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A record of Myotis blythi omari (Mammalia, Chiroptera) from Crete, Greece.

by

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Introduction

The large transcaspian mouse-eared bat, *Myotis blythi omari* Thomas, is recorded from Crete. The study is based on the examination of 33 specimens collected from the cave ,,Micro labyrinthaki", in the south area of the island. Body and skull quantitative features have been studied and compared.

Previous records: Until now all collected individuals of the genus Myotis from Crete were recorded as Myotis oxygnathus (Bate, 1905; Pohle, 1953; Kahmann, 1959). Only P. Strelkov (1972) based on the bibliography, recorded for the first time the individuals of Crete as M. blythi omari. Lanza (1959) called specimens from Sardinia, Corsica, Malta and Crete as intermediate because the dimensions of Myotis blythi omari variate between M. myotis and M. oxygnathus. Recently Pieper (1977) recorded M. blythi from owl-pellets which he collected in Crete.

E x a m i n e d s p e c i m e n s : During an excursion in Crete on August 8, 1973 we collected from the above cave 33 specimens (15 males, 18 females) which were roosted together with R. *ferrumequinum creticum*. Unfortunately our first taxonimic estimation was wrong, as they were concidered to be *Myotis oxygnathus*. That's why all specimens were kept in alkohol solution 80 % and no skin was available for the study of coloration. When we visited again after one year the same cave, we could not collect any bat. The reason should be the setting of fire by shepherds last winter.

Description

Cranial characters: The skull is a slender one with braincase narrow and compressed laterally with the rostrum tapered anteriorly. The frontal section is not elevated. The nasal aperture is small and its margin is about level with the back of the third premolar. The interorbital concavity is relatively shallow. The lacrymal region is completly rounded at sides. There are no supraorbital ridges. The zygomatic arches are short with their outer borders slightly convex and enough broader than the braincase. Heft 1-2 30/1979

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The braincase is ovate with the sagittal crest well defined. The lambdoid crest is well developed in the sides and the middle too. The posterior profile of the supraoccipital is vertical; the supraoccipital is very slightly overhanging the foramen magnum. The rostrum is relatively deep and rounded of at the sides with a slight concavity along the median line.

The palate is long and rather narrow while the width of the posterior extension of that is less than its length, terminating a little behind level of last molar and it forms in the posterior edge a short but well developed median spine.

The tympanic bullae rather small, the transverse diameter of each one about equal to distance between the bullae. The mandible is strong with the coronoid process well developed and the angular process projected a little behind the condyle.

D entition: The teeth are heavier than those of *M. oxygnathus* which is particularly noticeable in the breadth of the cheek teeth. Apart from their larger size, the form of the teeth is quite similar with that of *M. oxygnathus*.

M e a s u r e m e n t s : Measurements were taken of the skulls and of the forearmes of 33 adult large transcaspian mouse-eared bats, deposited in the Zoological Museum, University of Patras, Greece (ZMPU) and in the Zoologisches Forschungsinstitut u. Museum A. Koenig, Bonn, Germany (ZFMK). Tables 1 and 2 present body and cranial measurements of the specimens from Crete, table 3 the measurements of 63 females specimens of *Myotis oxygnathus* collected from Flomochorion Peloponnesus (July 20, 1966) and table 4 measurements of *M. blythi omari* from S. Asia (Harrison and Lewis, 1961) and Transcaspian regions (Ognev, 1962), which have been used for comparison.

Table 1. Measurements of Myotis blythi omari from Crete.

| | Females | | | | | |
|---------------------------------|---------|-------|-------------|------|------|--|
| | Ν | Mean | Range | SD | σχ | |
| Forearm length | 18 | 59.17 | 56.0 - 62.4 | 1.79 | 0.42 | |
| Greatest length of skull | 18 | 21.81 | 21.2 - 22.4 | 0.33 | 0.08 | |
| Condylobasal length | 18 | 20.95 | 20.4 - 21.6 | 0.36 | 0.08 | |
| Zygomatic breadth | 18 | 14.17 | 13.7-14.7 | 0.23 | 0.05 | |
| Breadth of braincase | 18 | 9.73 | 9.4 - 10.2 | 0.21 | 0.05 | |
| Interorbital constriction | 18 | 5.30 | 4.9 - 5.4 | 0.15 | 0.04 | |
| Upper toothrow C-M ³ | 18 | 8.89 | 8.6-9.1 | 0.24 | 0.06 | |
| Lower toothrow C-M ₂ | 18 | 9.67 | 9.4 - 10.0 | 0.17 | 0.04 | |
| Mandible length | 18 | 16.69 | 16.3-17.3 | 0.28 | 0.07 | |

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| Table 2. Measurements | of M | yotis blyth | <i>i omari</i> from | Crete. |
|-----------------------|--------|-------------|---------------------|--------|
|-----------------------|--------|-------------|---------------------|--------|

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| Males | | | | |
|-------|---|--|--|--|
| Mean | Range | SD | σχ | |
| 56.75 | 54.0-60.0 | 1.47 | 0.38 | |
| 22.11 | 21.6 - 22.7 | 0.32 | 0.09 | |
| 21.30 | 20.8 - 21.9 | 0.37 | 0.10 | |
| 14.54 | 14.2 - 15.0 | 0.28 | 0.08 | |
| 9.89 | 9.5 - 10.2 | 0.22 | 0.06 | |
| 5.30 | 5.2-5.5 | 0.13 | 0.03 | |
| 9.11 | 8.9-9.5 | 0.19 | 0.05 | |
| 9.81 | 9.6 - 10.2 | 0.19 | 0.05 | |
| 17.04 | 16.7-17.5 | 0.28 | 0.07 | |
| | Mean 56.75 22.11 21.30 14.54 9.89 5.30 9.11 9.81 17.04 | Maies Mean Range 56.75 54.0-60.0 22.11 21.6-22.7 21.30 20.8-21.9 14.54 14.2-15.0 9.89 9.5-10.2 5.30 5.2-5.5 9.11 8.9-9.5 9.81 9.6-10.2 17.04 16.7-17.5 | Males Mean Range SD 56.75 54.0-60.0 1.47 22.11 21.6-22.7 0.32 21.30 20.8-21.9 0.37 14.54 14.2-15.0 0.28 9.89 9.5-10.2 0.22 5.30 5.2-5.5 0.13 9.11 8.9-9.5 0.19 9.81 9.6-10.2 0.19 17.04 16.7-17.5 0.28 | |

Table 3. Measurements of female M. oxygnathus from Peloponnesus

| | Ν | Mean | Range | SD | σχ |
|---------------------------------|----|--------|-------------|------|------|
| Total length | 61 | 128.31 | 119-135 | 3.40 | 0.44 |
| Tail length | 61 | 58.07 | 54.0 - 62.0 | 2.30 | 0.30 |
| Hind foot | 62 | 12.51 | 11.0-13.6 | 0.57 | 0.72 |
| Ear length | 61 | 22.25 | 20.1 - 24.0 | 0.82 | 0.10 |
| Tragus length | 62 | 10.93 | 9.2 - 12.8 | 0.61 | 0.08 |
| Forearm length | 62 | 58.81 | 56.5 - 61.2 | 1.36 | 0.17 |
| Greatest length of skull | 61 | 20.98 | 20.0 - 21.9 | 0.40 | 0.05 |
| Condylobasal length | 60 | 20.24 | 19.4 - 21.2 | 0.40 | 0.05 |
| Zygomatic breadth | 33 | 13.65 | 13.1-14.1 | 0.27 | 0.05 |
| Breadth of braincase | 62 | 9.54 | 9.0-10.0 | 0.21 | 0.03 |
| Interorbital constriction | 62 | 5.04 | 4.8 - 5.9 | 0.12 | 0.01 |
| Upper toothrow C-M ³ | 62 | 8.61 | 8.1-9.0 | 0.20 | 0.03 |
| Lower toothrow C-M ₃ | 62 | 9.02 | 8.4 - 9.5 | 0.21 | 0.03 |
| Mandible length | 54 | 16.63 | 16.0-17.3 | 0.32 | 0.04 |

Table 4. Body and Cranial measusments of Myotis blythi omari

| | S (Ha | S. ASIA (Harrison & Lewis, 1961) | | | Transcaspian region (Ognev, 1962). | | |
|---------------------------------|----------|-------------------------------------|-------------|---|---------------------------------------|-------|-------------|
| | Ν | Mean | Range | 1 | N | Mean | Range |
| Total length | 8 | 133.94 | 126.0-139.0 | - | - | - | _ |
| Body length | _ | | - | | 4 | 67.30 | 61.0-72.0 |
| Tail length | 8 | 62.31 | 58.5-65.0 | | 4 | 56.77 | 55.0 - 60.2 |
| Hind foot | 9 | 13.81 | 10.8 - 16.0 | | 4 | 11.52 | 11.2-12.1 |
| Ear length | 9 | 25.06 | 22.0 - 28.0 | | 4 | 23.97 | 22.9-25.2 |
| Tragus length | | | - | | 4 | 11.95 | 10.1-15.0 |
| Forearm length | 8 | 60.09 | 57.3-62.0 | | 4 | 58.80 | 57.2 - 60.5 |
| Greatest length of skull | 6 | 22.57 | 22.2 - 22.9 | | 3 | 22.33 | 22.0 - 23.0 |
| Condylobasal length | 9 | 21.00 | 20.6 - 21.4 | | 3 | 21.20 | 21.0 - 21.6 |
| Zygomatic breadth | 9 | 14.09 | 13.6-14.6 | | 3 | 14.23 | 14.0-14.7 |
| Breadth of braincase | 9 | 9.61 | 9.3 - 9.9 | - | _ | | _ |
| Interorbital constriction | 7 | 4.96 | 4.8-9.3 | | 3 | 5.47 | 5.2-5.7 |
| Upper toothrow C-M ³ | 9 | 8.90 | 8.4-9.3 | | 3 | 9.30 | 9.0 - 9.7 |
| Lower toothrow C-M ₃ | 9 | 9.72 | 9.3-10.0 | - | | _ | _ |
| Mandible length | 9 | 17.00 | 16.2-17.7 | - | _ | - | - |

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Discussion

The greatest length of the skull of the female specimens from Crete average and range $\bar{x} = 21.81$ mm, 21.2-22.4, n = 18; that is statistically significant different (p < 0.01) from that of the female specimens from Peoponnesus ($\bar{x} =$ 20.98 mm, 20.0-21.9 mm, n = 61). The differences between the above two Greek populations, in the measurements of condylobasal length, zygomatic width, breadth of braincase, interorbital constriction, upper toothrow (CM³) and lower toothrow (CM₃) are at the same level of significance (p < 0.01). Therefore the specimens from Crete are distinguishable from the specimens of Peloponnesus on the basis of differences in Greatest length of skull, Condylobasal length, Zygomatic breadth, Breadth of braincase, Interorbital constriction, Upper toothrow and lower toothrow. On the other hand, there are not significant divergences between the measurements of the specimens from Crete and those given by Harrison and Lewis (1961) and Ognev (1962) for Myotis blythi omari (see table 4). Therefore is obvious the assignement of the population from the island of Crete of the genus Myotis to Myotis blythi omari.

R e m a r k s: The results of the analysis presented above indicate that the individuals from Crete are clearly seperable from those from Peloponnesus studied and confirm that *Myotis blythi omari* occurs on the islands of East Mediterranean area. Therefore the until now known extention of geographical distribution, is from Transcaspian region through west Asia to the Mediterranean islands until Malta and to the North Africa.

Summary

A collection of *Myotis blythi omari* individuals was made in the cave "micro labyrinthaki" on the island of Crete.

The specimens were studied and the results were compared with those taken from individuals of *Myotis oxygnathus* from Peloponnesus and those of *Myotis blythi omari* from Asia (Harrison and Lewis, 1961) and (Ognev, 1962). Data of body and cranial measurements are also given.

The conclusion of the present study is the confirmation of the distribution of *Myotis blythi omari* in Crete.

Zusammenfassung

In der Berghöhle "Micro labyrinthaki" auf Kreta wurde die Fledermausart Myotis blythi omari gesammelt.

Das Material wird mit Myotis oxygnathus vom Peloponnes und Myotis blythi omari aus Asien (Harrison und Lewis 1961, Ognev 1962) verglichen; Körper- und Schädelmaße werden mitgeteilt.

Die vorliegende Aufsammlung belegt die Verbreitung von *M. blythi omari* auf Kreta und ermöglichte erste Angaben zur Morphologie dieser Population.

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