

# The first record of introduced snail *Cepaea hortensis* (Müller, 1774) (Stylommatophora: Helicidae) in the central part of European Russia

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**SUMMARY.** In May 2014, numerous specimens of *Cepaea hortensis* were found in Vidnoe, a town 5 km south from the Moscow City. *C. hortensis* is the third species of the genus introduced in the Moscow Region. The nearest locality of *C. hortensis* is known from the Vitebsk Region of the Republic of Belarus (about 550 km W of Moscow). Now *C. hortensis* is reported from one site of Vidnoe town, where it forms a stable population. Also, a few specimens of this species were collected in the park of Timiryazev’s Agriculture Academy in northern part of Moscow City.

*Cepaea hortensis* (Müller, 1774) is a very common species, widely spread in the central and western Europe [Schileyko, 1978; Kerney, Cameron, 1979; Hakkinen, Koponen, 1982; Kerney *et al.*, 1983; Prieto, Altonaga, 1988; Sverlova, 2002; Welter-Schultes, 2012; Neubert, 2013], and was recently introduced in NE America [Pearce, Olori 2004; Pearce *et al.*, 2010]. According to Grishanov *et al.* [1999] and Schapiro [2002], the species is also found in the Leningrad region in the Izhora Hills. At the moment, it is unclear whether these populations are natural or introduced. However, Schapiro included this species in the lists of protected species of the reserve “Kotelsky” and nature memorials “Duderhofske vysoty” (“Duderhof heights”) and “Dontso” [Schapiro, 2002: 70]. Early multi-banded forms of *C. hortensis* from the Izhora Hills locality were erroneously identified as *C. vindobonensis* (Pfeiffer, 1828) [Egorov, 2014: 110], which differs from *C. hortensis* in the presence of distinct axial striation, characteristic basal band and dark brown lip.

No records of *C. hortensis* for the central European part of Russia were previously published [Schileyko, 1978; Schileyko, 1982; Kantor, Sysoev 2005; Egorov, 2008; Sysoev, Schileyko, 2009; Tappert, 2009]. This communication reports the finding of a population of *C. hortensis* in the Moscow Region.

## Results

The specimens of *C. hortensis* were collected in 2014 in a municipal park of Vidnoe town in the Moscow Region. First records of bright, variously colored medium-sized snails in this town together with images were anonymously reported in August 2012 by the website “malacolog.com” (<http://malacolog.com/forum/viewtopic.php?f=24&t=871>). The figured specimens were determined by N. Sverlova as *Cepaea hortensis*. My visit to the specified place in May 2014 has confirmed this information and determination of this species as *Cepaea hortensis*.

Vidnoe town is located in the Leninskiy district of the Moscow region on Teplostanskaya hill, on the Bitza River (left tributary of the Pakhra River) 23 km south of Moscow City center and 5 km from the Moscow Ring Road (official city border). The municipal park is located in the northeastern part of the town and represents a patch of natural forest, preserved after the construction of the town. From the south the park is bordered by local highway (Zavodskaya street) and a residential district. In the North the park is adjacent to the private residential sector with vegetable gardens. The western side of the park is adjacent to yard of the Hygiene and Epidemiology Center of the Moscow region. The eastern part of the park has no clear boundaries and transforms into wasteland with elements of the industrial zone and is then limited by Moscow-Kashira highway (Fig. 1).

Four live juveniles, 14 adults and one empty shell of *C. hortensis* were collected in a small area (about 30 m<sup>2</sup>) on the border of the forest park and the residential sector on May 10, 2014 (Fig. 2 A). Majority of collected mollusks had uniform yellow or pink shells (Fig. 3 A). Only two shells were multi-banded. Most snails were collected on the ground between plants with *Urtica dioica* L., *Ae-*

*gopodium podagraria* L., and Ranunculaceae indet. dominating. The following snail species were collected at the site with *C. hortensis*: *Succinea putris* (Linnaeus, 1758), *Trochulus hispidus* (Linnaeus, 1758), *Fruticicola fruticum* (Müller, 1774), and *Helix pomatia* Linnaeus, 1758.

The next visit to the locality was made on May 14, 2015. In total, 32 specimens were collected in the area of length about of 30 and width from 3 to 8 m (Fig. 2 B). 21 collected specimens had unicoloured shells (Fig. 3 C-D) and 11 specimens had multi-banded shells (Fig. 3 B). Snails were collected from the logs and leaves and stems of plants in cloudy weather in the morning (between 8-9 AM) after the night rain.

In July 2015 few juveniles and one adult specimen of *C. hortensis* were collected during a short visit to the park of Timiryazev's Agriculture Academy. The park of Timiryazev's Agriculture Academy (former Petrovsko-Razoumovskiy Park) is one of the oldest forest parks in northern part of Moscow city. It is located in the Timiryazev district of the Northern Administrative District of the Moscow city. The history of the park dated back several centuries. First time the molluscan fauna of this park was described by Lindholm [1911]. Since then several introduced species of molluscs were discovered in this park – *Deroceras caucasicum* (Simroth, 1894), *Arion* cf. *vulgaris* (Moquin-Tandon, 1855), *Arianta arbustorum* (Linnaeus, 1758), *Helix pomatia* (Linnaeus, 1758) [Malevich, Starobogatov, 1958; Tappert, 2009; unpublished data]. The specimens of *C. hortensis* (Fig. 3 H) were collected from one spot of the territory of nursery-garden crops along the Pasechnaya street after a heavy rain. All collected snails has multi-banded shell. Previously, this species was not observed in this location. Undoubtedly, the snails were introduced together with the soil of imported seedlings.

## Discussion

According to local residents, the first mass appearance of *C. hortensis* in Vidnoe town has been noted about five years ago in private gardens simultaneously with *Helix pomatia*. This fact may indicate that eggs or young individuals of both species may have been introduced in the gardens with soil of planting material. It is obvious that the snails initially originated from one of these gardens. It is not possible to determine whether it was a random introduction with the soil or plants, or a conscious introduction of "exotic" snails by man. However in few years the introduced individuals of *C. hortensis* and *H. pomatia* gave start for the current stable populations. This is confirmed by the abundance of juvenile snails of different ages and high reproductive activity of adult individuals (Figs 3 E-F). Inter-

estingly that *H. pomatia* are widely spread throughout the forest park, while colony of *C. hortensis* is concentrated on the territory adjacent to the gardens in the northern end of the park and did not penetrate the forest at the moment of observation.

The field observations have shown that the leaves of goutweed and nettle are sources of nutrition for the *C. hortensis* in this locality. It is interesting to note that the adult specimens of *C. hortensis* from Vidnoe's population have larger shells than were specified in Schileyko [1978: 322]. He indicated the range of greater diameter as 18-21 mm. Kerney *et al.* [1983: 282] indicated maximum diameter of European specimens within 18-20 (rarely 22) mm. Dimensions of 19 adult specimens of *C. hortensis* from the Vidnoe's population: height of shell: 13.0-16.0 mm, greater diameter 21.0-23.8 mm, minimal diameter 17.4-20.1 mm. Most of measured specimens have maximum diameter of shell about 22 mm. The height of shell was measured in oblique position of shell (from the basal part of aperture to the apex).

The list of introduced terrestrial mollusks of the Moscow Region, already including 9 species [Egorov, 2014], is thus supplemented with one more European species, which forms a small but stable population. After the finding of *C. vindobonensis* [Egorov, 2014] and *C. nemoralis* [Sverlova, 2007; Egorov, 2008], *C. hortensis* became the third species of the genus *Cepaea* known from the Moscow region.

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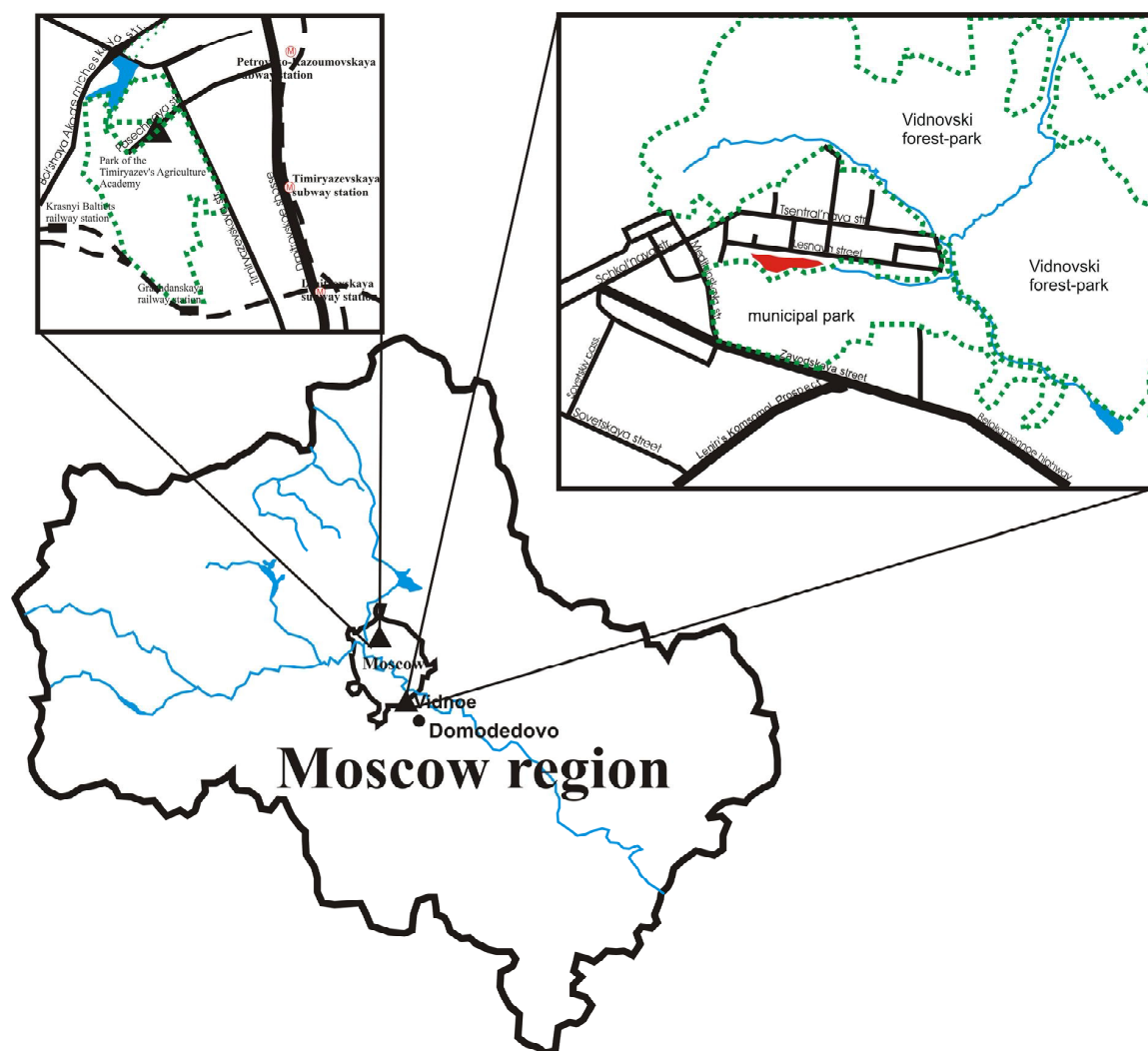


FIG. 1. Map showing the collecting cites for *Cepaea hortensis* (black triangles) in Moscow and Moscow region with enlarged schemes of the park of Timiryazev's Agriculture Academy and Vidnoe town (the habitat of *C. hortensis* is highlighted).

РИС. 1. Карта местонахождений *Cepaea hortensis* (черные треугольники) в Москве и Московской области с увеличенной схемой местонахождения *C. hortensis* в парке Сельскохозяйственной Академии им. Тимирязева и г. Видное (местообитание *C. hortensis* закрашено).

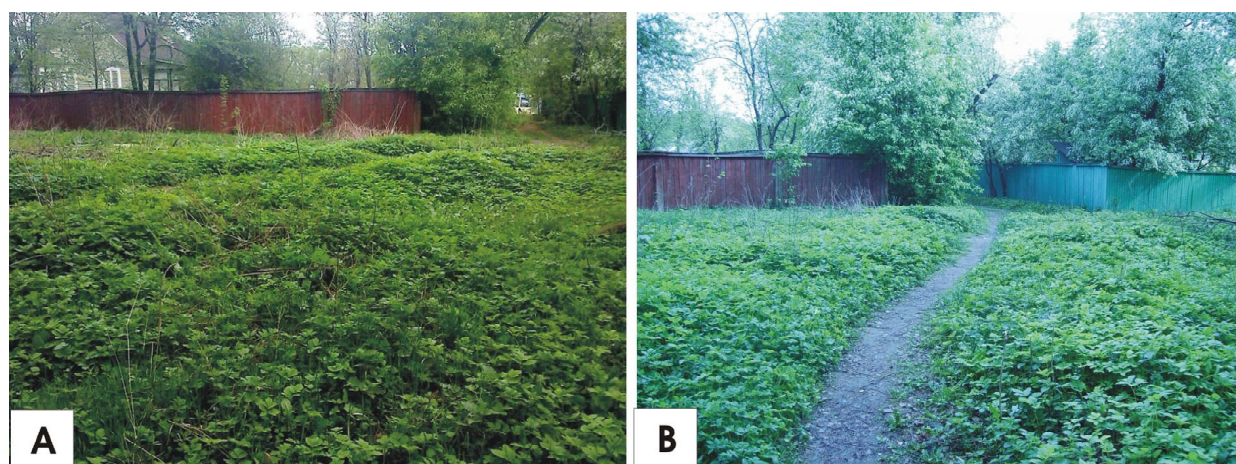


FIG. 2. A – the habitat of *C. hortensis* in Vidnoe town, May, 10<sup>th</sup>, 2014; B – the same locality, May, 14<sup>th</sup>, 2015. Photo by the author.

РИС. 2. А – местообитание *C. hortensis* в г. Видное, 10 мая 2014; В – то же место, 14 мая 2015. Фото автора.



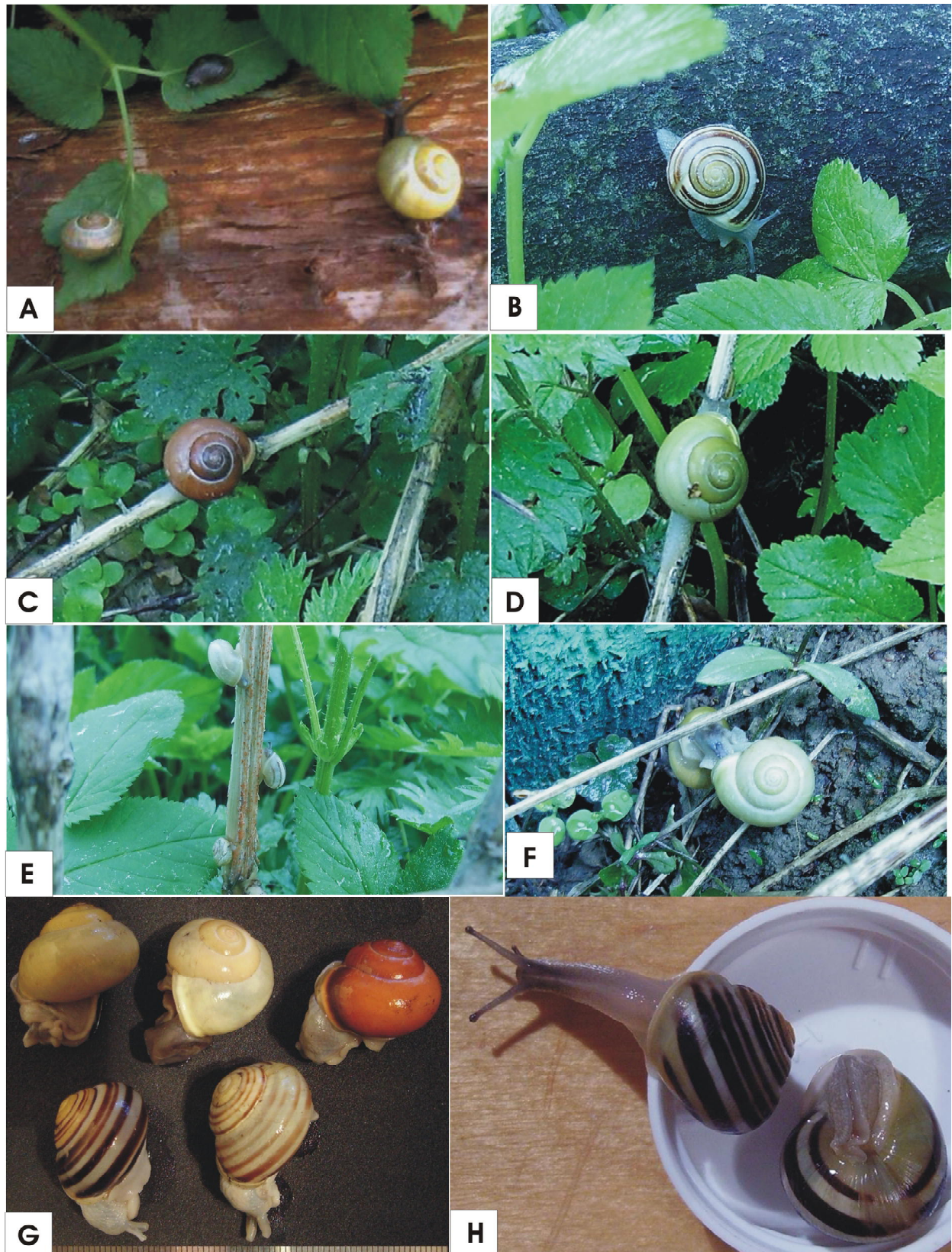


РИС. 3. А – *C. hortensis* в Видное town, May 10<sup>th</sup>, 2014; В – banded form of *C. hortensis*, Vidnoe town, May 14<sup>th</sup>, 2015; С, D – yellow and pink unicolored forms of *C. hortensis*, Vidnoe town, May 14<sup>th</sup>, 2015; Е – juvenile specimens of *C. hortensis*, Vidnoe town, May 14<sup>th</sup>, 2015; F – adult individuals of *C. hortensis* “in copuli”, Vidnoe town, May 14<sup>th</sup>, 2015; G – preserved samples of *C. hortensis*, Vidnoe town, May 14<sup>th</sup>, 2015; H – *C. hortensis* from the park of Timiryazev’s Agriculture Academy, July 20<sup>th</sup>, 2015. Photo by author.

FIG. 3. А – *C. hortensis* г. Видное, 10 мая 2014; В – полосатая форма *C. hortensis*, г. Видное, 14 мая 2015; С, D – желтая и розовая формы *C. hortensis*, г. Видное, 14 мая 2015; Е – молодь *C. hortensis*, г. Видное, 14 мая 2015; F – взрослые особи *C. hortensis* “in copuli”, г. Видное, 14 мая 2015; G – фиксированные особи *C. hortensis*, г. Видное, 14 мая 2015; H – *C. hortensis* из парка Сельскохозяйственной Академии им. Тимирязева, 20 июля 2015. Фото автора.

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Первая находка интродуцированной улитки *Cepaea hortensis* (Müller, 1774) (Stylommato-phora: Helicidae) в центральной части Европейской России

Роман ЕГОРОВ

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**РЕЗЮМЕ.** Впервые многочисленная популяция *Cepaea hortensis* была обнаружена в г. Видное Московской области в мае 2014 года. *C. hortensis* стала третьим видом рода *Cepaea*, интродуцированным в Московскую область. Ближайшая популяция данного вида известна из Витебской области Республики Беларусь, расположенная примерно в 550 км к западу от Москвы. Кроме того, в июле 2015 года несколько особей *C. hortensis* были собраны в парке Сельскохозяйственной академии им. Тимирязева, расположенном в северной части города Москва.