

12-31-2020

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### Recommended Citation

Drouai, H., Noudjem, Y., & Mimeche, F. (2020). New Record of Two Rodent Species from Khenchela Region (East of Algeria), *Journal of Bioresource Management*, 7 (4).

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### Cover Page Footnote

We would like to thank Mr. Alouani Radhoune for providing the map of the studied area and Mr. Lounis Drouai for his help during the sampling.

## NEW RECORD OF TWO RODENT SPECIES FROM KHENCHELA REGION (EAST OF ALGERIA)

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### ABSTRACT

*Mus spretus* is endemic to the Mediterranean region and *Jaculus orientalis* is only found in North Africa and Saudi Arabia. Their presence in Algeria was previously evidenced in other studies, the present paper focuses on the recent discovery of the *Jaculus orientalis* Erxleben, 1777 and *Mus spretus* Lataste, 1883 in a new locality of the East of Algeria, in Khenchela region (Aurès Mountain), based on weight and external measurements. The sampling period took four months between April and July 2019. This observation will enrich the knowledge of Algerian Rodents fauna in general and of Khenchela in particular.

**Keywords:** Rodents fauna, Diversity, Aurès, Algeria, Mediterranean.

### INTRODUCTION

Rodents are distributed over the entire world occupying all types of habitats (Hubert, 1984; Aulagnier and Thevenot, 1986; Aulagnier et al., 2017). Inventories of rodent species made in Algeria by several researchers (Kowalski and Rzebik-Kowalska, 1991; Bachar and Balhamra, 2012; Souttou et al., 2012; Beddiaf et al., 2013; Adamou et al., 2015; Hadjoudj et al., 2015; Aulagnier et al., 2017; Drouai et al., 2018) assign these to Sciuridae, Ctenodactylidae, Gliridae, Dipodidae and Muridae families. The subfamily of Dipodinae (family Dipodidae) in Algeria is represented by two species, *Jaculus jaculus* and *J.orientalis* (Ben Faleh et al., 2010; Aulagnier, 2016; Aulagnier et al., 2017).

The subfamily Murinae (family Muridae) has a distribution spanning the old world, including whole of Africa (Lecompte et al., 2008). 25% of all extant murine species live in Africa, including 32 endemic genera (Musser and Carleton, 2005). Two genera are lives between Africa and Eurasia. One of these is the

genus *Mus* (Veyrunes et al., 2005). In North Africa, *M. spretus* occupy the Maghreb area. In Algeria it appears in the Mediterranean belt and to the south it reaches the northern border of the Aures Mountains (Kowalski and Rzebik-Kowalska, 1991).

Here we present a preliminary data of new locality of *Jaculus orientalis* and *Mus spretus* in Khenchela region (semiarid region), aiming to evaluate the status of this species. We have made many sampling but this was the best region for the collection of these two species.

### MATERIAL AND METHODS

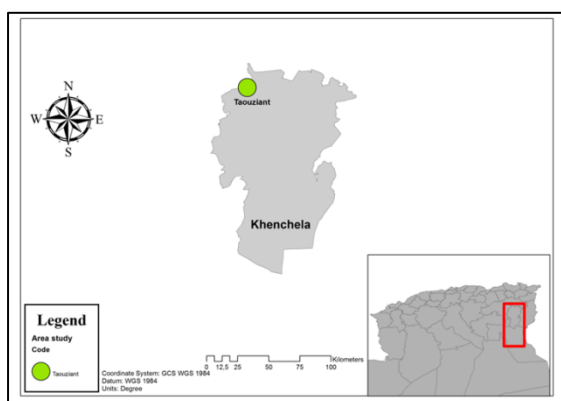
#### *Study Area*

The study was carried out in Taouziant (Khenchela), located in the East of Algeria. The area has agricultural and natural landscapes in equal proportions. The average of the maximum temperature (34.9 °C) is observed in July, and the average minimum (1.85 °C) in January. The average annual precipitation is 508.83 mm, classified as semi-arid region

(Drouai, 2018). The trap sampling was carried in natural area (35°29'56.7"N and 6°45'18.8"E) (Figure 1) with an altitude of 945 m above sea line. *Artemisia herba alba* Asso., *Frangula alnus* Mill., and *Retama retam* Webb & Berthel were the main plant species at the sampling site.

### Sampling

The sampling was carried out between mid-April and mid-July 2019. We used 40 wire traps of BTS type (Besançon Technique Service, France) baited with bread soaked in tuna oil (Ben Hamou et al., 2006). The traps were placed in two lines of 100 m long, 25 m apart, and 5m between each trap in each line. Traps were baited and set between 5:00 p.m. and 7:00 p.m. for four consecutive nights per season. They were checked between 7 a.m. and 9 a.m. the next day (Avenant, 1997; Hadjoudj et al., 2015; Avenant and Cavallini, 2007).



**Figure 1: Map of the study area**

Captures were moved alive to the laboratory, identified to species level using the identification key (Aulagnier and Thevenot, 1986; Aulagnier et al., 2008; Aulagnier et al., 2017). Then, the specimens were euthanized and standard external body measurements were recorded: body length with head (BH), length of tail (T), hind foot length (HF) and ear length (E) were also taken in mm.

## RESULTS

Two species were captured in study area, which belonged to two genera and two sub-families (Table 1). The trapped species were: two specimens (adult female and young male) of *Jaculus orientalis* Erxleben, 1777}, and three specimens (adult male, adult female young male) of the Algerian mouse *Mus spretus* Lataste, 1883}. Their measurements are reported in Table 2.

**Table 1: Rodent species collected at Taouziant (Khenchela).**

Subfamily	Species	Our Study
Murinae	<i>Mus spretus</i> (Lataste, 1883)	3
Dipodinae	<i>Jaculus orientalis</i> (Erxleben, 1777)	2

## DISCUSSION

According to the wild mammal catalogue of Morocco (Aulagnier and Thevenot, 1986; Aulagnier et al., 2017), these specimens correspond to *Jaculus orientalis*. These authors have reported the same morphological characters, as well as similar measurements (Table 2). Bouhaddou (2016) reported an average length of the tail of 128 to 250 mm. Kirmiz (1962) note that males are slightly larger than females and that the average body mass is 139.1g. *J. orientalis* has a distribution extending from Morocco to southern parts of Israel (Aulagnier, 2016). Biche et al., (2001) mentioned that this species is a prey of the desert grand duke *Bubo ascalaphus* in the Mergueb Nature Reserve (M'Sila, Algeria). The presence of the Greater Jerboa Egyptian in this region, which is located at the limit of the known current distribution of both: *Jaculus orientalis* (to the North of Algeria) and *Jaculus jaculus* (to the South of Algeria).

Many authors in Algeria have reported the presence of *Mus spretus* in the Tiaret region by Adamou-djerbaoui et al., (2015), in Touggourt, Southeast Algeria (Hadjoudj et al., 2015), Souttou et al., (2012) in Djelfa, Khammes et al., (2006) and Khidas et al., (1999) in Kabylie. The external measurements of this species are similar of these authors (Table 2).

*Mus spretus* is known to occupy a wide range of habitats in the Maghreb (crops, orchards, matorrals, juniperaies, and open forests) up to cultivated areas of oases and it reaches 1600 m altitude in Algeria and Morocco (Kowalski and Kowalska, 1991; Khidas, 1993; Aulagnier and Thévenot, 1986).

**Table 2: External measurements of *Mus spretus* and *Jaculus orientalis* in this study and observed by the other authors**

Species	Sex	Weight(g)	BH (mm)	T (mm)	HF (mm)	E (mm)	
<i>Jaculus orientalis</i>	Adult female	161.6	149.0	238.5	78,7	29.7	This study
	Young male	137.9	142.8	227.4	73.0	26.9	
	-	-	130-150	220-250	72-80	24-30	Aulagnier & Thevenot (1986)
<i>Mus spretus</i>	Female	19	84.4	67	17.3	13.7	
	Young male	16.5	72.3	54	15.6	11.2	This Study
	Male	20.1	86	69	18	14.4	
	-	-	70-85	50-70	15-18	11-15	Aulagnier & Thevenot (1986)
	-	18.33	80	75.33	17	9.67	Hadjoudj et al., (2015) (Mean)
	-	-	76.77	57.83	16.83	12.76	Khammes et al., (2006) (Mean)

BH: Body length with head, T: length of tail, HF: hind foot: and E: Ear lengths

## CONCLUSION

Whereas the data on rodents in semiarid region stay insufficient, this work underscores that the altitude and the climate would be a combination of ecological factors in this region which largely determine the distribution and the diversity of the rodents in East Algeria.

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