

Bats of the Čerchovský les Mts. and the first record of the Greater horseshoe bat (*Rhinolophus ferrumequinum*) in western Bohemia (Czech Republic) (Chiroptera)

Netopýři Čerchovského lesa a první nález vrápence velkého (*Rhinolophus ferrumequinum*) v západních Čechách (Chiroptera)

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Abstract. The study summarises results of bat survey in the southern part of the Český les Mts. in the period 2004–2006. The following 17 species of bats (73.9% of bat fauna of the Czech Republic) have been confirmed to occur in the study area: *Rhinolophus ferrumequinum*, *Myotis mystacinus*, *M. brandtii*, *M. bechsteinii*, *M. nattereri*, *M. myotis*, *M. daubentonii*, *Vespertilio murinus*, *Eptesicus serotinus*, *E. nilssonii*, *Pipistrellus pipistrellus* s. l., *P. nathusii*, *Nyctalus noctula*, *N. leisleri*, *Barbastella barbastellus*, *Plecotus auritus*, and *P. austriacus*. Five species were recorded there for the first time: *R. ferrumequinum*, *E. serotinus*, *P. nathusii*, *N. noctula* and *N. leisleri*. Numerous records of the “forest species”: *M. bechsteinii*, *V. murinus*, *E. nilssonii*, *P. nathusii*, *N. leisleri*, and *B. barbastellus* are of particular importance. Since the record of *R. ferrumequinum* in the study area represents the only second record of this species in Bohemia and the seventh record in the Czech Republic after 1950, it seems to be of high importance.

INTRODUCTION

Although western Bohemia has been subjected to a considerable chiropterological survey (e.g., HŮRKA 1973, 1986, 1989, BUFKA et al. 2001, DVOŘÁK et al. 2003), the Český les Mts. have been rather neglected. The comparison with the situation in the neighbouring Šumava Mts., which ranks among the best chiropterologically studied regions in the Czech Republic (ANDĚRA & ČERVENÝ 1994), is particularly striking. The reasons may be not only in the absence of easily controllable winter roosts and in difficult detectability of bats in forest habitats, but especially in very constrained opportunities for zoological research in this area at times, when chiropterology was flourishing in the then Czechoslovak Socialist Republic. Till 1989 much of this geomorphologically very narrow and relatively long stripe at the Czech-German border was closed for political and military regions. As a result, only 12 bat species, representing just 52.2% of the currently known Czech bat fauna were recorded there. However, neither the bordering area of

the Oberpfälzer Wald in Bavaria has been satisfactorily studied from the given point of view (MESCHÉDE & RUDOLPH 2004).

Regarding these facts we decided to focus on subsequent complementation of our knowledge on the bat occurrence in a broader region of the Český les Mts. In this paper we present results of the bat survey in the southern part of the region, namely in the Čerchovský les Mts.

STUDY AREA

The studied area of the Čerchovský les Mts. (Fig. 1) encompasses the whole southern third of the Český Les Protected Landscape Area, with the total area of about 250 km², and is delimited by the state border and the Oberpfälzer Wald in the west and south, by Kateřinská kotlina (a basin) and Přimský les Mts in the north, by Chodská pahorkatina (hills) and Českokubická vrchovina (highlands) in the east. The area is characterized by several elongated mountain ridges, separated by deep valleys. It is composed of three highlands: Haltravská hornatina, Nemanická vrchovina, and Ostrovská vrchovina. The highest point is Mt. Čerchov (1042 m a. s. l.), the average altitude of the area being 633.8 m a. s. l. The climate is mostly mild warm, above 700 m a. s. l. cold. The average annual temperature ranges – according to the altitude – from 8 to 4.5 °C, annual precipitation from 700 to 1000 mm.

Most of the area (almost 80%) is covered by submontane or montane forests, with prevailing beech, e.g. acidophilous beechwood and fir-beechwood like *Luzulo-Fagion* or *Eu-Fagetion*, locally watered firs (*Equiseto-Abietetum*) and locally limited also watered spruces (*Mastigobryo-Piceetum*). Currently, secondary spruce monocultures prevail, yet still many mixed forests (spruce, beech, and fir, with intermixed ash, maple and sycamore), are preserved. The proportion of beech in the whole region makes up about 15%, in the southern part of Čerchovský les, and in the very region of Čerchov Mt. almost 50%. The average age of the forests is about 70 years, except for the area of Čerchov where more than 50% of trees are 111–180 years old.

REMARK. The locality 'Černá Řeka' (gallery) in this study is identical with the locality name 'Jindřichova Hora' used by L. HŮRKA in his papers.

METHODS

During the period 2004–2006, bats were mainly observed in their summer and winter roosts. Bats were also caught using mistnets along their flight corridors in the forest or above water.

The distribution of each bat species is given using the standard grid map (KFME system), as usual in faunistic surveys (ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001). The individual findings are specified as follows: square number, site name, altitude, date of finding, and habitat or shelter. For each species, the complete list of localities arranged alphabetically in particular squares is given.

ABBREVIATIONS. M – male, F – female, F gr – gravid female, F lact – lactating female, ex. – individual(s), s.i. – sex indetermined, S – summer record (15 April – 15 October), W – winter record (16 October – 14 April).

RECORDS AND DISCUSSION

Greater horseshoe bat, *Rhinolophus ferrumequinum* (Schreber, 1774)

6542: Černá Řeka (560 m a. s. l.), 4 December 2006, gallery, 2 M.

REMARKS. The finding of this bat species represents the first record of its occurrence in the study area, but mainly the second record in Bohemia and seventh record in the whole Czech Republic after 1950. At the same time, it represents the highest situated locality of its occurrence in the country. From the Czech Republic, there have been so far only few less reliable

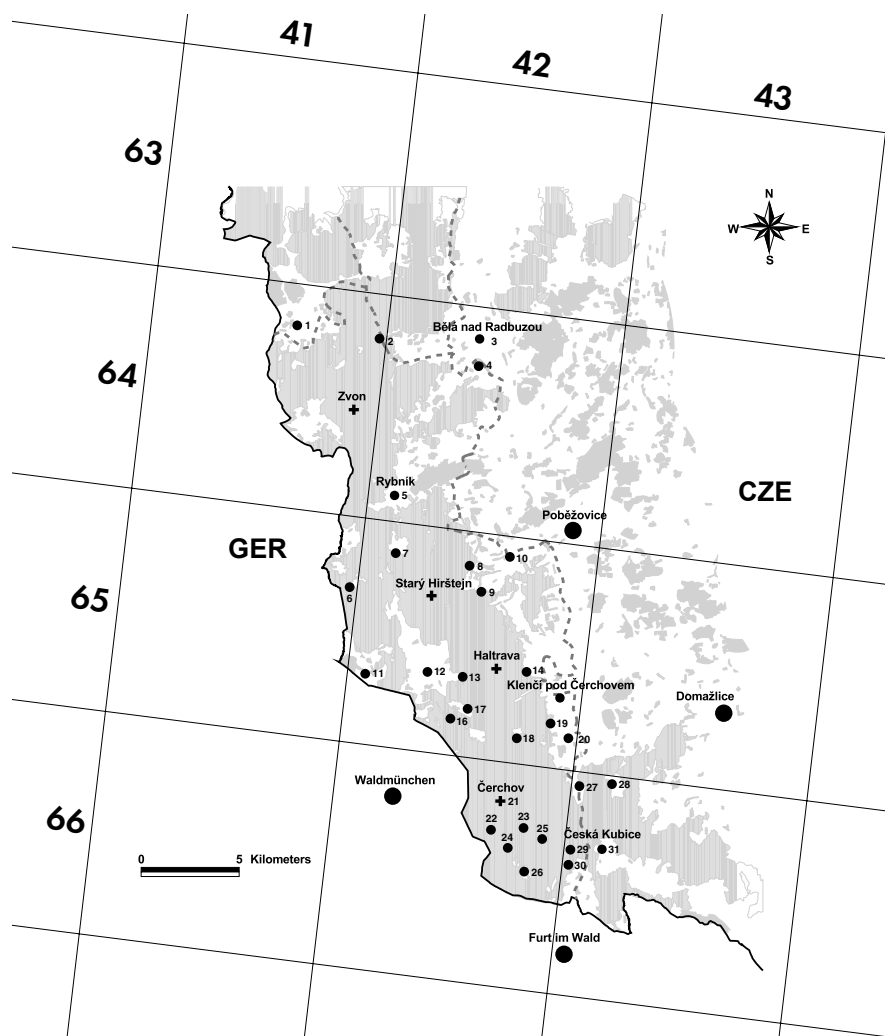


Fig. 1. Schematic map of the study area (grey – forested area; dashed line – border of the area under study; bigger closed circle – important settlement; smaller closed circle – locality under study; cross – important hill).

Obr.1. Schematická mapa sledované oblasti (šedé pozadí – lesnatá oblast, přerušovaná linie – hranice Čerchovského lesa, větší plný kruh – důležité sídlo, menší plný kruh – sledovaná lokalita; křížek – důležitý vrchol).

Sites / lokality: 1 – Železná, 2 – Smolov, 3 – Bělá nad Radbuzou, 4 – Újezd u Svatého Kříže, 5 – Rybník, 6 – Hraničná, 7 – Závist, 8 – Pivoň, 9 – Vranov, 10 – Mnichov, 11 – Lučina, 12 – Nemanice, 13 – Stará Huť, 14 – Díly, 15 – Klenčí pod Čerchov, 16 – Černá Řeka, 17 – Jindřichova Hora, 18 – Capartice, 19 – Výhledy, 20 – Chodov, 21 – Čerchov Mt., 22 – Čerchov, Hánovka (Fig. 2), 23 – Čerchov, Na zlomu, 24 – Čerchov, Zámeček, 25 – Čerchov, Rajská, 26 – Bystřice (Fig. 3), 27 – Pec, 28 – Babylon, 29 – Česká Kubice, Zelená chýše, 30 – Česká Kubice, Česká studánka, 31 – Česká Kubice.

data on presence of this species from the 19th and beginning of the 20th centuries; after 1950 singular occurrence is known only from six hibernating sites (HANÁK & ANDĚRA 2005). The last finding originates from the Moravian Karst in 1979 (GAISLER 1997). From Bohemia, so far only one record has been published, namely from the Mořina mine near Karlštejn in 1962 (HANÁK 1962). In the neighbouring parts of Bavaria, approximately 80 km from the presented locality, in the Danube valley (between Ingolstadt and Regensburg), a stable population of this species occurs and local transitions are known there (MESCHÉDE & RUDOLPH 2004). The size of the Bavarian population has been found to grow (S. MORGENROTH ad verb.) and hence, it is well possible that the record described here represents a winter excursion. The ability of long distance wandering in this species has been evidenced out of the Czech Republic by means of ringing (GAISLER et al. 2003).

Whiskered bat, *Myotis mystacinus* (Kuhl, 1817)

6442: Bělá nad Radbuzou (480 m a. s. l.), 18 May 2006, shutter of a hut, 2 M; **Rybník** (530 m a. s. l.), 17 May 2006, shutter of a cottage, 1 M; 3 October 2006, shutter of a cottage, 2 M; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 4 ex. s.i.; **Jindřichova Hora** (670 m a. s. l.), 3 October 2006, shutter of a cottage, 1 F M; **Stará Huť u Nemanic** (560 m a. s. l.), 22 June 2005, shutter of a hut, 3 M; 12 August 2005, shutter of a hut, 1 M; **6642: Čerchov – Na zlomu** (875 m a. s. l.), 17 May 2006, wooden panelling of a hut, 1 M; **6643: Babylon – Černý rybník** (470 m a. s. l.), 7 May 2006, netting above a stream near the fishpond, 2 M.

PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1979–2002 (HŮRKA 1986, BUŤKA et al. 2001, DVOŘÁK et al. 2003); **Díly** (600 m a. s. l.), loft of a barn, S, 1968 (HŮRKA 1973); **6642: Čerchov**, 1932 (GAISLER 1956).

REMARKS. The whiskered bat was found at nine summer localities (470–875 m a. s. l.) in the study area. Summer records are often related to human residences at forest edges or close to water bodies, like in the Šumava Mts. (ANDĚRA & ČERVENÝ 1994). No breeding colony has been found so far. Individual bats were recorded to occupy different fissures of buildings, mainly behind window shutters. The only regular winter roost is in the gallery near Černá Řeka (560 m a. s. l.). Another record of this species is known from the nearby region – the locality Diana (KŮS 1999). The species is considered to be common in western Bohemia (HŮRKA 1989, BUŤKA et al. 2001).

Brandt's bat, *Myotis brandtii* (Eversmann, 1845)

6442: Rybník (525 m a. s. l.), 17 May 2006, netting above the Radbuza river, 1 M; **6542: Stará Huť u Nemanic** (560 m a. s. l.), 22 June 2005, shutter of a hut, 1 M.

PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 2002–2003 (DVOŘÁK et al. 2003).

REMARKS. Two records of the Brandt's bat represent the first summer occurrence (525 and 560 m a. s. l.) of this species in the study area. The only winter roost is known in the gallery near Černá Řeka (560 m a. s. l.). Habitats occupied by this species are often identical with those of *M. mystacinus*. Infrequent records indicate rare occurrence not only in the area under study, but also in western Bohemia in general (HŮRKA 1989, ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001), as well as in the whole Czech Republic (HANÁK & ANDĚRA 2006).

Bechstein's bat, *Myotis bechsteinii* (Kuhl, 1917)

6442: Rybník (525 m a. s. l.), 17 May 2006, netting above the Radbuza river, 1 M; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 5 ex. s.i.; 6 February 2006, 1 ex. s.i., 4 December 2006, 2 ex. s.i.; **6642: Bystřice** (535 m a. s. l.), 11 August 2005, netting above a small fishpond in the forest near an abandoned village, 1 M; **Čerchov – Zámeček** (670 m a. s. l.), 23 June 2005, netting near a small fishpond in the forest, 1 M; **6643: Česká Kubice – Zelená chýše** (642 m a. s. l.), 4 July 2005, netting in the forest, 1 M. PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1971–2003 (HŮRKA 1973, BUŤKA et al. 2001, DVOŘÁK et al. 2003).

REMARKS. Four records of the Bechstein's bat represent the first summer occurrence of this species in the study area. A low number of records reflects difficult detectability of this species, rather than its relative rarity (as discussed in HŮRKA 1989, ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001, HANÁK & ANDĚRA 2006). The records come from middle altitudes (525–670 m a. s. l.), always from habitats with the presence of deciduous forests, mainly beech, or mixed forests. The only regular winter roost is in the gallery near Černá Řeka (560 m a. s. l.). Another record of this species is known from the nearby region – the locality Přimda (KŮS 1999). The species is considered to be rare in western Bohemia (HŮRKA 1989, BUŤKA et al. 2001).

Natterer's bat, *Myotis nattereri* (Kuhl, 1817)

6442: Rybník (530 m a. s. l.), 17 May 2006, shutter of a cottage, 1 M; **6542: Capartice** (760 m a. s. l.), 12 August 2005, shutter of a cottage, 1 M; **Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 5 ex. s.i., 4 December 2006, 1 ex. s.i.; 6 February 2006, 5 ex. s.i.; **6642: Bystřice** (555 m a. s. l.), 11 August 2005, netting in front of the cellar of a school in an abandoned village, 2 M; **Bystřice** (535 m a. s. l.), 11 August 2005, netting above a small fishpond in the forest near an abandoned village, 1 M; **6643: Česká Kubice** (505 m a. s. l.), 13 August 2005, netting above a fishpond, 1 F. PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1974–2003 (HŮRKA 1986, BUŤKA et al. 2001, DVOŘÁK et al. 2003).

REMARKS. The Natterer's bat is typical for lower altitudes with plenty of wetlands (HŮRKA 1973, 1989, ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001, HANÁK & ANDĚRA 2006). Six localities of occurrence (505–760 m a. s. l.) were found in the study area, but only some of them were situated near water. No breeding colony has been found so far. Individual bats were hidden in different fissures of buildings, mainly behind window shutters. The only regular winter roost is known in the gallery near Černá Řeka (560 m a. s. l.). The species is considered to be quite common in western Bohemia (HŮRKA 1989, BUŤKA et al. 2001, HANÁK & ANDĚRA 2006).

Greater mouse-eared bat, *Myotis myotis* (Borkhausen, 1797)

6442: Bělá nad Radbuzou (440 m a. s. l.), 18 May 2006, town square, 1 M dead; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 11 ex. s.i.; 6 February 2006, 18 ex. s.i., 4 December 2006, 12 ex. s.i.; **Pivoň** (590 m a. s. l.), 8 November 2006, basement of the monastery, 2 ex. s.i. PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), loft of a school, S, 1967 (HŮRKA 1973), gallery, W, 1969–1998 (HŮRKA 1973, HŮRKA 1986, BUŤKA et al., 2001), **Pivoň** (590 m a. s. l.), basement of the monastery, W, 1971–2003 (HŮRKA 1973, BUŤKA et al. 2001, DVOŘÁK et al. 2003).

REMARKS. The greater mouse-eared bat is one of the most common species of western Bohemia (HŮRKA 1973, ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001, HANÁK & ANDĚRA 2006), however, this does not apply for the study area. Here it is known mainly from two winter roosts (560 and

590 m a. s. l.). The only two summer records (440 and 560 m a. s. l.) come from the foothills. This species was recorded also in the nearby region – the locality Světce near Tachov (HŮRKA 1988).

Daubenton's bat, *Myotis daubentonii* (Kuhl, 1817)

6442: Bělá nad Radbuzou (485 m a. s. l.), 18 May 2006, netting above a small fishpond, 1 M; **Rybník** (525 m a. s. l.), 17 May 2006, netting above the river Radbuza, 1 F; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 11 ex. s.i.; 3 September 2005, netting in front of a gallery, 1 M; 6 February 2006, 18 ex. s.i., 4 December 2006, 6 ex s.i.; **Lučina-Grafenried** (600 m a. s. l.), 7 November 2006, cellar of a destroyed building, 1 M; **6642: Bystřice** (540 m a. s. l.), 23 June 2005, netting above a small fishpond in the forest, 1 M; **Bystřice** (535 m a. s. l.), 11 August 2005, netting above a small fishpond in the forest near an abandoned village, 1 F; **Bystřice** (545 m a. s. l.), 7 November 2006, the cellar of a building in an abandoned village, 1 ex. s.i.; **6643: Babylon – Černý rybník** (470 m a. s. l.), 7 May 2006, netting above a stream near the fishpond, 2 M, 3 F; **Česká Kubice** (505 m a. s. l.), 13 August 2005, netting above a fishpond, 2 F.

PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1971–2003 (HŮRKA 1973, BUFKA et al. 2001, DVOŘÁK et al. 2003).

REMARKS. A common species, recorded at nine localities (470–600 m a. s. l.). The Daubenton's bat occurs in various habitats, but forages mainly above water, and its distribution is significantly influenced by the presence of various types of water bodies. No breeding colony or summer shelters have been found so far. The only regular winter roost is known in the gallery near Černá Řeka (560 m a. s. l.). The species is also considered to be common in western Bohemia (HŮRKA 1973, 1989, ANDĚRA & ČERVENÝ 1994, BUFKA et al. 2001, HANÁK & ANDĚRA 2006).

Parti-coloured bat, *Vespertilio murinus* Linnaeus, 1758

6441: Smolov (485 m a. s. l.), 18 May 2006, shutter of a hut, 2 M; **6442: Rybník** (530 m a. s. l.), 3 October 2006, shutter of a cottage, 1 M; **6542: Stará Hut' u Nemanic** (560 m a. s. l.), 12 August 2005, shutter of a hut, 1 M; 3 September 2005, 2 M; **6642: Bystřice – třešňovka** (540 m a. s. l.), 9 November 2006, wooden hunting lookout, 1 M dead; **6643: Pec** (510 m a. s. l.), 11 June 2005, shutter of a cottage, 1 M.

PREVIOUS RECORDS. **6542: Díly** (600 m a. s. l.), room in a building, S, 1967 (HŮRKA 1971a).

REMARKS. The parti-coloured bat was found at six summer localities (485–600 m a. s. l.) in the study area. No breeding or summer male colonies have been found so far, only individual bats hidden in different fissures of buildings (mainly behind window shutters) or fissures in a wooden hunting lookout. This species was formerly considered to be very rare in western Bohemia (HŮRKA 1973, 1989, BUFKA et al. 2001), but it is relatively common in some habitats of the Šumava Mts. (ANDĚRA & ČERVENÝ 1994).

Serotine *Eptesicus serotinus* (Schreber, 1774)

6442: Rybník (530 m a. s. l.), 17 May 2006, loft of a house, 1 M; **6542: Nemanice** (530 m a. s. l.), 23 June 2005, loft of the church, 1 ex. s.i.

REMARKS. Two records of the serotine represent the first occurrence of this species in the study area. Both are situated at rather middle altitudes (530 m a. s. l.), in an open landscape and in human settlements in lofts of houses. The species is common throughout western Bohemia (HŮRKA 1973, BUFKA et al. 2001).

Northern bat, *Eptesicus nilssonii* (Keyserling et Blasius, 1839)

6442: Bělá nad Radbuzou (485 m a. s. l.), 18 May 2006, netting above a small fishpond, 1 F gr; **6542:** Černá Řeka (560 m a. s. l.), 27 January 2004, gallery, 1 ex. s.i.; **Pivoň** (580 m a. s. l.), 8 May 2006, netting above a small fishpond, 1 F; **Stará Hut' u Nemanic** (560 m a. s. l.), 22 June 2005, netting above a small fishpond, 1 F lact.; 6 May 2006, shutter of a hut, 1 M; **Vranov** (650 m a. s. l.), 7 May 2006, loft of a building, breeding colony of approx. 50 ex. (2 F gr were examined); **Závist** (590 m a. s. l.), 7 May 2006, wooden panelling of a building, 1 M; **6642:** 1 M; **Čerchov** (1040 m a. s. l.), 17 May 2006, panelling of a building on the top of the hill, 1 M; **Čerchov – Zámeček** (670 m a. s. l.), 23 June 2005, netting near a small fishpond in the forest, 1 F; **6643:** Pec (520 m a. s. l.), 11 June 2005, loft of the building, breeding colony of approx. 80 ex. (1 F gr was examined).

PREVIOUS RECORDS: **6542:** Černá Řeka (560 m a. s. l.), gallery, W, 1983–2003 (HŮRKA 1986, BUŤKA et al. 2001.); **Díly** (600 m a. s. l.), loft of a dwelling house, breeding colony of 70 ex., S, 1976 (HŮRKA 1986).

REMARKS. The northern bat had been considered to be very rare for a long time, but now it seems to be a relatively common species not only in the study area, but also in the rest of western Bohemia (ANDĚRA & ČERVENÝ 1994, BUŤKA et al. 2001). Moreover, its occurrence was confirmed at 10 localities (485–1040 m a. s. l.), mainly in woodlands. Breeding colonies were found (50–80 individuals) in lofts of dwelling houses or weekend cottages, individual bats were hidden in different fissures of buildings. The only winter roost is in the gallery near Černá Řeka (560 m a. s. l.). Other findings of this species come from the nearby region – the localities Chodovská Hut' (HŮRKA 1973) and Přimda (KŮS 1999). In the neighbouring Oberpfälzer Wald, a breeding colony is also known (MERKEL – WALLNER et al. 1987) and many records were made using bat detectors (SKIBA 1987).

Common pipistrelle, *Pipistrellus pipistrellus* (Schreber, 1774)

6542: Výhledy (680 m a. s. l.), 11 June 2005, 3 October 2006, shutter of a building, 2 M; **6642:** Čerchov-Hánovka (900 m a. s. l.), 29 August 2005, netting in the forest, 1 M, 1 F; **6643:** Pec (510 m a. s. l.), 11 June 2005, shutter of a building, 3 M.

PREVIOUS RECORDS. **6441:** Železná (525 m a. s. l.), loft of the school, S, 1968 (HŮRKA 1973); **6542:** Klenčí pod Čerchovem (495 m a. s. l.), loft of a house, S, 1965 (HŮRKA 1973).

REMARKS. Probably a common species in the study area, its occurrence was confirmed at five localities (495–900 m a. s. l.). Breeding colonies have not yet been found, individual bats were hidden in fissures of buildings. Although several winter roosts are known from the foothills of the Čerchovský les (HŮRKA 1973, BUŤKA et al. 2001), no hibernating bats were recorded in the study area. The species is considered to be relatively common in western Bohemia (HŮRKA 1989, BUŤKA et al. 2001). However, confusion with a very similar species *Pipistrellus pygmeus* is possible.

Nathusius' pipistrelle, *Pipistrellus nathusii* (Keyserling et Blasius, 1839)

6642: Bystřice (535 m a. s. l.), 4 July 2005, netting above a small fishpond in the forest near an abandoned village, 1 F lact; **6643:** Česká Kubice (505 m a. s. l.), 13 August 2005, netting above a fishpond, 1 M; **Česká Kubice – Zelená chýše** (642 m a. s. l.), 4 July 2005, shelter in the roof of a hut, 1 M.

REMARKS. Three findings of the Nathusius' pipistrelle represent the first records of this species in the study area. All are situated at rather middle altitudes (505–642 m a. s. l.) in forested areas near water bodies. The species is widespread in some parts of the Czech Republic (JAHELKOVÁ

et al. 2000), however, this does not apply for western Bohemia where it is very rare (ČERVENÝ & BUFKA 1999, BUFKA et al. 2001).

Noctule, *Nyctalus noctula* (Schreber, 1774)

6542: Pivoň (580 m a. s. l.), 8 May 2006, netting above a small fishpond, 1 F; **6643: Babylon – Černý rybník** (470 m a. s. l.), 7 May 2006, netting above a stream near a fishpond, 1 M.

REMARKS. Two findings of the noctule represent the first record of this species in the study area. The species is quite common at lower altitudes of western Bohemia (HŮRKA 1989, BUFKA et al. 2001). Both our records (470 and 580 m a. s. l.) come from forest habitats with water bodies. Similarly as in the lower Šumava Mts. (ČERVENÝ & BÜRGER 1989), a sympatric occurrence of *N. noctula* and *N. leisleri* was recorded at one locality (Pivoň).

Leisler's bat, *Nyctalus leisleri* (Kuhl 1817)

6442: Rybník (525 m a. s. l.), 17 May 2006, netting above the river Radbuza, 1 F; **6542: Pivoň** (580 m a. s. l.), 8 May 2006, netting above a small fishpond, 1 M, 2 F; **6642: Čerchov-Rajská** (830 m a. s. l.), 13 November 2005, wooden hunting lookout, 2 F; **6643: Česká Kubice – Zelená chýše** (642 m a. s. l.), 4 July 2005, netting in a forest, 1 F lact.

REMARKS. Four captures of the Leisler's bat represent the first record of this species in the study area. The records were made at relatively higher altitudes (525–830 m a. s. l.), always in habitats with deciduous forests, mainly beech, or with mixed forests. Similarly as in the lower Šumava Mts. (ČERVENÝ & BÜRGER 1989), a sympatric occurrence of *N. noctula* and *N. leisleri* was recorded at one locality (Pivoň). This species is considered to be extremely rare in western Bohemia (HŮRKA 1989, BUFKA et al. 2001).

Barbastelle, *Barbastella barbastellus* (Schreber, 1774)

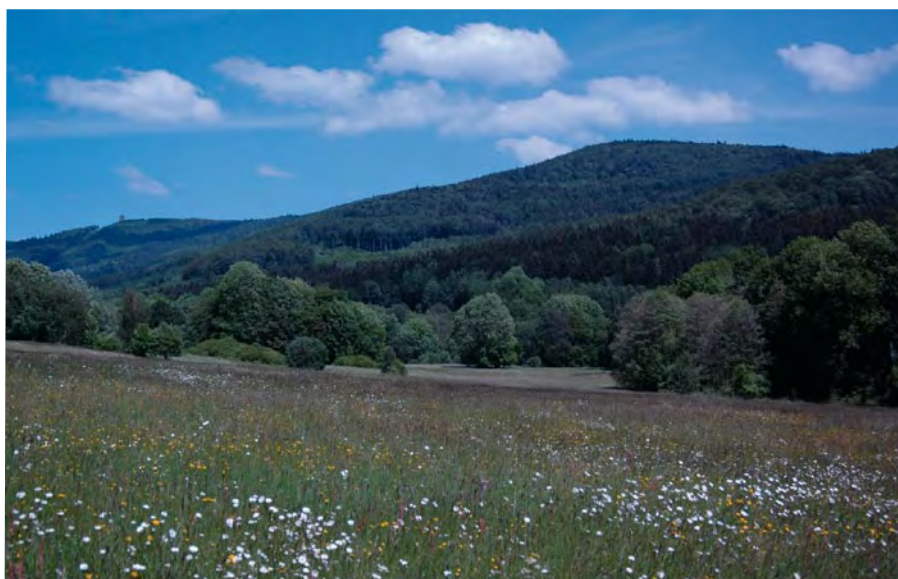
6441: Smolov (485 m a. s. l.), 18 May 2006, shutter of a cottage, 1 M; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 7 ex. s.i.; 6 February 2006, 9 ex. s.i.; **Stará Hut' u Nemanic** (560 m a. s. l.), 6 May 2006, shutter of a cottage, 1 M; **6642: Bystřice** (555 m a. s. l.), 11 August 2005, netting in front of a cellar of the school in an abandoned village, 1 M.

PREVIOUS RECORDS. **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1976–1980 (HŮRKA 1986); **Pivoň**, (590 m a. s. l.), basement of the monastery, W, 1971–1975 (HŮRKA 1973, BUFKA et al. 2001).

REMARKS. The barbastelle was found at three summer localities (485–560 m a. s. l.) in the study area. Summer findings are often related to human residences at forest edges, like in the Šumava Mts. (ANDĚRA & ČERVENÝ 1994). No breeding colony has been found so far. Individual bats were hidden behind window shutters. The only two winter roosts are situated at the altitudes of 560 and 590 m a. s. l. This species is considered to be relatively common in western Bohemia (HŮRKA 1989, ANDĚRA & ČERVENÝ 1994, BUFKA et al. 2001, HANÁK & ANDĚRA 2005).

Brown long-eared bat, *Plecotus auritus* (Linnaeus, 1758)

6442: Bělá nad Radbuzou (450 m a. s. l.), 18 May 2006, shutter of a building, 4 F; **Rybník** (530 m a. s. l.), 23 June 2005, loft of a house, breeding colony of approx. 15 ex.; **6541: Hraničná** (685 m a. s. l.), 8 November 2006, cellar of a building, 2 F; **6542: Černá Řeka** (560 m a. s. l.), 27 January 2004, gallery, 6 ex.



Figs. 2, 3. Sites of bat netting in the Čerchovský les Mts. 2 – Mixed forest on Mount Čerchov, Hánovka (photo by V. Fišr) (above). 3 – Deforested area near the abandoned village Bystřice with Mt. Čerchov in the horizon (photo by J. Červený) (below).

Obr. 2, 3. Lokality nettingu netopýřů v Čerchovském lese. 2 – Smíšený lesní porost na lokalitě Čerchov, Hánovka (foto V. Fišr) (nahore). 3 – Odlesněná oblast u bývalé obce Bystřice s vrcholem Čerchova v pozadí (foto J. Červený) (dole).

s.i.; 3 September 2005, netting in front of a gallery, 1 M; 6 February 2006, gallery, 9 ex. s.i., 4 December 2006, 1 ex. s.i.; **Nemanice** (530 m a. s. l.), 23 June 2005, loft of the church, breeding colony of approx. 8–10 ex.; **Pivoň** (590 m a. s. l.), 8 November 2006, basement under the monastery, 1 F; **Závist** (590 m a. s. l.), 7 May 2006, loft of a cottage, breeding colony of approx. 10 ex.; **6642: Bystrice** (555 m a. s. l.), 11 August 2005, netting in front of a cellar of the school in an abandoned village, 2 M, 1 F; **6642: Bystrice** (545 m a. s. l.), 11 August 2005, netting in front of a cellar of a building in an abandoned village, 1 F; **Bystrice** (535 m a. s. l.), 11 August 2005, netting above a small fishpond in the forest near an abandoned village, 1 F; **Čerchov** (1040 m a. s. l.), 17 May 2006, panelling of a building on the top of the hill, 1 M; **Čerchov – Zámeček** (670 m a. s. l.), 23 June 2005, netting near a small fishpond in the forest, 1 F; **6643: Česká Kubice – Česká Studánka** (650 m a. s. l.), 17 July 2005, bird nestbox in the forest, 8 F.

PREVIOUS RECORDS. **6442: Újezd u Svatého Kříže** (450 m a. s. l.), loft of the church, S, 1971 (HÚRKA 1973); **6542: Černá Řeka** (560 m a. s. l.), gallery, W, 1971–2003 (HÚRKA 1973, BUFGA et al. 2001, DVOŘÁK et al. 2003); **Díly** (600 m a. s. l.), loft of the chapel, S, 1967 (HÚRKA 1971b); **Mnichov** (725 m a. s. l.), loft of the church, S, 1974 (HÚRKA 1986); **Pivoň**, 590 m a. s. l., basement of the monastery, W, 1971–1972 (HÚRKA 1973).

REMARKS. The brown long-eared bat is the most common species in the study area. It was found at 14 summer localities (450–1040 m a. s. l.) and in three winter roosts (560–685 m a. s. l.). Summer findings are often related to the periphery of human settlements in forested areas, like in the Šumava Mts. (ANDĚRA & ČERVENÝ 1994). Breeding colonies (8–15 individuals) were found in lofts of dwelling houses or in a bird nestbox, individual bats were hidden in different fissures of buildings. Other findings of this species are known from the nearby parts of the Český les Mts. – the localities Halže and Chodovská Huť (HÚRKA 1973), Mílov and Přimda (KŮS 1999). This species is considered to be very common in western Bohemia (HÚRKA 1989, ANDĚRA & ČERVENÝ 1994, BUFGA et al. 2001).

Grey long-eared bat, *Plecotus austriacus* (Fischer, 1829)

6542: Pivoň (580 m a. s. l.), 8 May 2006, netting above a small fishpond, 1 M; 8 November 2006, basement of the monastery, 2 M; **Stará Huť u Nemanic** (560 m a. s. l.), 7 November 2006, cellar of a destroyed building, 1 M; **6643: Česká Kubice** (505 m a. s. l.), 13 August 2005, netting above a fishpond, 1 M.

PREVIOUS RECORDS: **6542: Díly** (600 m a. s. l.), loft of the chapel, S, 1967 (HÚRKA 1973), **Chodov** (500 m a. s. l.), loft of the school, S, 1966 (HÚRKA 1971).

REMARKS. The grey long-eared bat was found only at four summer localities (500–600 m a. s. l.) and in two winter roosts (560 and 580 m a. s. l.). Summer findings are situated in an open landscape and in human settlements in lofts of houses. Other records of this species come from the nearby region – the locality Halže (HÚRKA 1973). This species is considered to be very common throughout western Bohemia (HÚRKA 1989, ANDĚRA & ČERVENÝ 1994, BUFGA et al. 2001).

SOUHRN

Práce shrnuje výsledky výzkumu netopýrů Čerchovského lesa, který zaujímá celou jižní třetinu Chráněné krajinné oblasti Český les o rozloze přibližně 250 km² a je vymezen státní hranicí (resp. Oberfälzer Wald) na západě a jihu, Kateřinskou kotlinou a Přimdským lesem na severu, Chodskou pahorkatinou a Českokubickou vrchovinou na východě. Území je charakteristické několika podélnými hřbety oddělenými hlubokými údolím. Skládá se ze tří geomorfologických okrsků: Haltravské hornatiny, Nemanické vrchoviny a Ostrovské vrchoviny. Nejvyšší kótou je Čerchov (1042 m n. m.), střední výška území je 633,8 m n. m. Podnebí je převážně mírně teplé (MT 3), nad 700 m n. m. chladné (CH 7). Průměrná roční teplota se podle nadmořské výšky pohybuje od 8 do 4,5 °C, průměrné roční srážky od 700 do 1000 mm.

Většinu území pokrývají lesy submontánního až montánního stupně, lesnatost území dosahuje hodnoty téměř 80 %. Rekokonstrukčně převládají acidofilní bučiny a jedlobučiny (*Luzulo-Fagion*), podmáčené jedliny (*Equiseto-Abietetum*), místy květnaté bučiny (*Eu-Fagetion*), omezeně podmáčené smrčiny (*Mastigobryo-Piceetum*). V současnosti sice převládají stanoviště sekundárních monokultur smrku, přesto se však zde zachovalo více smíšených porostů (smrk, buk a jedle s vtroušeným jasanem, javorem a klenem), než jinde v České republice. Podíl buku v celé oblasti činí okolo 15 %, v jižní části Čerchovského lesa, a zvláště pak v oblasti samotného Čerchova téměř 50 %. Průměrný věk lesních porostů je přibližně 70 let, v oblasti Čerchova je však více než 50 % ve věku 111–180 let.

V letech 2004–2006 byl ve sledované oblasti potvrzen výskyt 17 druhů netopýrů, což představuje 73,9 % netopýří fauny celé České republiky. Zjištění byli: vrápenec velký (*Rhinolophus ferrumequinum*), netopýr vousatý (*Myotis mystacinus*), netopýr Brandtův (*Myotis brandtii*), netopýr velkouchý (*Myotis bechsteinii*), netopýr řasnatý (*Myotis nattereri*), netopýr velký (*Myotis myotis*), netopýr vodní (*Myotis daubentonii*), netopýr pestrý (*Vespertilio murinus*), netopýr pozdní (*Eptesicus serotinus*), netopýr severní (*Eptesicus nilssonii*), netopýr hvízdavý (*Pipistrellus pipistrellus*), netopýr parkový (*Pipistrellus nathusii*), netopýr rezavý (*Nyctalus noctula*), netopýr stromový (*Nyctalus leisleri*), netopýr černý (*Barbastella barbastellus*), netopýr ušatý (*Plecotus auritus*) a netopýr dlouhouchý (*Plecotus austriacus*). Druhy *R. ferrumequinum*, *E. serotinus*, *P. nathusii*, *N. noctula* a *N. leisleri* byly zjištěny v oblasti poprvé. Nejhodnotnější údaje představují početné nálezy tzv. "lesních druhů": *M. bechsteinii*, *V. murinus*, *E. nilssonii*, *P. nathusii*, *N. leisleri* a *B. barbastellus*, které jsou v České republice obecně považovány za druhy vzácné, řídké, nebo alespoň méně běžné.

Nález *Rh. ferrumequinum* je zcela ojedinělý a zároveň velmi významně přispívá k poznání výskytu tohoto druhu u nás. Je teprve druhým prokázaným výskytem v Čechách a sedmým v celé České republice po roce 1950. Zároveň je svou nadmořskou výškou 560 m naší nejvýše položenou lokaltu výskytu. Nález pravděpodobně představuje zálet (cca 80 km) na zimoviště z nejbližší známé letní populace v údolí Dunaje mezi Ingolstatdem a Regensburgem v sousedním Bavorsku.

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