

The first record of *Rhinolophus ferrumequinum* (Chiroptera: Rhinolophidae) from Poland outside the hibernation period

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Abstract. The northern range of *R. ferrumequinum* reaches the southern boundary of Poland. Evidence for this species north of this border is growing. Until now, all records were derived only from the winter period. The adult female captured in May suggests that the area of Southern Poland can be used by this species outside the hibernation period.

Key words: *Rhinolophus ferrumequinum*, north range, Poland

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The greater horseshoe bat *Rhinolophus ferrumequinum* (SCHREBER, 1774) is the largest representative of European horseshoe bats (Rhinolophidae). This Pontic-Mediterranean species, is widely distributed within the Eurasia, and reaches as far as China and Japan. In Europe it occurs from Portugal to Southern England through south parts of Germany, Austria, the Czech Republic, Slovakia, Southern Poland, Ukraine (Transcarpatia, Crimea) to the Caucas Mountains. In the south it reaches the Balkans and the Mediterranean islands (GAISSLER 2001, SACHANOWICZ & CIECHANOWSKI 2005). In Poland the first record was during the 1960's, when an adult female was captured in Nietoperzowa Cave (Olkuska Upland) on the 16th of December 1962 (HARMATA & WOJTUSIAK 1963). The next finds were in 1992, also during the hibernation period, from Szkieletowa Cave in the Rożnowskie foot hills (MLECZEK 1992) and Wierna Cave in the Częstochowska Uplands (LABOCHA & POSTAWA 1992) (Fig.1).

Until now, Wierna Cave is the northern mostly situated hibernaculum of the greater horseshoe bat confirmed in Poland. Another hibernating individual was found on the 5th of February 2002 in Łokietka Cave (Ojców National Park, Olkuska Upland) (NOWAK et al. 2001), and from that time onwards the species has been found there regularly during the winter (GRZYWIŃSKI et al. 2004). A dead specimen was found in Szczyrzyc Monastery attic (Beskid Wyspowy) in July 2003, although the date on which the individual died is not known (SZKUDLAREK et al. 2003). During mist netting

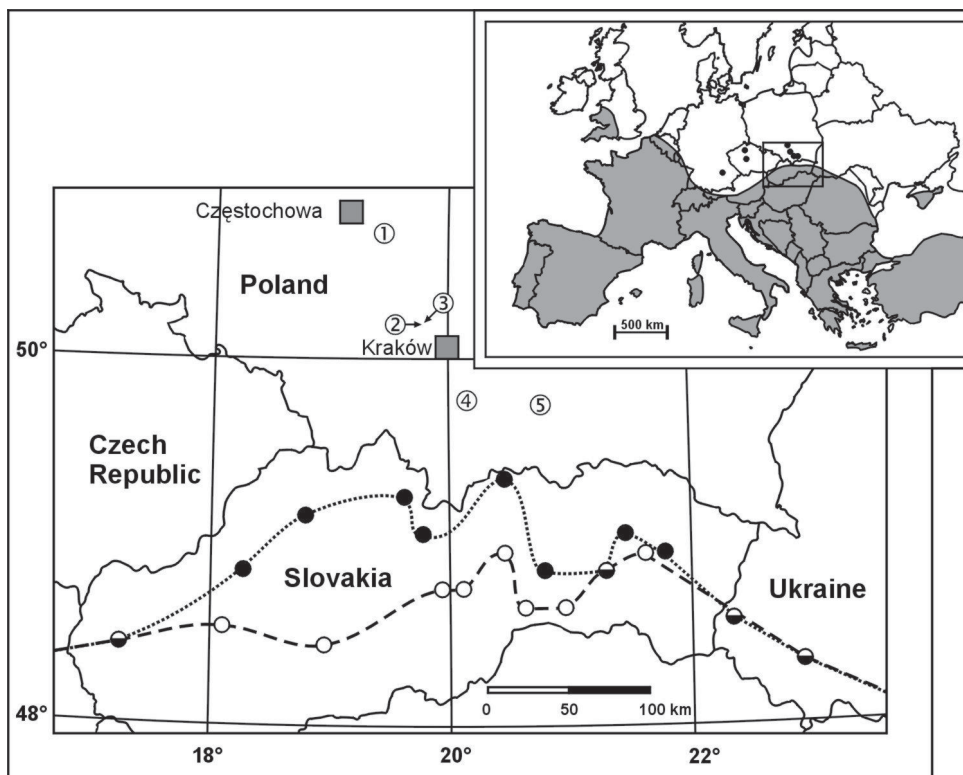


Fig. 1. Occurrences of *R. ferrumequinum* in Europe and the northern range boundary in Central Europe. The range of hibernation (black dots) and reproduction (white dots) (after: UHRIN et al. 1996; BIHARI 2001; GAISLER 2001; BOBACOVA et al. 2002; PJENCAK & DANKO 2002; SACHANOWICZ & CIECHANOWSKI 2005). 1 – Wierna Cave, 2 – Nietoperzowa and Na Tomaszówkach Dolnych Cave, 3 – Łokietka Cave, 4 – Szczyrzyc Monastery, 5 – Szkieletowa Cave.

performed at the entrance of the Na Tomaszówkach Dolnych Cave (1947° E, 5010° N; Olkuska Upland, Southern Poland) on the 25th of May 2005 an adult females of greater horseshoe bat ($m=24.5g$, $FL=59.1$ mm) was captured. The presence of a worn area around the nipples was evidence of reproductive activity during the previous year. Na Tomaszówkach Dolnych Cave is situated about 3.2 km to the east of Łokietka Cave, the nearest hibernaculum and about 142 km from the nearest confirmed summer location. This species is considered native to this area, as migrations between winter and summer shelters rarely exceed a few tens of kilometers, and the longest known movement was 180 km (GAISLER 2001). Populations in Hungary, Slovakia, Romania and Ukraine have distances between winter and summer shelters is of 20-30 km to 60-80 km depending on shelter availability (BIHARI 2001). In Central Europe females in maternity colonies first appear in mid to late April, depending on the weather conditions (BIHARI 2001). Foraging areas generally extend about 3-4 km from a maternity colony, with at maximum range of 14 km (RANSOME & HUTSON 2000). Many parturitions occur in the second part of July, however these are highly dependant on the temperature during the ovulation period and foetus development (MCOWAT & ANDREWS 1995, RANSOME & HUTSON 2000, ROSSITER et al. 2000). In Western Europe during the last 20 years a decrease in *R. ferrumequinum* number has occurred (RANSOME & HUTSON 2000), whilst in Central Europe the population of this species is considered to be stable (BIHARI 2001, NAGY et al. 2005), and evidence

on northern boundary of their range is increasing (UHRIN et al. 1996, BOBACOVA et al. 2002, PJENCAK & DANKO 2002). The range extension of *R. ferrumequinum* into southern Poland (Krakowsko-Częstochowska Upland, Beskidzkie foot hills) coincides with increasing number of Lesser horseshoe bat (*Rhinolophus hipposideros*) (e.g. KOZAKIEWICZ 2003, WOŁOSZYN et al. 2005) and Geoffroy's bat (*Myotis emarginatus*) (FURMANKIEWICZ & POSTAWA 2004). Evidence for *R. ferrumequinum* during the hibernation period in Poland, suggests that a hibernation range boundary displacement of about 103 km has occurred. The next northern most known ones are from Slovakia. The adult female captured at the end of May shows that the Olkuska Uplands has been used other than for hibernation purposes.

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