

Distribution and present status of *Barbastella barbastellus* (Schreber, 1774) in Bulgaria

Verbreitung und aktuelle Bestandssituation von *Barbastella barbastellus* (Schreber, 1774) in Bulgarien

Distribution et statut actuel de *Barbastella barbastellus* (Schreber, 1774) en Bulgarie

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Abstract

The distribution of *Barbastella barbastellus* on the territory of Bulgaria is represented using UTM grid 10 x 10 km. Only five records have been known up to 1990. During the last years, the species has been recorded from four new localities. Most of the localities are situated in karstic areas in humid forest regions with altitudes from 150 to 1500 m.

Zusammenfassung

Die Verbreitung von *Barbastella barbastellus* wird auf einem Meßtischblatt-Netz 10 x 10 km dargestellt. Bis 1990 konnten lediglich fünf Funde verzeichnet werden. Während der letzten Jahre wurde die Art an vier neuen Orten nachgewiesen. Die meisten Fundorte liegen in Karstgebieten und feuchten Waldgebieten in Höhenlagen zwischen 150 und 1500 m NN.

Résumé

La répartition de la Barbastelle sur le territoire de la Bulgarie est représenté en utilisant une grille de 10 x 10 km. Seulement 5 mentions étaient connues jusqu'en 1990. Pendant les dernières années, l'espèce a été trouvée en 4 nouvelles localités. La plupart des localités se situent dans les forêts humides des régions karstiques entre 150 et 1500 m d'altitude.

Key words: *Barbastella barbastellus*. distribution, external measurements, Bulgaria

Introduction

The Barbastelle is considered as one of the rarest bat species in Bulgaria. Due to the intense bat investigations in the last years, many new localities and roosts of rare species (including the Barbastelle) were found, but there are still very poorly studied regions. The lack of more detailed knowledge on the ecological require-

ments of the Barbastelle as well as of the other synanthropic and tree-dwelling bat species makes the estimation of their status on the territory of the country very difficult.

The present work aims to summarize all available data concerning *B. barbastellus* in Bulgaria reported in the literature and collected during the last years as result of field studies (winter census and mist-netting). The distribution is presented using UTM grid (10 x 10 km). Measurements of some external features were taken (Table 2).

Results and Discussion

Nine localities of *Barbastella barbastellus* are recorded up to now on the territory of the country (Fig. 1):

1. Kamtchija river valley, East Bulgaria, NH46: 150 m a.s.l., riparian forest (HEINRICH 1936);
2. Kumanitza cave, v. Tcherni osam, Stara Planina Mountain, LH14: 1300 m a.s.l., beech forest (BESHKOV & BERON 1962);
3. Lepenitzacave, v. Velingrad, Rhodopi mountain, GM45: 1500 m a.s.l., mixed beech and pine forest (BESHKOV & BERON 1962);
4. Lednitsa cave, v. Gela, Rhodopi mountain, KG91: 1540 m a.s.l., karstic area in forest of *Picea abies* (HORÁČEK et al. 1974);
5. Cave, v. Karlukovo, KH68: 350 m a.s.l., karstic area in degraded oak-hornbeam forest (HORÁČEK 1982);
6. Toplja cave, v. Goljama Zeljazna, Vasiljovska mountain, KH96: 450 m a.s.l., beech forest (PANDURSKA 1994, confirmed by T. IVANOVA);
7. Metchata dupkacave, v. Bov, West Stara Planina, FN96: 1000 m a.s.l., karstic area in beech forest (BERON 1994);

N Loc	Date	n/ sex/age	method	T° C	hour of netting	other bat species found in the same locality
1	16-19.06.1935 2.07.1935	3 fem, ad (2 pregnant)	captured	-	-	<i>Pipistrellus sp.</i>
2	28.06.1960	1 ind.	subfossil	-	-	-
3	17.12.1961	1 ind.	observed	-	-	<i>Rh. hipposideros, M. myotis</i>
4	31.07.1971	1m, subad	netted	-	23-24h	-
5	-	-	subfossil	-	-	-
6	19.01.1992	1 m, ad	observed	8.0	-	<i>5 Rh. ferrumequinum</i>
6	2.02.1997	1 m, ad	observed	4.4	-	<i>5 Rh. ferrumequinum, 2 Rh. hipposideros, M. myotis/blythii, 1 M. bechsteinii, 1 M. emarginatus, 1 P. pipistrellus</i>
7	30.01.1994	1 m, ad	observed	-	-	<i>Rh. hipposideros</i>
8	12.10.1996	1 m, ad 1 m, ad	netted netted	10.6	21.35 h 04 .55 h	<i>2 Rh. ferrumequinum, 4 M. myotis, 1 Plecotus austriacus, 1 M. schreibersii</i>
8	26.10.1997	1 m, ad	netted	10.6	21.20 h	<i>5 Rh. ferrumequinum, 7 R. hipposideros, 1 Plecotus sp., 1 M. nattereri</i>
9	21.05.1997	1 m, ad	netted	10.0	22.53 h	<i>5 Rh. ferrumequinum, 10 Rh. euryale, 1 M. myotis, 2 P. austriacus, 3 E. serotinus, 2 H. savii</i>

Table 1. A general outline of the records of *Barbastella barbastellus* from BulgariaTab. 1. Allgemeiner Überblick zur Verbreitung von *Barbastella barbastellus* in BulgarienTableau 1. Une esquisse générale des observations de la *Barbastella barbastellus* en Bulgarie

8. Artificial mine, v. Gorna Bjala Rechka, Vratschanska mountain, FN98: 670 m a.s.l., karstic valley in beech forest (R. PANDURSKA);
9. Kozarnikacave, v. Lipnitsa, WestPredbalkan, GN26: 700 m a.s.l., karstic valley in beech and mixed forest (R. PANDURSKA);

A general outline of the records appears in Table 1. The first record of *Barbastella barbastellus* (Schreber, 1774) from Bulgaria was reported by HEINRICH (1936). This remains the only record which confirms the breeding of the species on the territory of the country.

LOCALITY	8	8	8	9
DATE	12. 10. 1996	12. 10. 1996	26. 10.1996	21. 05. 1997
SEX/AGE	M/ad	M/ad	M/ad	M/ad
L	45. 00	50. 00	43. 00	47. 00
C	44. 00	42. 00	45. 00	39. 00
A	13. 00	14. 00	15. 00	14. 50
LFM	39. 00	38. 80	38. 50	38. 50
LD3	72. 00	71. 00	69. 00	70. 00
LD5	58. 00	54. 00	52. 00	52. 00
WS	280. 00	280. 00	274. 00	275. 00
W(g)	9.00	8. 00	6. 50	8. 00

Table 2. External morphological measurements of some mist-netted individuals of *B. barbastellus*: L (head and body length), C (length of tail), A (length of ear), LFM (forearm length), LD3 and LD5 (lengths of third and fifth digits), WS (wing span in mm), W (weight in g); M = male

Tab. 2. Äußerliche morphologische Maße einiger im Netz gefangener Mopsfledermaus-Exemplare: L (Kopfrumpflänge), C (Schwanzlänge), A (Ohrlänge), LFM (Unterarmlänge), LD3 und LD5 (Länge 3. und 5. Finger), WS (Spannweite der Flügel in mm), W (Gewicht in g); M = Männchen

Tableau 2. Cotes externes de quelques *Barbastelles* capturées au filet: L (tête et longueur du corps), C (longueur de la queue), A (longueur de l'oreille), LFM (longueur de l'avant-bras), LD3 et LD5 (longueur du troisième et du cinquième doigt), WS (envergure en mm), W (poids en g), M = mâle

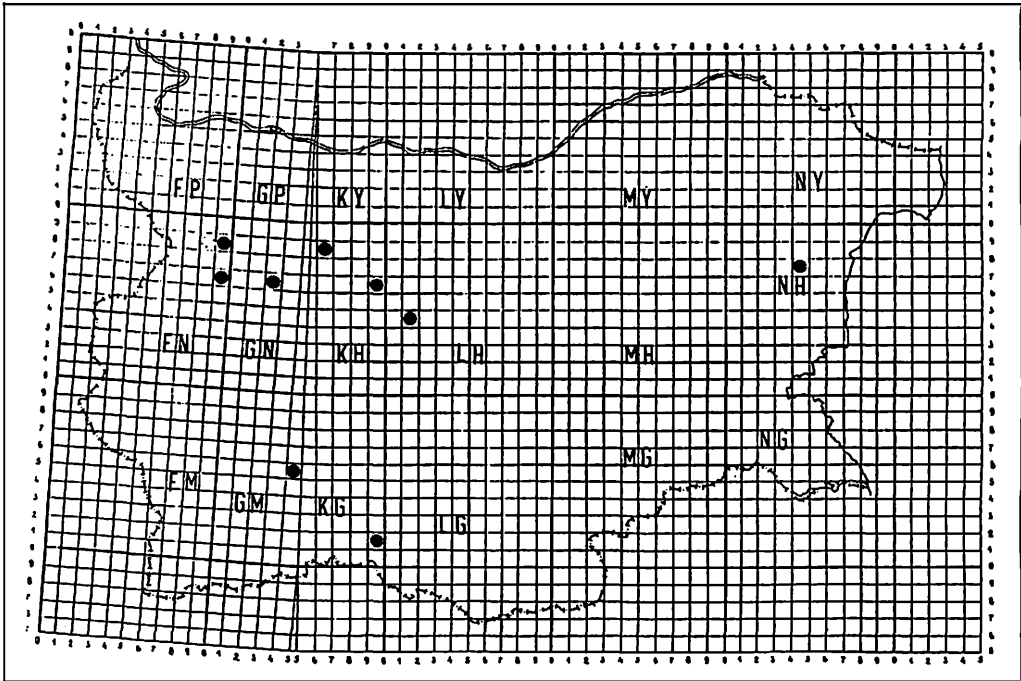


Fig. 1. *Barbastella barbastellus* records in Bulgaria

Karte 1. *Barbastella barbastellus*-Nachweise in Bulgarien

Carte 1. Mentions de la *Barbastella barbastellus* en Bulgarie

All other records concern subfossil material (2, 5), or single males found hibernating in caves (3, 6, 7) or mist-netted at cave entrances in the transitory periods (4, 8, 9).

The temperature of the roosts near the single hibernating individuals ranged between 0° and 8° C. The temperature of the transient roosts were 10-11° C.

The known roosts of *Barbastelle* are within altitudinal ranges from 150 to 1540 m a.s.l., but obviously the species prefers cool habitats of beech and mixed beech-pine forests.

The mist-netting of males in late summer and autumn (localities N 8, 9, Tables 1) is probably related with seasonal transient movements. The artificial gallery (loc. N 8) is hibernaculum of some common cave-dwelling bat species (*Rh. ferrumequinum*, *Rh. hipposideros*, *M. myotis/blythii*, *Plecotus austriacus*), but the *Barbastelle* was never observed there during the winter months. The few data concerning night activity show that the species is active almost during the whole night (Table 1).

The habitat preferences of the *Barbastelle*

(underground roosts such as caves and artificial mines in humid riparian, beech or mixed forests) in Bulgaria are very close to those described for Central Europe (SPITZENBERGER 1993, JARZEMBOWSKI et al. 1994).

The scarce information does not allow us to do general conclusions, other than that more detailed studies are needed.

Acknowledgements

The present paper was prepared thanks to the financial support of The Bulgarian Ministry of Education (Project B-441).

References

- BERON, P. (1994): Résultats des recherches biospéléologiques en Bulgarie de 1971 à 1994 et liste des animaux cavernicoles bulgares. Série Tranteeva I, ed. BFS, Sofia, 137 p.
- BESHKOW, V. & P. BERON (1962): Notizen über die Verbreitung und die Biologie einiger seltener Fledermäuse in Bulgarien. Bull. Inst. Zool., Sofia, 12: 35-39.
- HEINRICH, G. 1936. Über die von mir im Jahre 1935 in Bulgarien gesammelten Säugetiere. Bull. Naturhist. Inst. Zool., Sofia, 9: 33-48.
- HORÁČEK, I. (1982): K poznání glacialních pomerů v krasu severního Bulharska. Cz. kras, Praha, 32: 95-103.

HORÁČEK, I., J. CERVENI, A. TAUSL & D. VITEK (1974): Notes on the Mammal fauna of Bulgaria (*Insectivora*, *Chiroptera*, *Rodentia*). Vest. Cs. spol. zool., Praha, 38 (1): 19-31.

JARZEMBOWSKI, T. & A. OSTRACH (1994): New locality of *Barbastella barbastellus* (Schreber, 1774) in northern Poland. Przegląd zoologiczny, XXXVIII: 3-4

PANDURSKA, R. (1994): Distribution and biology (foraging, hibernation, reproduction) of cave-dwelling bats (*Chiroptera*) in Bulgaria. PH.D. thesis, Sofia, 174 p. (unpubl.).

SPITZENBERGER, F. (1993): Die Mopsfledermaus (*Barbastella barbastellus* Schreber, 1774) in Österreich. Mammalia Austriaca 20. Myotis, Bonn, 31: 111-153.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Nyctalus – Internationale Fledermaus-Fachzeitschrift](#)

Jahr/Year: 2002

Band/Volume: [NF_8](#)

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Artikel/Article: [Distribution and present status of *Barbastella barbastellus* \(Schreber, 1774\) in Bulgaria 626-629](#)