

Barbastelle (*Barbastella barbastellus*) in Norway

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Die Mopsfledermaus (*Barbastella barbastellus*) in Norwegen

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Abstract

This year *Barbastella barbastellus* was the first mammal species declared to be extinct in Norway. Four per cent of the records come from a small region in the southeast, while a subfossil record of the subboreal period is from the west coast. Two of the recent observations probably relate to hibernating bats, whereas another may have been a reproductive bat. All records indicate that the species prefers a warm and dry climate as well as a boreonemoral habitat. The reasons for the few observations may be ascribed to the fact that no species-specific search for *Barbastella barbastellus* was carried out so far.

Résumé

Cette année, *Barbastella barbastellus* fut la première espèce de mammifère à être déclarée comme disparue en Norvège. Quatre pour cent des chauves-souris furent localisés dans une petite région du sud-est, tandis qu'une trouvaille subfossile de la période subboréale provient de la côte ouest. Parmi les observations récentes, deux concernent probablement des chauves-souris hibernantes, pendant que dans le cas d'une troisième il pourrait s'agir d'un individu reproductif. Tous les enregistrements mettent en évidence que cette espèce préfère un climat chaud et sec tout comme un habitat boréonémoral. Le peu d'observations se laisse peut-être attribuer au fait qu'aucune recherche spécifique à l'espèce *Barbastella barbastellus* ne fut entreprise jusqu'à ce jour.

Zusammenfassung

Dieses Jahr wurde die Mopsfledermaus (*Barbastella barbastellus*) in Norwegen als erste rezente Säugetierart für ausgestorben deklariert. Vier Prozent der Funde wurden in einer kleinen Region im Südosten gemacht. Ein subfossiler Fund aus der subborealen Periode stammt von der Westküste. Zwei der neueren Beobachtungen waren wahrscheinlich überwinternde Fledermäuse, während die andere eine reproduzierende Fledermaus gewesen sein könnte. Alle Belege zeigen an, daß die Art in einem warmtrockenen Klima und einem boreonemoralen Habitat vorkommt.

Die wenigen Beobachtungen liegen darin begründet, daß bisher keine artspezifische Suche nach *Barbastella barbastellus* durchgeführt wurde.

Introduction

The observations of *Barbastella barbastellus* (SCHREBER, 1774) in Norway are the northernmost in its distribution range with the closest population found in southwest Sweden north to 53°30'N (RYDELL 1983, AHLÉN & GERELL 1989). All recent specimens are deposited in the Museum of Zoology, University of Oslo (MZ, UiO). The subfossil specimen is deposited in the Museum of Zoology, University of Bergen).

Recent records

COLLETT (1897, 1911-1912) described the first specimen collected on 2nd April 1896 in Hvalstad, Asker (59°50'N 10°29'E). The bat was shot when hunting at a flowering *Salix capraea* (L.) near an old mixed coniferous-deciduous forest. COLLETT (1897) also states that this species occurred regularly in the same locality in early spring even when the ground was still covered with snow. Four unconfirmed visual observations of flying bats are described having been made from 6th of March to 13th of April in the years 1882-1896. BARTH (1962) firstly described an additional specimen deposited in MZ, UiO. It was collected in 1911 at a church in Tanum (59°50'N 10°30'E). WOLLEBAEK (1947) mentions an individual found at the door of MZ, UiO on 15th October 1913. OLSEN (1996) cited WOLLEBAEK (1927) and states that the bat was found alive. The last observation and collection was made in a large mine complex at Konnerud near Drammen (59°42'N 10°12'E) during the first week of April 1949 (OLSEN et al. (1996). This was most probably a hibernating bat, but no additional bats were found later (BARTH 1963, RIGSTAD et al. 1996).

The subfossil record

STORMARK describes two humeri found in Dollsteinholacave (61°20'N 05°47'E), earlier identified as *Plecotus auritus* (L. 1758) by LIE (1989). This cave is located on a small island at the coastline and comprises Holocene deposits from the end of the Atlanticum (LIE 1989). The humeri dated to have origin from 3600-4400 years BP during the subboreal period, but the sediment layers may have been altered by inhabiting domestic mammals (STORMARK 1998). The island, now dominated by meadows and shrubland, was at this time probably covered by broad-leaved forest and had summer temperatures up to 3°C warmer than now (NESJE & KVAMME 1991, STORMARK 1998).

Discussion

As the last observation was made 50 years ago, *B. barbastellus* was this year declared extinct after the criterion given by IUCN (BAILIE & GROOMBRIDGE 1996). The few recent records leave little or no possibility for drawing any conclusion. However, some implications can be made. The subfossil record indicates a wider distribution range most probably correlated with the warmer climate in the subboreal period (NESJE & KVAMME 1991). The preference for warmer climate is also supported by the recent findings, all being located within a region with the highest average summer temperature in Norway (AUNE 1993). Locality habitats belong however to the mixed-forest boreonemoral zone (WALTER 1979). It is otherwise likely that the species may have occurred more regularly earlier as is indicated by COLLETT (1897, 1911-1912) and since later records are all accidental findings. This may be further supported by negative findings in regional and national bat surveys conducted during the last decade in southern Norway. However, OLSEN (1996) states that the previous summer localities were not surveyed. Climatically, most observations were also made following a very cold period ending in the middle of the 19th century (LEPIKSAAR 1986). The observations indicate that species is resident in the southeast, with a probable hibernation record in 1949. Also the undated specimen collected from a church in 1911 may have been from a summer reproductive colony as implied

by findings in Sweden (RYBERG 1947). However, until species-specific surveys have been conducted, the faunistic status and population trend of *B. barbastellus* in Norway remain unknown.

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