

## Barbastelle, *Barbastella barbastellus*, in the Western Caucasus

Die Mopsfledermaus, *Barbastella barbastellus*, im westlichen Kaukasus

Barbastelle, *Barbastella barbastellus*, dans l'ouest du Caucase

By SUREN GAZARYAN, MOSCOW

### Abstract

*Barbastella barbastellus* has been considered rare throughout the Caucasus where it is at its most south-east distributional limit. However, my data obtained in winter 1997/1998 in the Western Caucasus show that this species is not rare at all there. In total, 101 Barbastelles have been found in 11 caves. Concerning both occurrence (19.5% of all findings) and relative abundance (2% of all specimens), it takes the fourth place among 9 bat species I met in underground hibernacula.

### Zusammenfassung

Es wird angenommen, daß *Barbastella barbastellus* überall im Kaukasus selten ist, wohingegen die Art an der südöstlichen Verbreitungsgrenze häufiger vorkommt. Jedoch, meine im Winter 1997/1998 erworbenen Daten zeigen, daß die Art im Kaukasus nicht überall selten ist. Insgesamt wurden 101 Mopsfledermäuse in 11 Höhlen gefunden. Hinsichtlich des gesamten Vorkommens (19,5 % aller Funde) und der relativen Menge (2 % der Exemplare) nimmt die Art den vierten Platz unter 9 Fledermausarten, die ich in den unterirdischen Winterquartieren angetroffen habe, ein.

### Résumé

On considère que la Barbastelle est partout rare au Caucase, tandis que la plupart des observations proviennent de la limite sud-ouest de l'aire de répartition. Cependant, mes données récoltées au Caucase pendant l'hiver 1997/98 montrent que cette espèce n'est pas rare partout. En tout, 101 Barbastelles ont été découvertes dans 11 grottes. L'espèce occupe la quatrième place parmi les 9 espèces de chauves-souris répertoriées dans les gîtes, respectivement pour le nombre d'observations (19.5% de toutes les observations) et la quantité relative (2% des individus).

*Barbastella barbastellus* has been considered rare throughout the Caucasus (RAKHMATULINA

1996) where it reaches the south-eastern extent of its range. Up to now no maternity group has been found anywhere in the Caucasus, and even single specimens were caught in summer quite by chance. Winter findings have been strongly predominating over summer ones; however, one or two individuals were usually observed in a hibernaculum.

It was in the Western Caucasus that the higher number of individuals was encountered simultaneously: a count of 13 barbastes was made in the Azish cave (No. 2, here and thereafter see Fig. 1) on 5 January 1974 (DUVAROVA 1980). Other properly documented winter records in this region refer to the Khadjokh cave (No. 1, a male and a female, February of 1972) (YARMYSH & KAZAKOV 1977), the caves Oziornaya (No. 3, a female, January of 1974) and Svetlaya (No. 4, a male and a female, February of 1975) (DUVAROVA 1980).

In attempt to evaluate distribution and current faunal status of *B. barbastellus* in the Western Caucasus, I inspected 21 caves in total, including the above-mentioned ones, during 1997 and 1998 the localities were chosen in such a way to cover all the main karstic areas known for the region.

Like other investigators, I failed to find out the species under study at underground sites during the summer season of both years. I could not meet it at the beginning of 1997 either. In winter 1997/1998, however, Barbastelles were discovered in 11 caves (No. 5-15). Two of the most western of them, the Bogatyrsk and Fanagory caves (No. 5 and 6), are about 100 km distant from the nearest localities of *B. barbastellus* previously reported for the Western Caucasus.

From 1 to 44 Barbastelles were hibernating in different caves, and I counted 101 individuals

altogether (Table 1). There were nearly half as many females as males among the individuals examined.

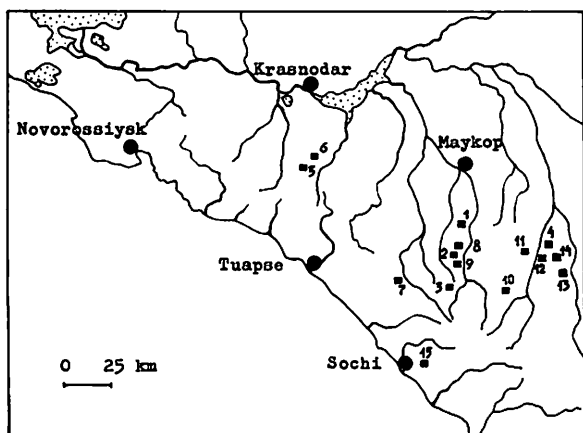


Fig. 1. Distribution of *Barbastella barbastellus* in the Western Caucasus as indicated by findings in the seventies (caves No. 1-4) and in winter of 1997/1998 (caves No. 5-15)

Abb. 1. Verbreitung von *Barbastella barbastellus* im westlichen Kaukasus, wiedergegeben nach den Entdeckungen in den 1970er Jahren (Höhlen Nr. 1-4) und im Winter 1997/1998 (Höhlen Nr. 5-15)

Graph. 1. Répartition de *B. barbastellus* dans l'ouest du Caucase présentée d'après les données des années septante (grottes 1-4) et de l'hiver 1997/98 (grottes 5-15)

no. of a cave	Altitude m a.s.l.	Date	individuals counted	individuals examined	
				males	females
5	280	22.12.97	2	0	2
6	350	23.12.97	1	1	0
7	900	16.02.98	28	-	-
8	1400	01.01.98	1	1	0
9	1550	02.01.98	3	1	2
10	1300	06.03.98	1	0	1
11	400	06.02.98	4	2	2
12	300	01.02.98	44	16	2
13	350	03.02.98	1	0	1
14	1200	05.02.98	3	1	2
15	600	25.01.98	13	-	-
Total			101	22	12

Table 1. Numbers of hibernating *Barbastelles* in some caves of the Western Caucasus

Tabelle 1. Anzahl der überwinternden Mopsfledermäuse in einigen Höhlen des westlichen Kaukasus

Tableau 1. Nombre de *Barbastelles* hibernant dans quelques grottes de l'ouest du Caucase

The largest colonies occupied two caves of different kind. The Gunkina-1 cave (No. 12) is a typical gypsum cave about 100 m long, with many narrow horizontal cracks. Two of them served as shelters for groups of 17 and 20 torpid

*Barbastelles*. Seven additional individuals (all males) were hanging free and separately, despite draught. There were 44 *Barbastelles* overall and no individuals of other bat species in this hibernaculum. A big limestone cave named Canyon (No. 7, more than 1000 m long) with its rather smooth walls contained, along with several large clusters of *Miniopterus schreibersi*, 28 torpid *Barbastelles*. They were hanging singly from the ceiling, mostly within 40 m of the cave entrance.

Guano piles were huge in the Canyon cave and abounded in subfossil remnants of long-winged bats and *Barbastelles*, which indicates that this hibernaculum has been used by bats of both species for a long time. In addition to bone remnants, dozens of dead bats, mainly *Barbastelles*, lay about there. Concentration of *Barbastelle* corpses near the mouth of the cave suggests that the bats could freeze to death. Indeed, ambient temperature dropped in the Western Caucasus to an unusual low mark in December 1997 (about -30°C).

*Barbastelles* shared the remaining winter quarters with other bats, but did not mix with them. The only case of intimate neighbourhood was noticed in Bogatyrsk cave (No. 5), where a male of *Plecotus auritus* was wedged between two female *Barbastelles*.

As compared with 8 other species I met in winter, *B. barbastellus* occurred less frequently (19.5% of all findings) than *Rhinolophus ferrumequinum*, *R. hipposideros* and *Myotis blythii*, but more frequently than *Miniopterus schreibersi*, *Plecotus auritus*, *Myotis daubentonii*, *M. mystacinus* and *M. bechsteinii*. As concerns its relative abundance (2% of all specimens), it took the forth place among hibernating bats after numerous *M. schreibersi* (more than 90% of all specimens) and very common *R. ferrumequinum* and *M. blythii*. Thus, *B. barbastellus* is not rare at all in the Western Caucasus.

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**Literature**

DUVAROVA, A. S. (1980): On hibernating bats of Krasnodar territory. – In: Bats (*Chiroptera*), eds. KUZYAKIN, A. P. & K. K. PANYUTIN, Nauka, Moscow, 70-71 [in Russian].

RAKHMATULINA, I. K. (1996): The bat fauna of the Caucasus and problems of its study. – *Myotis* 34: 51-57.

YARMYSH, N. N. & B. A. KAZAKOV (1977): Records of rare bats in the Precaucasus. – In: Rare species of mammals and

their protection. Materials of the 2nd All-Union Meeting, ed. SOKOLOV, V. E., Nauka, Moscow, 67-68 [in Russian].

**Authors' address:**

S.V. GAZARYAN

Severtsov Institute of Ecology and Evolution

Russian Academy of Sciences

Leninsky prospect 33, Moscow 117071

RUSSIA