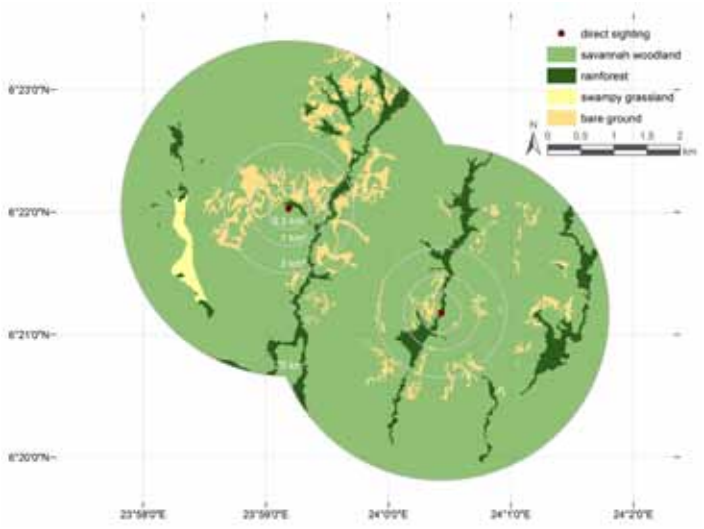

Fig. 5. Habitat around presumed Pousargues's Mongoose *Dologale dybowskii* sightings in December 2011 and April 2012 in the Central African Republic (map available at http://bit.ly/dodyhabitat).

habitat around the locations where individuals were sighted during 2009–2012 (Table 1). Savannah woodland was the most abundant habitat type, containing 87% of the surface on a larger scale around the abandoned termite mounds of the two locations. True forests and bare ground of white clay made each only around 6% of this area. Swampy grassland was the least frequent vegetation type with only 1%. No previous habitat study of *D. dybowskii* has been published, although some individuals were observed in thick riparian vegetation on the border of Lake Albert (Democratic Republic of the Congo and Uganda), and others in mountain forest grasslands (Stuart *et al*. 2008) (Fig. 1). Based on the latter records and what is known of the behaviour of other mongoose species, Kingdon (1997) concluded that *D. dybowskii* is a diurnal species occurring in the moist savannahs and edges of tropical rainforests in Central Africa north of the equator.

Given its small size and the savannah's strong daily temperature fluctuations, it is reasonable to assume that *D. dybowskii* thrives in a shelter that protects it from larger predators and the unfavourable climatic conditions. In our case, several signs or observations of the Mongoose suggest that it might have been inhabiting the abandoned termite mound at and around which it was observed: 1) bite marks and damage to and on various plants near the mound; 2) a particularly strong, 'small-carnivore-like' odour close to the mound's holes; 3) when disturbed by the observer, the Mongoose ran systematically very quickly to the termite mound to take shelter.

To conclude, this represents the first possible, scientifically-based record of *D. dybowskii* in more than 20 years (see Stuart *et al*. 2008). This does not necessarily mean that *D. dybowskii* is extremely rare. The paucity of recorded information could simply be linked to the species's geographical distribution and/or naturally elusive behaviour. Today its suspected habitat correlates with politically unstable regions and very remote areas where wildlife can only be surveyed under extremely difficult conditions. Despite this, further research in the Chinko/Mbari basin is planned, and should hopefully allow for future scientific investigations on Pousargues's Mongoose.

Recommendations for further research on alleged *D. dybowskii* individuals include more data on their biology and behavioural ecology (i.e. life history parameters, diet, social and spatial organisation, etc.) and physical characteristics (i.e. weight, exact body measurements, presence of a reverse cowlick of fur on the throat, absence of a groove on the upper lip, weak teeth, etc.), to provide a more comprehensive diagnosis and understanding of this mongoose species.

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References

Gilchrist, J. S., Jennings, A. P., Veron, G. & Cavallini, P. 2009. Family Herpestidae (mongooses). Pp. 262–328 in Wilson, D. E. & Mittermeier, R. A. (eds) *Handbook of the mammals of the world, 1. Carnivores*. Lynx Edicions, Barcelona, Spain.

Kingdon, J. 1997. *The Kingdon field guide to African mammals*. Academic Press, London, U.K.

Stuart, C., Stuart, T. & Hoffmann, M. 2008. *Dologale dybowskii*. In IUCN 2012. *IUCN Red List of Threatened Species*, Version 2012.1. <www.iucnredlist.org>. Downloaded on 19 September 2012.

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