

New Records of the Afghan Vole, *Blanfordimys afghanus* (Rodentia: Arvicolinae) from North-East of Khorassan, Iran

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The Afghan vole had not been reported from north-eastern Iran until for the first time its presence was confirmed by examining the pellets of predatory birds from Dargaz, Kalat, Sarakhs and the vicinity of Mashhad through studying the molar teeth. By further sampling, colonies of this species were found in the periphery of Tandoureh National Park in the Kopet-dag Mountains and also in alpine region of Zoshk near Mashhad in the Binaloud Mountains.

Keywords: Arvicolinae, Binaloud Mountains, *Blanfordimys afghanus*, Iran, Kopet-dag Mountains, Tandoureh National Park.

INTRODUCTION

The first record of the Afghan vole, *Blanfordimys afghanus* (Thomas, 1912) was from Gulran of Badkhez region in the north-west of Afghanistan (Hassinger, 1973). Its taxonomic status in the subfamily Arvicolinae is controversial. The scientific name *Blanfordimys* was proposed originally as a subgenus of *Microtus* by Argyropulo (1933). Ellerman (1941) considered the diagnostic trait of this genus more similar to *Pitymys*, but based on the enormous size of bulla it was different both from *Microtus* and *Pitymys*, and was recognized as a separate genus, *Blanfordimys*, by Ellerman and Morrison-Scott (1951), as well as Zagorodnyuk (1990). Chaline (1974) placed it in *Neodon* as a subgenus of *Microtus*. Corbet (1978) and Corbet & Hill (1991) assigned *Blanfordimys* synonymous with *Pitymys*. The Russian authors (Golenishchev and Sablina, 1991) acknowledged subgenus ranking and Panteleyev (1998) considered the Afghan vole as a species from genus *Microtus*. Musser and Carleton (1993) concurred with *Blanfordimys* as a distinct genus.

Two species of this genus have been recorded from the Middle East and Central Asia: *B. afghanus* from Turkmenistan, Uzbekistan, Tadjikistan, Afghanistan and the Great Balkhan Mountains on the east coast of the Caspian Sea (Musser and Carleton 1993), and *B. bukharicus* (Vinogradov, 1930) from south-western Tadjikistan and possibly north of Afghanistan (Musser and Carleton 1993). Before the present study, this genus had been reported from owl pellets in vicinity of Mashhad (Darvish, 1992).

In this survey the pellets of the predatory birds, containing Afghan vole materials, were collected from different localities: Gol-khandan near Dargaz (37° 30' N, 59° 9' E; one mandible), Kalat (36° 57' N, 59° 42' E; one mandible), Robot-Sharaf of Sarakhs (36° 14' N, 60° 37' E; nine mandibles) and Kale-Chaghrouki near Mashhad (36° 03' N, 59° 45'; one mandible). Sampling of the live specimens was conducted during the spring and summer of 2004 by using snap- and live-traps in the Ghazan prairie regions (altitude : 1700m) near Tandoureh National Park in the north-eastern Khorassan



FIG. 1. – Sampling localities of *Blanfordimys afghanus* in Iran (◻); and the type locality of the species in Afghanistan (◼).

province (37° 19' 16" N, 58° 44' 41" E; 15 specimens, of which only eight were adult) and elevations (altitude: 2400m) of Nehel of Zoshk on the Binaloud Mountains (36° 16' 05" N, 59° 07' 49" E; one adult specimen) (Fig. 1). Identification was carried out by dental and cranial characters. Standard voucher specimens (skins, skulls) were deposited in the Zoology Museum of Ferdowsi University of Mashhad, Iran (ZMF).

The live specimens represent the following characters: the body flat; the color of body light brown in hair extremity and coaly in base of hairs; ventral coloration dirty white; the tail clear brown, small and covered with short hairs; specimens from Tandoureh National Park always with a small black line in the extremity of tail which is absent in Nehel individual; the underside of the tail lighter than upper side; ears short and rounded.

The skull with small snout; bulla large; mastoids extremely inflated and very large, which is distinguishable from *Microtus*; supraorbital ridge knob shaped; squamosal with two dorsal and ventral branches; the zygomatic arc wide; palatine foramina long and reaching the extremity of molars.

All the examined specimens have normal upper M1/ and M2/; M3/ with two closed triangles, and its posterior loop with a small triangle or projection on its antero-external side, the re-entrant folds are two on each side. In lower cheek teeth, M/2 and M/3 are normal; M/1 with three closed triangles in front of which the fourth and fifth triangles are confluent; pitomyan rhombus non-inclined; anterior loop open and pinched from the rest of paraconid as mentioned by Golenishchev and Sablina, 1991 (Fig. 2).

In those adult specimens of Ghazan which were examined, the mean (\pm SD) length of head and body is 97 ± 7.62 mm; tail length, 24.17 ± 2.14 mm; ear length, 10.30 ± 1.60 mm and hind foot length, 16.20 ± 1.48 . External measurements (in mm) for Nehel specimen are as follows: head and body length, 114.8; tail length, 26.2; ear length, 7.1 and hind foot length, 18.0. These and the cranial measurements, shown in table 1, indicate that the specimen of Nehel is relatively larger than

TABLE 1. – Skull measurements of *Blanfordimys afghanus* (in mm) for eight adult specimens from Ghazan in Tandoureh National Park (Mean \pm SD), and the single specimen of Nehel, Zoshk. IOW- interorbital width; APFL- anterior palatine foramen length; UTRL- upper tooth row length; DL- diastema length ; LTRL- lower tooth row length; TBL- tympanic bulla length; CbL- condylobasal length; CW- cranium width; NL- nasal length; ZW- zygomatic width.

	IOW	APFL	UTRL	DL	LTRL	TBL	CbL	CW	NL	ZW
Ghazan	4.12 \pm 0.17	4.73 \pm 0.29	6.26 \pm 0.13	8.98 \pm 0.41	6.11 \pm 0.36	9.61 \pm 0.25	26.93 \pm 0.55	14.15 \pm 0.49	7.10 \pm 0.24	16.53 \pm 0.17
Nehel	4.40	4.70	6.30	9.95	6.50	10.10	28.80	15.25	7.55	17.80

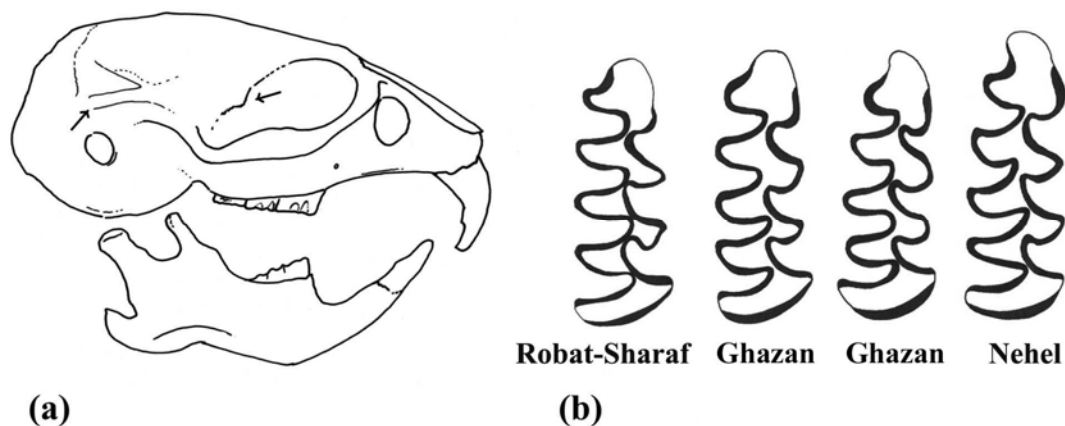


FIG. 2. – a) Skull and mandible of the Afghan vole of Iran in lateral view (see the text for more information). b) Variation of the first lower molar in Afghan voles of Iran.

Tandoureh specimens, though more specimens are needed for a better judgment. All the measurements were taken by vernier caliper accurate to the nearest 0.05 mm.

This species represents a patchy distribution and exists in alpine steppes and highlands of Binaloud and Kopet-dag Mountains. The vegetation is grasslands and the climate is temperate, with pluvial and snowy conditions in winter and relatively high humidity in most of the year.

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