Helix lucorum lucorum Linnaeus, 1758 (Pulmonata, Helicidae) in the city of Moscow

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An isolated but numerous population of Helix lucorum lucorum has been found in a small area of the south-western part of Moscow City, in the central part of European Russia for the first time. This is the northernmost known colony of the species.

Key words: non-indigenous species, urban fauna, Gastropoda, Russia

Introduction

*Helix lucorum* is one of the largest and widely distributed species of the genus, with a wide range extending from north-western Iran and Turkey in the east up to Italy in the west (*Schileyko* 1978, *Sysoev & Schileyko* 2005, *Krábek* et al. 2014). The species has been widely introduced to many places beyond its natural distribution, among others to England, France, Spain, Czechia, Slovakia, southeastern part of Ukraine and central Russia (*Palmer* 2010, *Miens & Rittner* 2010, *Quiñonero Salgado* et al. 2010, *Peltanova* et al. 2012, *Čejka & Čacany* 2014, *Balashov* et al. 2013, *Bulavkina & Stoyko* 2007). In Russia, native populations of the species live in Krasnodarskiy Kray [Краснодарский Край], Adyghea [Адыгея], and Rostov Region [Ростовская область] (*Schileyko* 1978; *pers. obs.*). Except this natural range, species was introduced to Penza Region [Пензенская область] (*Bulavkina & Stoyko* 2007, 2009; *Stoyko & Bulavkina* 2010). In Penza [Перея], it occupies limited areas within the city (the stations of young naturalists, zoo, overgrown vacant lots, etc.). According to *Bulavkina & Stoyko* (2007), ten years ago, the number of these snails was quite large there. The recent findings of introduced populations demonstrate potential of this snail to colonize new areas, located far from its natural range.

Locality and habitat description

A new population in Moscow, which is the northernmost of the species, is reported here for the first time. This population is located in south-western part of Moscow along the Sevastopolskiy Avenue [Севастопольский проспект] on the property of the Institute of Theoretical and Experimental Physics (ITEP; 55°40'35"N 37°35'16"E; Figs 1, 2A). From there, snails periodically crawl out on the lawns along the fence of ITEP, where they have been discovered for the first time (Figs 2B-H). The area of ITEP occupies a part of the former area “Cheryomushki-Znamenskoye” [Черемушки-Знаменское] and is defined by Nakhi-movskiy Avenue [Нахимовский проспект] in the south, Sevastopolskiy Avenue [Севастопольский проспект] in the east, Bolshaya Cheryomushkinskaya street [Большая Черёмушкинская улица] in the west and Dmitry Ulyanov street [Дмитрия Ульянова улица] in the north. The total area occupied by the institute is 37.5 hectares. The property of the Institute is not publicly accessible and snails were observed only on the lawn along the fence by Sevastopolskiy Avenue [Севастопольский проспект]. A main part of the territory of the Institute holds the eighteenth century “Cheryomushki” [Черёмушки] manor – a monument of architecture and landscape art. There are about 6000 trees and shrubs in the park area, including linden, maple, pine, larch, oak, and arborvitae, some several hundred years old (*Belfor* et al. 2015). The lawn located along the fence on the Sevastopolskiy Avenue [Севастопольский проспект] is planted with linden trees; behind the fence, there are linden and maple trees and wild grape bushes. The bulk of *H. lucorum* specimens was observed on the fence and the adjacent lawn in front of the institute buildings 25/113 and 25/101. The distribution of the snails within the ITEP area is unknown, but according to institute employees the highest concentration of snails was also observed around those buildings. On the other sites of the ITEP property, the snails did not occur (Bolshaya Chereemushkinskaya [Большая Черемушинская улица] and Dmitry Ulyanov [Дмитрия Ульянова улица] streets). Thus, the population occupies an area which probably does not exceed the length of 300–350 metres along the fence of ITEP, where they have been discovered for the first time (Figs 2B-H). The area of ITEP occupies a part of the former area “Cheryomushki-Znamenskoye” [Черемушки-Знаменское] and is defined by Nakhi-
ing to the ITEP staff, the colony appeared in the mid-late 1960s. It is possible that snails were used as laboratory animals for experiments and were accidentally or intentionally released into the park.

With high probability it can be possible to establish the geographic origin of the colony on the basis of molecular data, kindly provided by Ondřej Korábek (Prague). The analysed individual yielded a 16S haplotype that appears characteristic for Georgia and adjacent north-eastern Turkey. The observed colony consists of typical Helix lucorum lucorum (Fig. 3), which is a common form in the Caucasus and Transcaucasus, thus the Caucasian origin is likely.

It is interesting to note that live specimens of H. lucorum lucorum have already been found in Moscow previously (Egorov 2015, Schikov 2016), but in these cases no stable population were formed. However, I have received information from Yuri Kantor (pers. obs.) about the probable existence of another population of this species also in the south-west of Moscow City. He informed me that H. l. lucorum overwinters in Moscow since the 1980s, when employees of the Institute of Higher Nervous Activity and Neurophysiology of RAS (IHNAN RAS) [Институт Высшей Нервной Деятельности и Нейрофизиологии РАН] released some individuals collected in the Caucasus H. l. lucorum that have been kept in a vivarium into the bushes of the institutional garden. He collected them in 1987–1988. The IHNAN RAS is located in the South-West Administrative District of Moscow, Kon’kovo [Коньково] municipal district, between streets of Butlerova [Бутлерова] and Academician Volgin [Академика Волгина], Obruchev [Обручева] and Profsoyuznaya [Профсоюзная] streets. Territory of the Institute, according to Yuri Kantor, is rich in shrubs and trees, which can be confirmed also by a Google satellite photo of the area (Google 2017) and photo from the Institutional site (IHNAN RAS 2017). However, the current existence of this colony is not known.

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Fig. 2. See previous page.
Fig. 3. See next page.
Fig. 3. *Helix l. lucorum*. A-B: Shells of specimens in different ages, the linden alley along the ITEP fence on Sevastopolskiy Avenue, September 14, 2015, coll. R. Egorov, collection of the Zoological Museum of Moscow State University (ZMMU), Lc-40374; A: H 39.0 mm, D 43.0, B: H 35.0 mm, D 39.0 mm (juvenile), C: East of Moscow City, Izmailovskii forest park, about 10 m to east from Glavnaya Alleya road, August 9, 2014, coll. R. Egorov, H 40.8 mm, D 47.0 mm, collection of the ZMMU, Lc-40373; D: South Russia, Krasnodarskiy Krai, Gelendzhik, on the territory of the station of the Institute of Oceanology, October 5, 1995, H 36.1 mm, D 44.1 mm, coll. R. Egorov; E: Georgia, Tbilisi, on the territory of the Botanical Garden, H 39.5 mm, D 41.0 mm, coll. A. Kuznetsov; F: Georgia, Mtksketa, Santavo monastery, H 34.4 mm, D 39.3 mm, coll. A. Kuznetsov.

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