

UDC 599.4:591.526+58

## CASES OF BAT DEATHS ASSOCIATED WITH PLANTS

**Igor Merzlikin**

Sumy State Pedagogical University  
Romenska St. 87, Sumy, 40002 Ukraine  
E-mail: mirdaodzi@gmail.com

**Cases of bat deaths associated with plants.** — Merzlikin, I. — Presented here are the accidents that happened with bats on plants having thorns (*Prunus spinosa*, *Robinia pseudoacacia*), spines (*Arctium* sp., *Ancistrocactus megarhizus*), and sticky buds (*Aesculus hippocastanum*). Bats clung on thorns and spines of plants by their wings, and stuck to sticky buds of horse chestnut and could not get rid of. Bats have begun to face new problems for themselves related to the elements introduced by man into their habitat (including cacti) or unnatural shelters (buildings).

Key words: bats, bat death, mortality, accidents.

**Випадки загибелі кажанів, пов'язані з рослинами.** — Мерзлікин, І. — Подано опис нещасних випадків, які трапилися з кажанами на рослинах, які мають колючки (*Prunus spinosa*, *Robinia pseudoacacia*), гачки (*Arctium* sp., *Ancistrocactus megarhizus*) та липкі бруньки (*Aesculus hippocastanum*). Кажани чіплялися перетинками на крилах за голки та гачки рослин та приклеїлися до липких бруньок каштану гіркого і не могли звільнитися. Кажани почали зустрічатися з новими для себе проблемами, які пов'язані з елементами, привнесеними людиною в їх середовище проживання (зокрема й кактусами) або у місця неприродних сховищ (людські будівлі).

Ключові слова: кажани, загибель кажанів, смертність, нещасні випадки.

### Introduction

Bats are very vulnerable animals. As it turned out, they often become victims of various unspecialized and specialized predators (Ilyin, 1990; Merzlikin, 2002 b; Denisova, 2004), die on roads (Merzlikin, 2002 a; Godlevskaya, Kondratenko, 2004; Zagorodniuk, 2006 a; Skubak, 2008), different kinds of technological traps (Ghazaryan, Bakhtadze, 2002; Merzlikin, 2002 a; Zagorodniuk, 2006 b; Häussler et al., 1997; Baerwald et al., 2008), and occasionally because of plants (Mosiash, 1985; Merzlikin, 2002 a).

This article describes new unusual cases that have become or could become the cause of bats' death associated with plants or sticky buds. In his previous publication the author have already informed about death cases of bats associated with plants (Merzlikin, 2002 a). Hence, in October 28, 2000 a common noctule (*Nyctalus noctula*) was found still alive on the bank of a pond in vicinities of Sumy city. It was stuck in a thick bush of blackthorn *Prunus spinosa*. In the late August 2001, a dry carcass of a small bat, probably some *Pipistrellus* sp. caught on prickly heads (burrs) of *Arctium* sp., was found in vicinities of Konotop city, Sumy region.

The purpose of this article is to describe and analyse cases of bats deaths on plants that have spinose structures.

### Material

The author has registered all facts of death of different species of animals including bats for many years. Besides personal observations, the information of colleagues and biology students of Sumy State Pedagogical University was considered as well. The facts of bats death associated with plants were selected from the total collected information.

## Results

During research conducted on the Chekha lake in Sumy city on 5 July 2004, loud sounds of a bat were heard coming from the crown of *Robinia pseudoacacia*. In the light of streetlamps, the author could distinguish the outlines of a bat. It remains unknown whether it was entangled among the branches of the tree or got injured chasing its prey.

While doing bird census in the central park of Sumy city on 12 May 2014 at 7.30 am, the author heard bat sounds in the chestnut alley. Exploring the trees a brown long-eared bat (*Plecotus auritus*) was spotted at a height ca. 10 m that got glued into sticky buds of the horse chestnut (*Aesculus hippocastanum*) with its both wings. The animal periodically moved his head and made sounds. It was impossible to get close to it. After 3 hours when re-examining the place the bat was not there yet (probably it became a victim of a raptor bird).

Bats can get into critical situations not only with local but also exotic plant species. Thus, in summer 2002 in an unglazed balcony on the fourth floor of a five-storey building located in the centre of Sumy a considerable collection of cacti was exhibited. One morning the owner found a medium-sized bat caught on the spines of a large fishhook cactus (*Ancistrocactus megarhizus*). This plant has 2 cm long rough and thick spines with hooks on their endings (Borisenko, 1986). The bat was hanging off the spines helplessly. It did not get injured hardly and flew away when released (I. Bulchenko, pers. comm.). According to descriptions, it was a serotine bat (*Eptesicus serotinus*).

## Discussion

There are other similar cases of animal deaths associated with plants. In particular, I. Zagorodniuk (pers. comm.) reported a similar case with a common noctule (*Nyctalus noctula*): the animal was found in a flat among a cacti collection having caught by its wings on the hook-like spines of a powder puff cactus *Mammillaria bocasana*.

This is not the only case of death of mammals associated with cacti. In October 1998, in the greenhouse of Sumy City Station for Young Naturalists a house mouse climbed on a large example of *Mammillaria guelzowiana*. The mouse climbed over the top of the plant and it got caught on its 2.5 cm long hook-like spines when trying to jump off. The mouse could not release itself and died.

S. S. Mosiyash (1985) described a found of 5 mummies of *Plecotus* sp. hanging off a greater burdock bush. In this author's opinion, initially there was caught only one noctule and it was making trouble signals, which were heard by other bat that were nearby. They flew up to the dangerous plant and become its victims too.

Analysing the presented facts it can be stated that bats may entangle among thorny branches of trees, shrubs, and bushes when chasing their prey or contacting spines of plants with their wings. In such cases not only one but a number of individuals can die.

Obviously, similar unusual cases of death of bats do not affect significantly the general level of mortality, although it is of certain interest in clarification of the whole spectre of incidents that can lead to tragic consequences for these animals.

## Acknowledgements

The author expresses his deep gratitude to I. Bulchenko and T. Bulat for providing information and I. Zagorodniuk for valuable comments and advice. The research was carried out within the framework of scientific theme "Fauna and ecology of northeastern Ukraine in conditions of anthropogenic pressure" (Sumy State Pedagogical University).

## References • Література

- Baerwald, E. F., D'Amours, G. H., Klug, B. J. et al. Bat deaths from wind turbines explained // University of Calgary. News. 2008. August 25. <https://goo.gl/g34I2b>
- Borisenko, T. I. Cacti. Directory. Kyiv : Naukova Dumka, 1986. 286 p. (in Rus.)

- [Борисенко, Т. І. Кактусы. Справочник. Киев : Наукова думка, 1986. 286 с.]
- Denisova, E. V. Vertebrates as natural enemies of bats // Memoirs of V. I. Vernadsky Taurida Nat. Univ. Series Biology, Chemistry. 2004. Vol. 17 (56), No. 2. P. 212–215. (in Rus.)

- [Денисова, Е. В. Позвоночные как естественные враги рукокрылых // Ученые записки Таврического нац. ун-та им. В. И. Вернадского. Серия Биология, химия. 2004. Том 17 (56), № 2. С. 212–215.]
- Ghazaryan, S. V., Bakhtadze, G. B. Pipe of boiler as man-made trap for bats // *Plecotus et al.* 2002. Vol. 5. P. 99–101. (in Rus.)
- [Газарян, С. В., Бахтадзе, Г. Б. Труба котельной – техническая ловушка для рукокрылых // *Plecotus et al.* 2002. Vol. 5. С. 99–101.]
- Godlevskaya, E. V., Kondratenko, A. V. Death of bats in window-traps // *Plecotus et al.* 2004. No. 7. P. 97–99. (in Rus.)
- [Годлевская, Е. В., Кондратенко, А. В. Гибель рукокрылых в окнах-ловушках // *Plecotus et al.* 2004. № 7. С. 97–99.]
- Häussler, U., Braun, M., Arnold, A. et al. Motorway bridge turns out to be a trap for the noctule bat (*Nyctalus noctula*) // *Myotis*. 1997. Bd. 35. S. 17–39.
- Ilyin, V. Yu. Additional information on the natural enemies of the bats of the Middle Volga // *Bats : Materials of the 5 All-Union Conference on Bats*. Penza, 1990. P. 85–86. (in Rus.)
- [Ильин, В. Ю. Дополнительные данные по естественным врагам рукокрылых Среднего Поволжья // *Рукокрылые : Мат-лы 5 Всесоюз. совещ. по рукокрылым*. Пенза, 1990. С. 85–86.]
- Merzlikin, I. R. Some causes of death of bats in the Sumy region (north-eastern Ukraine) // *Materials of the Eighth All-Russian meeting on bats*. Moscow, 2002 a. P. 113–115. (*Plecotus et al.*; Pars spec.) (in Rus.)
- [Мерзликин, И. Р. О некоторых причинах гибели рукокрылых в Сумской области (северо-восточная Украина) // *Материалы Восьмого Всероссийского совещания по рукокрылым*. Москва, 2002 а. С. 113–115. (*Plecotus et al.*; Pars spec.)]
- Merzlikin, I. R. Bats enemies in the Sumy region (northeastern Ukraine) // *Plecotus et al.* Moscow, 2002 b. Pars spec. P. 115–117. (in Rus.)
- [Мерзликин, И. Р. Враги рукокрылых в Сумской области (северо-восточная Украина) // *Plecotus et al.* Москва, 2002 б. Pars spec. С. 115–117.]
- Mosiyash, S. S. Flying at night. Moscow : Znanie Press, 1985. 160 p. (in Rus.)
- [Мосияш, С. С. Летящие ночью. Москва : Знание, 1985. 160 с.]
- Skubak, E. Death of bats on roads in the «Sviati Hory» Nature Park // *Rarity Mammal Fauna and its Protection*. Luhansk, 2008. P. 274–275. (*Proceedings of the Theriological School*; Vol. 9). (In Ukr.)
- [Скубак, Е. Гибель рукокрылых на автодорогах в НПП «Святые Горы» // *Раритетна теріофауна та її охорона*. Луганськ, 2008. С. 274–275. (Праці Теріологічної школи; Вип. 9).]
- Zagorodniuk, I. Animal mortality on the roads: estimation of vehicle traffic influence on populations of wild and domestic animals // *Fauna in Anthropogenic Environments*. Luhansk, 2006 a. P. 120–125. (*Proceedings of Theriological School*; Vol. 8). (in Ukr.)
- [Загороднюк, І. Загибель тварин на дорогах: оцінка впливу автотранспорту на популяції диких і свійських тварин // *Фауна в антропогенному середовищі*. Луганськ, 2006 а. С. 120–125. (Праці Теріологічної Школи; Вип. 8).]
- Zagorodniuk, I. Anthropogenic traps and survival of animals in transformed environment // *Tribune 12 : Proceedings of III Internat. Conf. / КЕСС*. Kyiv, 2006 b. P. 160–171. (in Ukr.)
- [Загороднюк, І. Антропогенні пастки та виживання тварин у трансформованому середовищі // *Трибуна 12 : Матеріали III Міжнар. конф. / КЕКЦ*. Київ, 2006 б. С. 160–171.]