

New small mammal records from the Adrar Soutouf and Tirs region, Atlantic Sahara

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Introduction

Small mammal trapping was undertaken during a short biological research expedition to the Atlantic Sahara, southwestern Morocco in February/March 2017.

Methods

Small mammal trapping using Longworth and Sherman traps was undertaken at three micaceous massifs in arid desert: Koudiat Laghnam, Adrar Soutouf (N 22°11'16.81" W 15°20'42.03"); massif de Madès, Adrar Soutouf (N 21°52'08.88" W 15°23'08.28"); and at Laglat massif, Tirs (N 22°36'55" W 14°28'06" near the town of Aousserd).

DNA was isolated from hair samples using the QIAamp DNA Micro Kit (QIAGEN, UK) according to manufacturer's instructions apart from addition of 0.1 M dithiothreitol to the proteinase K digestion mix. DNA was eluted in 80 µl of buffer AE. For genetic identification, a 1.1 kb fragment of the mitochondrial cytb gene was obtained using primers L14115 and H15288 with annealing temperature 52°C as described in Martin *et al.* (2000). PCR products were run on a 1.5% agarose gel and purified using the QIAquick Gel Extraction Kit according to manufacturer's instructions with elution in 30 µl buffer EB. Forward and reverse Sanger sequencing was performed by Source BioScience (Nottingham, UK) and any ambiguous bases resolved by eye or re-sequencing. BLAST searches for sequence similarity were performed at <https://blast.ncbi.nlm.nih.gov/Blast.cgi>.

Results

Chudeau's Spiny Mouse *Acomys chudeaui*

This species inhabits rocky areas with desert populations using hillsides and cliffs (Plate 1).

Two specimens were captured on 28th February 2017 in the Laglat massif, northwest of Aousserd (Plate 2). This represents a significant range extension to the southwest with the nearest previously known Moroccan populations present in the lower Draa valley and Zemmour (> 400 km to northeast) (Aulagnier *et al.* 2017). Its distribution in other areas of Atlantic Sahara remains to be fully established, however, it seems likely to be present in all suitable habitat in the region, particularly given its presence in massifs around Atar (Mauritania), ca. 300km to the south of Aousserd (Nicolas *et al.* 2009).



Plate 1. Habitat of Chudeau's Spiny Mouse and North African Gerbil in the Laglat massif, Tirs



Plate 2. Chudeau's Spiny Mouse, Laglat, 28th February 2017

North African Gerbil *Gerbillus campestris*

This species was confirmed from two localities:

- Laglat massif on 28th February 2017 (Plate 3).
- Up to three individuals in Madès massif on 2nd and 3rd March 2017.

Considered one of the most widespread and common species in North Africa, populating all steppe and cultivated areas from the Atlantic to the Red Sea. Widely distributed in Morocco, south to the Draa Valley, the Tarfaya region and the Saquiat Al Hamra south to Boujdour, this species inhabits palm groves, scree and vegetated wadi beds, avoiding high mountains and forests.

These new records constitute a *ca.* 450 km range extension to the south. There are no records of this species in Mauritania¹.



Plate 3. North African Gerbil, Laglat, 28th February 2017

Pygmy Gerbil *Gerbillus henleyi*

The distributional range of Pygmy Gerbil appears discontinuous along the very dry northern edge of the Sahara to Arabia; it is also present along the southern edge of the Sahara. In Morocco, it has been reported to the south of the western Anti-Atlas, particularly in the lower Draa valley south of Guelmim. It has also been reported in southern Tafilalt and in the interior of the Oued Ad deheb near Aousserd. Its preferred habitat appears to be in vegetated dunes, stony wadi beds, coastal marshes, and even in some cultivated zones.

One was encountered whilst walking through a wadi bed in the Massif de Madès, Adrar Soutouf, on 2nd March 2017 (Plate 4), representing the most southwesterly record of this species in Morocco.

¹ <https://www.iucnredlist.org/species/45088/22465830>



Plate 4. Pygmy Gerbil, Massif de Madès, Adrar Soutouf, 2nd March 2017

Lesser Egyptian Gerbil *Gerbillus gerbillus*

A small gerbil captured in Koudiat Laghnam on 1st March 2017 was confirmed as this species through DNA analysis. However, this individual was found to have no white spot on the rump, a feature considered typical of this species (Plate 5).

According to Happold (2013), the northern limit of the distribution of Nigerian Gerbil *Gerbillus nigeriae* is at the Mauritania/Atlantic Sahara border and is therefore a candidate for discovery in the southern reaches of Atlantic Sahara, including the Adrar Soutouf massifs. It is similar in appearance to Lesser Egyptian Gerbil and lacks the white rump spot. Future researchers should be aware that occasionally this feature is absent in Lesser Egyptian Gerbils.

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Plate 5. Lesser Egyptian Gerbil exhibiting no white rump spot, Koudiat Laghnam, Adrar Soutouf, 1st March 2017