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Finding of a ringed common noctule *Nyctalus noctula* (Chiroptera: Vespertilionidae) in the eastern Ukraine

Dmitriy G. Smirnov* & Yuriy A. Bykov

ABSTRACT. The data of a young female *Nyctalus noctula* found dead in Kharkov and marked in the Vladimir Region are presented. The direction of seasonal migration and reasons for the animal mortality of are discussed.

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KEY WORDS: *Nyctalus noctula*, common noctule, seasonal migration, ringing.

Dmitriy G. Smirnov [eptesicus@mail.ru], Penza State University, Krasnaya str. 40, Penza 440026, Russia; Yuriy A. Bykov [bykov_goos@yahoo.com], Meshchora National Park, Gus-Khrustalny 601509, Russia.

Находка окольцованной рыжей вечерницы *Nyctalus noctula* (Chiroptera: Vespertilionidae) на востоке Украины

Д.Г. Смирнов*, Ю.А. Быков

РЕЗЮМЕ. Приведены данные о находке молодой самки *Nyctalus noctula*, найденной погибшей в г. Харькове и помеченной во Владимирской области. Обсуждается направление сезонной миграции и причины гибели животных.

КЛЮЧЕВЫЕ СЛОВА: *Nyctalus noctula*, рыжая вечерница, сезонная миграция, кольцевание.

* Corresponding author

Cases of finding bats at a great distance from the place of their ringing are very rare in Russia. The largest number of distant returns from migratory species was obtained in the second half of the last century during tagging in the Voronezh Region (Panyutin, 1980). Currently, despite active ringing of bats in various regions of the country, such information is absent or sporadic. Nevertheless, it is very important to have information on where the species spends its summer and winter in order to establish the nature of its residence and its geographical mobility. In this regard, any fact of registration of ringed animals is of great scientific value in terms of understanding the directions of their seasonal migrations and wintering sites.

Through the UNEP/EUROBATS Secretariat (Germany) we received information about finding of a ringed *Nyctalus noctula* (Schreber, 1774) on the outskirts of Kharkov. The ringed animal with the number "PENZA 02997" was found dead on September 21, 2024. It was about 200 similar dead animals found between the panes of a wooden window frame of a high-rise building. We put the mentioned ring on August 14, 2024 on a young female, which was caught on the territory of the Murom Federal Reserve on the shore of Lake Visha near the Aleshunino village, Gorokhovetsky District, Vladimir Region (55.8322° N, 42.3283° E). Together with it, eight more individuals of this species were caught and marked with rings of the same series: one adult and three immature females, two adults and two immature males. After tagging, the animals were immediately released at the location where they were caught. In total, about 100 individuals of *N. noctula* were tagged by us in the Vladimir Region during the summers of 2023 and 2024.

Judging by the condition of the corpse, the animal's death could have occurred about a month before its discovery. This means that after a short time after tagging it had migrated towards Ukraine. The distance traveled by the animal from the point of ringing to the place of its last discovery was about 750 km in a straight line (Fig. 1). The length of such a flight can be considered normal for *N. noctula*. It is known from the published data that the distance from summer habitats to wintering grounds in this species usually vary from

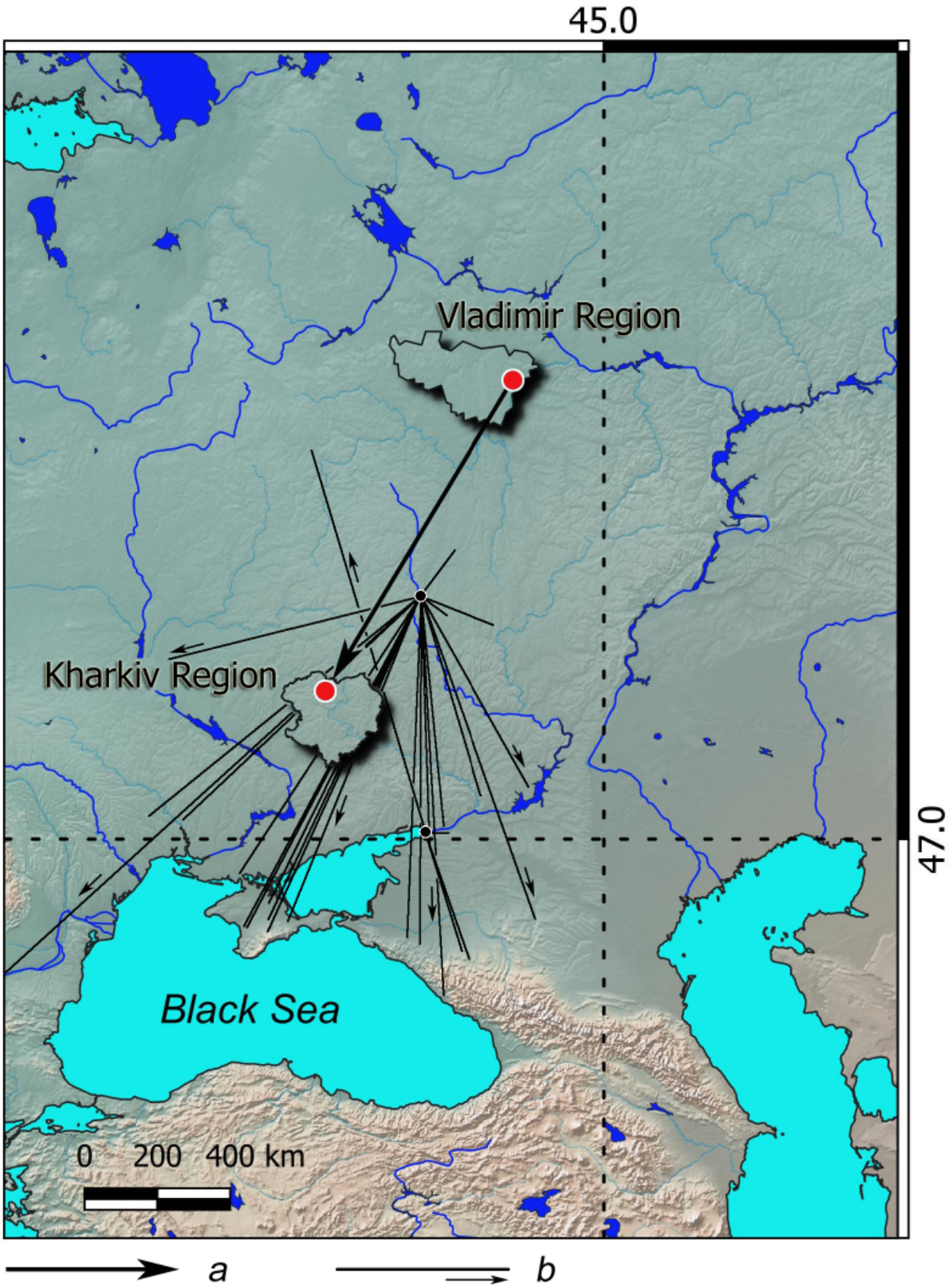

Fig. 1. Long-distance movement of the noctule bat (*Nyctalus noctula*) from Vladimir Region (Russia) to Kharkov Region (Ukraine) (*a*) and published data on long-distance movements of individuals ringed in Russia (*b*).

200 to 800 km, and the known maximum distance was 1546 km (Panyutin, 1980; Hutterer *et al*., 2005; Lehnert *et al*., 2018). In Russia, seasonal migration towards the Western Caucasus (Krasnodar Region) from breeding sites in Voronezh and Kaluga Regions has already been proved by ringing (Kameneva & Panyutin, 1960, 1964; Gazaryan & Kazakov, 2002), which counts about 800 and 1000 km, respectively. Our finding demonstrates the southwestern direction of migration. This direction of seasonal movements seems to be preferential for migratory bat species inhabiting the central part of European Russia. For example, in 2009, a record-breaking 2486 km flight of *Pipistrellus nathusii* (Keyserling, Blasius, 1839) from the Yaroslavl Region to the eastern border of France was reported (Vasenkov *et al*., 2022). In 2020 and 2022, using GPS-GSM trackers, migratory flights of *N. lasiopterus* (Schreber, 1780) were traced from the Vladimir Region southwestward toward southern European countries (Vasenkov *et al*., 2023). It was shown that *N. lasiopterus* can travel up to 2515 km in a straight line, and its maximum daily flight reaches 445 km. We do not exclude the possibility that Kharkov city for the immature female of *N. noctula* ringed by us could be the final destination of its seasonal migration, where the animal under more favorable circumstances would overwinter. This assumption is based on numerous findings of wintering aggregations of this species, which, since the 1990s, have been noted annually in cavities and cracks in the walls of various urban buildings (Vlaschenko, 1999, 2002; https://vk.com/bat_kharkov). The possibility of wintering of noctule bat in Kharkov Region of Ukraine is also proved by bioclimatic modeling of probabilistic area of wintering of the species (Smirnov & Zabashta, 2023). Unfortunately, bats are often indiscriminate in their search for potential roosts during seasonal migrations and fall into anthropogenic structures (Gazaryan & Bakhtadze, 2002; Merzlikin, 2002; Häussler *et al*., 1997; Gaisler, 1998). Old windows casings of buildings sometimes become such traps (Abelentsev, 1950; Vlaschenko, 1999, 2001, 2002; Godlevskaya & Kondratenko, 2004). Once trapped in the space between frames, the animals cannot escape and often perish, which, in fact, happened to a group of noctule bats, including the individual ringed by us.

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