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FIRST RECORD OF THE LESSER HORSESHOE BAT, *RHINOLOPHUS HIPPOSIDEROS* (BECHSTEIN, 1800) (RHINOLOPHIDAE, CHIROPTERA) FROM SYRIA

ADWAN H. SHEHAB[1], IBRAHIM H. MAMKHAIR[1], ZUHAIR S. AMR[2]

[1]General Commission for Scientific Agricultural Research (GCSAR), Douma, P.O. Box 113, Damascus, Syria; e-mail: a.shehab@mail.sy
[2] Department of Biology, Jordan University of Science & Technology, P.O. Box 3030, Irbid, Jordan; e-mail: amrz@just.edu.jo

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ABSTRACT - The lesser horseshoe bat *Rhinolophus hipposideros* was recorded for the first time from Syria in 2005-06. Two solitary hibernating specimens (a male and a female) were collected from an underground cave in Basofan village, NW of Aleppo, and from AL Marqab Citadel, Banyas. External and cranial measurements are given for both specimens. The list of recorded species of bats of Syria includes 17 species.

Key words: Horseshoe Bat, *Rhinolophus hipposideros*, Chiroptera, Syria, Middle East

RIASSUNTO - ***Prima segnalazione di Rinolofo minore* Rhinolophus hipposideros *(Bechstein, 1800) (Rhinolophidae, Chiroptera) in Siria***. La specie è stata rinvenuta nel 2005-06 con il ritrovamento di due esemplari solitari ibernanti (un maschio e una femmina), rispettivamente in una grotta presso il paese di Basofan, NO di Aleppo e in AL Marqab, Banyas. Per entrambi gli esemplari sono riportate le misure craniali e esterne. Con il ritrovamento del Rinolofo minore la chirotterofauna della Siria è attualmente rappresentata da 17 specie.

Parole chiave: Rinolofo minore, *Rhinolophus hipposideros*, Chiroptera, Siria, Medio oriente

INTRODUCTION

The bats of Syria are poorly known. So far 16 species have been recorded from different parts of the country (Wettstein, 1913; Trouessart and Kollman, 1923; Harrison and Lewis, 1961; Atallah and Harrison, 1967; Atallah, 1977; Nader and Kock, 1983; Nadachowski *et al*., 1990; Harrison and Bates, 1991; Benda 1996; Benda *et al*., 2003; Shehab *et al*., 2004; Shehab and Mamkhair, 2004). This is mainly due to the lack of logistic support and field work among Syrian zoologists. Within the past two years, we pioneered a project aiming to investigate the bat fauna of Syria.

Of the family Rhinolophidae, two species (*Rhinolophus blasii* and *Rhinolophus euryale*) have been recorded from Syria at the beginning of

1900 (Wettstein, 1913; Trouessart and Kollman, 1923). Recently, the presence of *R. euryale* has been confirmed in one locality and the grater horseshoe bat *Rhinolophus ferrumequinum* has been recorded in four localities (Shehab and Mamkhair, in press).

R. hipposideros is the smallest horseshoe bat in Arabia (Harrison and Bates, 1991) and in the eastern Mediterranean (Qumsiyeh, 1996).

In this paper, we report for the first time the presence of this species in Syria.

STUDY AREA AND METHODS

One hibernating female of lesser horseshoe bat was collected by hand on 02.02.2005 from Basofan village (38 km NW of Aleppo, 8km NE of Saint Samm'an Citadel, northern Syria) (36 26 1053N, 36 55 4168E). A second visit (23.02.2006) did not yield any individual. The village is situated on a rocky hill with many underground natural caves. A hibernating male was collected from Al Marqab Citadel on 23.01.2006, near Banyas city, over looking the Syrian coast (35° 09 0282N, 35° 56 5833E).

Both specimens were prepared (skin and skull) to be housed in the collection of the General Commission for Scientific Agricultural Research (GCSAR), Damascus, Syria. (GCSARZM: 1716, 1721). At present, no authorization is necessary to collect bats in Syria.

RESULTS AND DISCUSSION

The specimen collected from Basofan was a solitary hibernating female, hanging in an underground cave used by locals as a shelter for donkeys and horses. The specimen collected from Al Marqab Citadel was a solitary hibernating male in a lateral dark underground tunnel. The lancet is thick and almost perfectly triangular in anterior view. The superior connecting process of the sella is low and blunt in side view (Fig. 1).

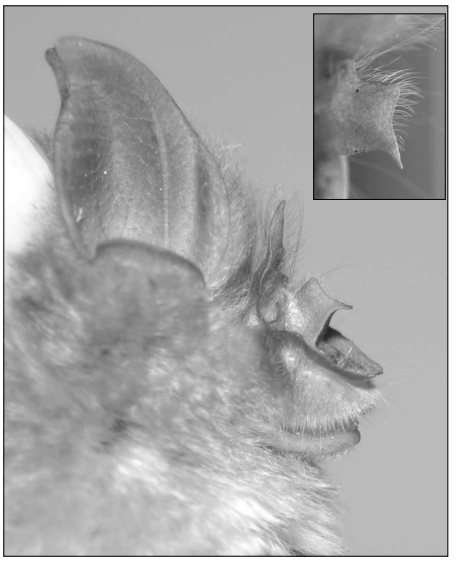

Figure 1 - Lateral portrait of the Lesser horseshoe bat; *R. hipposideros*, male from AL Marqab, Syria. Upper right corner; Sella in side view (for the same specimen).

External, cranial and dental measurements for both specimens of *R. hipposideros* are given in Table 1.

This species is a small-sized horseshoe bat, with wingspan up to 210.0 mm. Its tail (TL = 25.62±1.27; T/HB = 67.35%±4.77) is larger than that of *R. euryale* collected from Salahidien Citadel (Shehab and Mamkhair, in press) which measures less than half of head and body length (TL= 21.42 ± 1.09 mm; T/HB = 46.86% ± 3.98).

The lesser horseshoe bat has been recorded from all the neighbouring

countries - Lebanon, Jordan, Palestine and Turkey (Atallah, 1977; Harrison and Bates, 1991; Qumsiyeh, 1996; Qumsiyeh *et al*., 1986, 1992, 1998; Amr, 2000; Albayrak, 2003; Amr *et al*., 2004) -, but it is more common in the northern Mediterranean climatic zone rather than in arid regions. Qumsiyeh (1980) obtained hibernating individuals in Dibbine Forest, Jordan, during February. Later Qumsiyeh *et al.* (1986) collected active individuals in August. Similar results suggesting the solitary behavior of this bat were reported by Atallah (1977), who stated that only one or two specimens can be found in each locality.

Table 1 - External, cranial and dental measurements (mm) for the lesser horseshoe bat from Northern Syria.

	1716 (♀)	1721 (♂)	Average	SD
EXTERNAL				
Head and body length (HB)	37.5	38.6	38.1	0.78
Tail length (T)	26.5	24.7	25.6	1.27
Forearm length (FA)	37.4	35.8	36.6	1.13
Hind foot length (HF)	6.6	6.6	6.6	0.0
Ear length (E)	13.8	15.4	14.6	1.13
Wingspan length (WS)	210.0	210.0	210.0	0.0
Percentage of tail to head and body length (T/HB)	70.7	64.0	67.4	4.74
Horseshoe	10x6	11x5.6	10.5x5.8	
CRANIAL				
Greatest length of skull (GtL)	15.9	16.1	16	0.14
Condylobasal length (CbL)	14.1	14.1	14.1	0.0
Zygomatic breadth (ZB)	7.4	7.2	7.3	0.14
Brain case breadth	6.8	6.8	6.8	0.0
Width of the postorbital constriction (PC)	1.8	1.7	1.75	0.07
Length of maxillary teeth row (C-M^3)	5.1	5.5	5.3	0.28
Length of mandibular teeth row (C-M_3)	5.6	5.7	5.7	0.07
Mandible length (M)	10	9.7	9.9	0.21
Distance between upper canines (C^1-C^1)	2.5	2.7	2.6	0.14

Table 2 - List of bats recorded from Syria and their localities.

Species	Locality	Source
Asellia tridens	Palmyra, Halabia	Atallah and Harrison, 1967; Nader and Kock,1983
Eptesicus bottae	Euphrates at Qater Maghara Cave	Shehab *et a*l., 2004
Miniopterus schreibersii	Aleppo, Euphrates Valley	Wettstein, 1913
Myotis blythii	Tal Kalakh	Harrison and Lewis, 1961
Myotis capaccinii	Qasret Mohammed Ali	Shehab *et a*l., 2004
Myotis emarginatus	Ras al-Basit, el Lathiqiyeh	Benda, 1996
Myotis myotis	Tal Kalakh, Krak des Chevaliers	Harrison and Lewis, 1961; Nadachowski *et al*., 1990
Otonycteris hemprichii	Karyatien, Qal'aat ar'Rahba	Atallah, 1977; Shehab *et a*l., 2004
Pipisrtilus kuhlii	Damascus, A' Raqua and Apamea, ar'Rasafeh, Euphrates Valley, Qater Maghara, Okersheih, as'Salahiya, and Qasret Mohammed Ali.	Harrison and Bates, 1991; Shehab *et al*., 2004
Pipistrellus pipistrellus	Baniyas, Maalula, Rabi'ah, Ras al-Bassit, Sarghaya and Slinfeh	Benda *et al*., 2003
Plecotus austriacus	Djeroud	Trouessart and Kollman, 1923
Rhinolophus ferrumequinum	Samaan citadel, Basofan, Saladin citadel	Shehab and Mamkhair, in press
Rhinolophus blasii	Aleppo	Wettstein, 1913
Rhinolophus euryale	Aleppo, Djeroud, Saladin citadel, Hamameh (25 km west of Idleb city)	Wettstein, 1913; Trouessart and Kollman, 1923; Shehab and Mamkhair, in press
Rhinolophus hipposideros	Basofan, NW of Aleppo, Al Marqab, Banyas	Present study
Rousettus aegyptiacus	Hamameh (25 km west of Idleb city)	Shehab and Mamkhair, 2004
Taphozous nudiventris	Halabiye, Qater Maghara, and Qasret Mohammed Ali	Shehab *et al*., 2004

Actually a small number of bat species (17) is known for Syria (Tab. 2) compared to the neighboring countries. Iran has the highest bat diversity (39), followed by Turkey (36), Palestine (33), Jordan (24) and Saudi Arabia (23) (Benda *et al*., 2003 and Amr *et al*., 2004). Considering the comparatively large area of Syria and its variety of habitats, further studies should focus on the chiropteran fauna of Syria to reveal the missing species.

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