

## First record of *Nyctinomus aegyptiacus* for Tunisia

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**Abstract.** We report on the first record of the Egyptian free-tailed bat (*Nyctinomus aegyptiacus* Geoffroy, 1818) in Tunisia. The finding refers to a voucher specimen collected at Ksar Ghilane (Jbil National Park). Morphological characters and measurements of the specimen are presented.

**Chiroptera, Molossidae, Tunisia, North Africa**

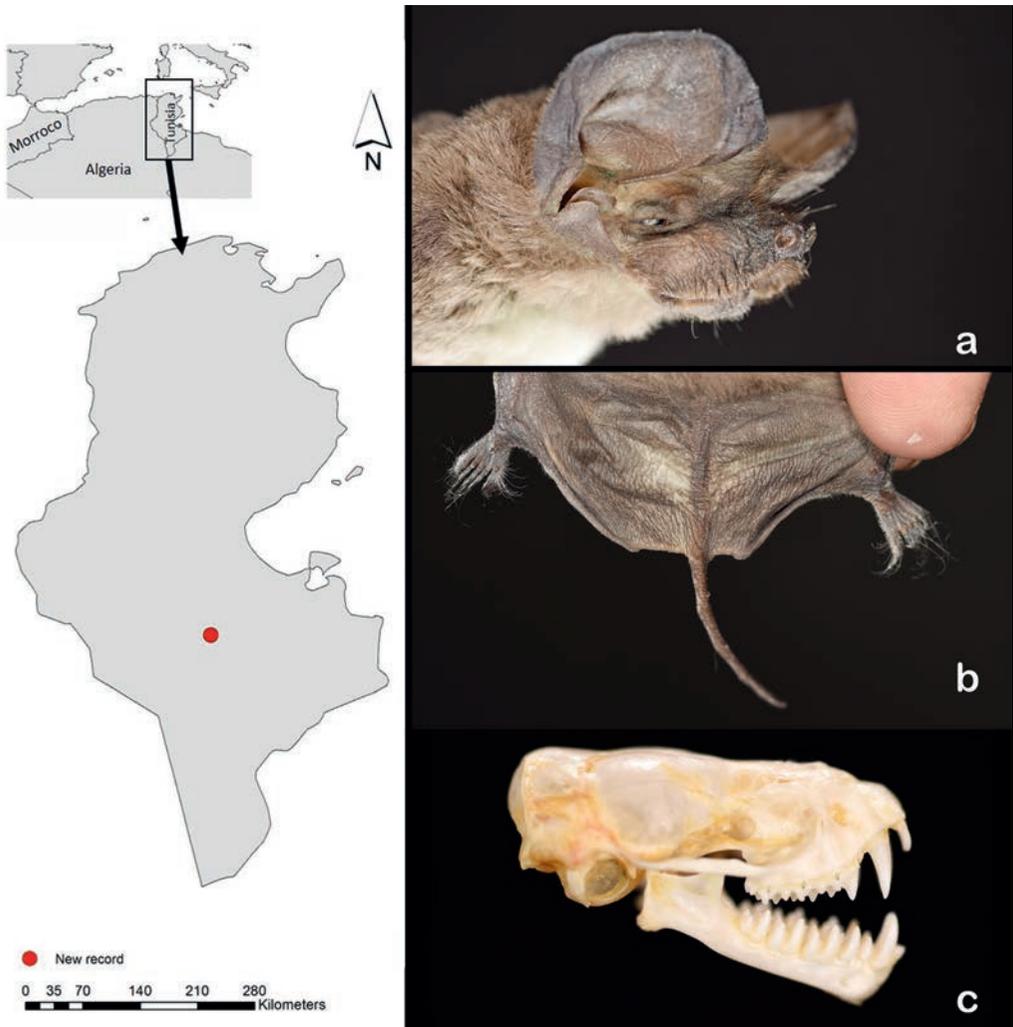
### Introduction

The family Molossidae is widely distributed throughout the world and comprises about 100 species (Simmons 2005, Ammerman et al. 2012). They are small or medium sized insectivorous bats with a free tail projecting beyond the interfemoral membrane, and prominently wrinkled lips. There are 40 species of the family in Africa (Van Cackenberghé & Seamark 2008). However, only two species occur north of the Sahara: the European free-tailed bat *Tadarida teniotis* (Rafinesque, 1814) and the Egyptian free-tailed bat *Nyctinomus aegyptiacus* Geoffroy, 1818. The latter is traditionally grouped within the genus *Tadarida* (e.g. Simmons 2005). Here we regard *Nyctinomus* as an independent genus, following Benda et al. (2012): *Tadarida* and *Nyctinomus* differ in various traits, for example in the number of lower incisors (Harrison & Bates 1991). Moreover, *N. aegyptiacus* has much smaller forearm and cranial measurements than *T. teniotis* (Harrison & Bates 1991).

The Egyptian free-tailed bat is widely distributed, with its range extending throughout Africa, southern Arabia, and as far northeast as the West Bengal province in eastern India (Bates & Harrison 1997, Srinivasulu & Srinivasulu 2007, Benda et al. 2012, Shah et al. 2014). It is likely that the Egyptian free-tailed bat, as regarded in traditional taxonomy, comprises at least two closely related species: *N. aegyptiacus* in North Africa, Iran, Pakistan and south-western Arabia and *N. thomasi* (Wroughton, 1919) in southern Arabia and western India (Benda et al. 2012). In North Africa, the Egyptian free-tailed bat has only been reported from Egypt, Algeria and Morocco (Benda et al. 2004).

In Tunisia, data on bats were first provided in the 19th century by Hartmann (1868) who reported the presence of two species. Between the 1870s and the 1980s, more species were recorded (Dalhoumi et al. 2011). In a recent review, Puechmaille et al. (2012) give extensive data on the occurrence of 19 bat species in the country, while the recent description of *Miniopterus maghre-*

*bensis* (Puechmaille et al. 2014) adds another species to the country's faunal list. The geographical position of Tunisia, with a long coastline along the Mediterranean Sea, and the diversity of its habitats are factors providing potential niches to further species. For example, in the Great Eastern Erg, some additional species occur in Algeria but have not yet been found in Tunisia.



Figs. 1, 2. 1 – Position of Ksar Ghilane in Tunisia, the locality where the Egyptian free-tailed bat *Nyctinomus aegyptiacus* specimen was collected. 2 – The Egyptian free-tailed bat *Nyctinomus aegyptiacus* from Ksar Ghilane, Tunisia; a – portrait, b – tail and tail membrane, c – skull.

Obr. 1, 2. 1 – Posice Ksaru Ghilane v Tunisku, místa kde byl kolektován jedinec morouse egyptského *Nyctinomus aegyptiacus*. 2 – morous egyptský *Nyctinomus aegyptiacus* z Ksaru Ghilane, Tunisko; a – portrét, b – ocas a ocasní létací blána, c – lebka.

Table 1. Measurements (in millimetres) of the the Egyptian free-tailed bat *Nyctinomus aegyptiacus* found at Ksar Ghilane (Tunisia) and comparison to the data on *N. aegyptiacus* from North Africa published by Benda et al. (2012)

Tab. 1. Rozměry (v milimetrech) morouse egyptského *Nyctinomus aegyptiacus* nalezeného u Ksaru Ghilane (Tunisko) a srovnání s údaji o *N. aegyptiacus* ze severní Afriky publikovanými Bendou et al. (2012)

measurement / rozměr	Ksar Ghilan	North Africa (range)
body length / délka těla	65	–
tail length / délka ocasu	42	–
forearm length / délka předloktí	52.0	52.4±1.2 (50.7–55.1)
thumb length / délka palce	6.5	–
length of third finger / délka třetího prstu křídla	90.7	–
length of fifth finger / délka páteho prstu křídla	48.2	–
condylobasal length of skull / kondylobasální délka lebky	19.3	19.9±0.4 (19.1–20.5)
length of upper tooth-row / délka horní zubní řady (CM <sup>3</sup> )	7.8	7.9±0.2 (7.6–8.1)
rostral width between canines / rostrální šířka (CC)	5.7	5.5±0.1 (5.3–5.8)
condylar length of mandible / kondylární délka spodní čelisti	13.8	14.5±0.3 (13.8–14.7)
length of lower tooth-row / délka spodní zubní řady (CM <sub>3</sub> )	8.3	8.6±0.1 (8.3–8.7)

In this paper we describe the first record of *Nyctinomus aegyptiacus* in Tunisia and extend the faunal list to 21 bat species.

## Record

Founded in 1993, the Jbil National Park is situated in the Kébili Governorate, about 70 km south of Douz. The park extends over 150,000 hectares and is mostly covered by the Great Oriental Erg (Chammem et al. 2008). The park is a part of the classic desert formations and features a large variety of geomorphological and ecological environments along a north-south slope, which starts with a plain, continues with a series of mountain ranges followed by streams and their effluents, and ends with dunes. The climate is Saharan with cool winters. The mountain range has an average annual rainfall ranging between 50 and 80 mm in a short period of the year. The vegetation is typically Saharan (Schoenenberger 1992).

On 24 October 2015, during a touristic visit at Ksar Ghilane, we were informed about a bat found on the ground near a campsite located at the eastern margin of the Jbil National Park. The area is an oasis in the Great Oriental Erg with a water source and it is surrounded by shady date palms. We were able to find the bat on the following day, at a site located at 32° 59' 12.6" N, 09° 38' 06.7" E, at 209 m a. s. l. (Fig. 1). The bat had died in the meantime, therefore we collected the carcass and preserved it in surgical alcohol (70%). Measurements were taken with a mechanical precision calliper (Hommel-Hercules Industries, Viernheim, Germany; precision ±0.05 mm).

The adult male bat was identified as *Nyctinomus aegyptiacus*, according to external measurements (Fig. 2a, b, Table 1) and teeth characteristics (Fig. 2c), following Dietz (2005) and Benda (2012). Further measurements were taken from the extracted and cleaned skull, and cranio-dental measurements are given in Table 1. All characteristics, namely the length of the forearm, number of lower incisors and cranio-dental measurements fall within the range of *Nyctinomus aegyptiacus* and differ from those of *Tadarida teniotis*.

## Discussion

The Egyptian free-tailed bat is one of the least recorded bat species across North Africa. In particular, records from north-western Africa are scarce (Benda et al. 2004). Within north-western Africa, the Egyptian free-tailed bat was reported for the first time in Algeria (Dorst & Petter 1959) and later mostly in the southernmost and north-western parts of this country (Hayman & Hill

1971, Schlitter & Robbins 1973, Qumsiyeh 1985). Recently, specimens of this bat have been collected from central to extreme eastern Sahara (unpubl. own data). In Morocco, the species was found in owl pellets in the Anti-Atlas Mts. (Denys et al. 1995) and one individual was captured by Benda et al. (2004).

The occurrence of the species in Tunisia is reported here for the first time, increasing the number of bat species in the country to twenty one. Additionally, the finding extends the poor data on the geographical distribution of *Nyctinomus aegyptiacus* in North Africa. However, the species distribution, abundance and ecology across North Africa remain largely unknown. More data are urgently needed to assess its conservation status.

## Souhrn

**První nález morouse egyptského (*Nyctinomus aegyptiacus*) v Tunisku.** Podáváme zprávu o prvním nálezu morouse egyptského (*Nyctinomus aegyptiacus* Geoffroy, 1818) v Tunisku. Nález představuje uhynulého jedince kolektovaného u Ksaru Ghilane v Národním parku Jbil. Ve zprávě jsou uvedeny morfologické znaky a rozměry dotyčného jedince.

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