

Malacological news from the Czech and Slovak Republics in 2020

TOMÁŠ ČEJKA¹, LUBOŠ BERAN², RADOVAN COUFAL³, LIBOR DVOŘÁK⁴, JAROSLAV Č. HLAVÁČ⁵,
JITKA HORÁČKOVÁ⁶, VERONIKA HORSÁKOVÁ³, LUCIE JUŘIČKOVÁ⁷, TEREZA KOSOVÁ⁷, JURAJ ČAČANÝ⁸,
DANA SZABÓOVÁ⁸, DAGMAR ŘÍHOVÁ⁹, BRANISLAV TEJ¹⁰ & MICHAL HORSÁK³

¹Institute of Botany, Plant Science and Biodiversity Center, Slovak Academy of Sciences, Dúbravská cesta 9, SK-84523 Bratislava, Slovakia, e-mail: t.cejka@gmail.com,  <https://orcid.org/0000-0002-6485-5660>

²Nature Conservation Agency of the Czech Republic, Regional Office Kokořínsko – Máchův kraj Protected Landscape Area Administration, Česká 149, CZ-276 01 Mělník, Czech Republic, e-mail: lubos.beran@nature.cz,  <https://orcid.org/0000-0002-5851-6048>

³Department of Botany and Zoology, Faculty of Science, Masaryk University, Kotlářská 2, CZ-61137 Brno, Czech Republic, e-mail: radovan.coufal39@seznam.cz,  <https://orcid.org/0000-0002-5870-5041>; veronika.horsakova@seznam.cz,  <https://orcid.org/0000-0002-3264-7728>; horsak@sci.muni.cz,  <https://orcid.org/0000-0003-2742-2740>

⁴Tři Sekery 21, CZ-35301 Mariánské Lázně 1, Czech Republic, e-mail: lib.dvorak@seznam.cz,  <https://orcid.org/0000-0002-4712-3679>

⁵National Museum Prague, Department of Zoology, Cirkusová 1740, CZ-193 00 Praha 9 – Horní Počernice, Czech Republic,  <https://orcid.org/0000-0001-9536-383X>

⁶Czech University of Life Sciences Prague (CZU), Faculty of Environmental Sciences, Department of Landscape and Urban Planning, Kamýcká 129, CZ-165 00 Praha - Suchbátka, Czech Republic, e-mail: jitka.horackova@gmail.com,  <https://orcid.org/0000-0003-3776-041X>

⁷Department of Zoology, Faculty of Science, Charles University, Viničná 7, CZ-128 44 Praha 2, Czech Republic, e-mail: lucie.jurickova@seznam.cz,  <https://orcid.org/0000-0001-5163-1222>; tereza.kosova@gmail.com,  <https://orcid.org/0000-0003-4705-0737>

⁸Slovak National Museum - Natural History Museum, Vajanského nábrežie 2, P. O. BOX 13, SK-810 06 Bratislava, Slovakia, e-mail: juraj.cacany@gmail.com; dana.szaboova@snm.sk,  <https://orcid.org/0000-0003-0179-0369>

⁹Charles University, Faculty of Education, Dept. of Biology and Environmental Studies, Magdalény Rettigové 4, CZ-11639 Praha, Czech Republic, e-mail: dagmar.rihova@pedf.cuni.cz,  <https://orcid.org/0000-0002-2122-130X>

¹⁰University of Presov in Presov, Faculty of Humanities and Natural Sciences, Ul. 17. novembra 1, SK-081 16 Prešov, Slovakia, email: branislav.tej@smail.unipo.sk

ČEJKA T., BERAN L., COUFAL R., DVOŘÁK L., HLAVÁČ J. Č., HORÁČKOVÁ J., HORSÁKOVÁ V., JUŘIČKOVÁ L., KOSOVÁ T., ČAČANÝ J., SZABÓOVÁ D., ŘÍHOVÁ D., TEJ B. & HORSÁK M., 2021: Malacological news from the Czech and Slovak Republics in 2020. – *Malacologica Bohemoslovaca*, 20: 56–74. <https://doi.org/10.5817/MaB2021-20-56>
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This paper presents important faunistic records including location data with all details conducted in the Czech and Slovak Republics during 2020. Four new non-native species, *Arion intermedius*, *Ambigolimax valentianus*, *Clathrocaspia knipowitschii* and *Krynickyllus melanocephalus*, were recorded outdoors in Slovakia. *Radix lagotis* was genetically confirmed for the first time from several sites in the Czech Republic and Slovakia. *Corbicula fluminea*, recorded in Moravia for the first time in 2018, was found in another river, ca 50 km far from the first occurrence. *Cepaea nemoralis*, recorded in Slovakia for the first time in 2015, seems to have started spreading. New sites of *Cornu aspersum* were noticed in Prague and Bratislava; for the first time it was also found in Brno. There are also new records of several endangered species, e.g. *Vertigo moulinsiana*, *Pisidium hibernicum*, *P. globulare*, and *Pseudanodonta complanata*, presented.

Key words: mollusc fauna, faunistic survey, species list

Introduction

Because the last comprehensive monograph on molluscs of the Czech and Slovak Republics was published in 2013 (HORSÁK et al. 2013), to keep the track of new important records we decided to annually publish malacological news from the territory of former Czechoslovakia. All these new data are used to regularly update an annotated checklist of molluscs and distribution maps of selected species (HORSÁK et al. 2021). Previous summary of new records covers the years 2015–2019 (ČEJKA et al. 2020). In this paper, we present important faunistic records con-

ducted in the Czech and Slovak Republics during 2020. Detailed occurrence data for each species listed in the text is provided in Table 1. The rules for the selection of the records are: (i) the first record in Bohemia, Moravia or Slovakia, (ii) regionally important new record, (iii) records of species listed in NATURA 2000 and the national Red Lists as critically endangered or endangered species, or (iv) non-native species currently spreading to new areas. In a few exceptions we also included older data than 2020 when they met the rules above and have not been published in ČEJKA et al. (2020).



Fig. 1. The slug *Ambigolimax valentianus* from Bratislava City, SK. Photo by T. Čejka.

Comments on individual species

Aegopinella nitidula (Draparnaud, 1805)

New findings of the species come from the northeastern part of the České Středohoří PLA (Protected Landscape Area). For more information about the species see ČEJKA et al. (2020).

Ambigolimax valentianus (A. Férussac, 1821)

First record of this garden slug in Slovakia. This ground-living species mostly occurs in greenhouses, gardens, compost heaps, and under fallen trunks and stones, preferably in shady locations with dense vegetation (WIKTOR et al. 2000). The native occurrence of *A. valentianus* is in the Iberian Peninsula (BARKER 1979); however, it has been spread by human activities, presumably with garden plants and soil containing its eggs and juveniles, to many other parts of the world such as Ireland, England, Central Europe, France, South Sweden, Malta, West Italy, Russia, New Zealand, Australia, Japan, and Africa, as well as South and North America (EKIN & ŞEŞEN 2018).

This slug was found outdoors during the survey of the surroundings of the horticultural center in Bratislava City, Slovakia. The identification was confirmed by inspecting its genitalia (Fig. 1).

Anisus vorticulus (Troschel, 1834)

Critically endangered snail in the Czech Republic (BERAN et al. 2017). Due to its extinction or decline in many European countries, it is listed in the EU Habitats Directive (92/43/EEC). This species is regularly monitored in the Czech Republic, and only isolated populations in the lowlands of the biggest Czech rivers exist there (BERAN 2015). The exception is southern Moravia where many sites exist in floodplains of the lower sections of the rivers Dyje and Morava. Some new sites were found there also in 2020. The abundant occurrence in two pools in the Libický luh National Nature Reserve in the basin of the river Labe was confirmed in 2020 after a successful reintroduction of the species.

Aplexa hypnorum (Linnaeus, 1758)

Moderately uncommon and vulnerable species inhabiting stagnant and temporary pools and wetlands. The finding of this species in wetlands in the north cove of the Orava reservoir is outside its known distribution range in Slovakia.

Arion circumscriptus Johnston, 1828

Small slug inhabiting floodplains and wet ravines in natural habitats and also in the urban landscape (parks, gardens, wet sites, e.g. in Prague). It has been considered common due to regular confusion with other species, mainly *Arion silvaticus* for most of the 20th century (HORSÁK et al. 2013). The anatomical revision of museum collections revealed that in fact its distribution is very scattered in the Czech Republic. It can be partly also due to the lack of missing recent monitoring data. The finding of this species in the Bilina floodplain by Želenice is outside its revised known distribution range in the neighbouring České Středohoří PLA, where it is known from four sites only.

Some recent studies found the evidence that all three members of the subgenus *Carinarion* Hesse, 1926 (i.e. *Arion fasciatus*, *A. silvaticus* and *A. circumscriptus*) are in fact only morphospecies (JORDAENS et al. 2000; GEENEN et al. 2006) and treat them as a single species (e.g. AUDIBERT & BERTRAND 2015) with the name *Arion fasciatus* having priority. However, in Britain *A. fasciatus* s.s. is more distinct than the other two taxa both morphologically and genetically, so that recent British literature keeps it separate from the other two entities (ROWSON et al. 2014). We do not see the situation fully resolved and at least for the moment retain the original three species (see HORSÁK et al. 2013 for morphological characters) until there is more evidence also based on nuclear markers. Our field observations also concord with the British data as *A. fasciatus* s.s. has a different ecology than the other two entities, by inhabiting exclusively a synanthropic environment. The second reason is that while it is easy to merge the data on all three taxa, it is impossible to do it otherwise.



Fig. 2. *Arion intermedius* from Bratislava City, SK. Photo by T. Čejka.

***Arion intermedius* Normand, 1852**

New records from the Czech Republic come from north-eastern, northwestern and westernmost Bohemia. Although the species has been introduced into nearly all continents and has sometimes become a serious pest (see e.g. BARKER 2002, HAUSDORF 2002, CÁDIZ & GALLARDO 2007, ARAIZA-GÓMEZ et al. 2021), the majority of records from the Czech Republic come from various forest types. Two individuals were found in a bouquet of cut flowers in the Church of St. Francis of Assisi, St. Francis Square, Bratislava City, Slovakia and represent the first records for Slovakia (D. Szabóová identified the samples by DNA barcoding) (Fig. 2).

For more information about the species see ČEJKA et al. (2020).

***Arion obesoductus* Reischütz, 1973**

New records come from the Hradec Králové region. For more information about the species see ČEJKA et al. (2020).

***Bythinella austriaca* (von Frauenfeld, 1857)**

Small hydrobiid species inhabiting springs and small brooks. It is common and widespread across Slovakia and eastern Moravia, except for large lowlands. It is very rare in the western part of the Czech Republic, with further populations only in northeastern Bohemia and a small isolated patch in Prague and its surroundings (BERAN 2010, HORSÁK et al. 2020). Two new sites on the western edge of its continuous distribution range were found in 2020 (BERAN 2020).

***Cepaea nemoralis* (Linnaeus, 1758)**

Widely distributed species in Western and Central Europe, where it occurs in a variety of natural and anthropogenic habitats. It lives in a very diverse range of habitats – forests, hedges, wastelands, meadows, dunes etc. (KERNEY & CAMERON 2006).

The first Slovak records of this species come from horticultural centers in Bratislava City, where this species was probably introduced with plant material (ČEJKA 2015). The



Fig. 3. *Chondrula tridens* from Toužínské stráně NM, Dačice, CZ. Photo by R. Coufal.

first finding outside the garden centers also comes from Bratislava City, from the Danube embankment, a small space between buildings with a lawn, ivy and several trees.

***Chondrula tridens* (O. F. Müller, 1774)**

Species with a scattered occurrence in the steppes of both countries (Fig. 3). During the last decades, it has been declining sharply due to changes in landscape management, in particular the abandonment of grazing and mowing. A recent survey of its localities shows it has vanished from dozens of its original sites, similarly to another steppe species – *Helicopsis striata* (ČEJKA et al. 2020). The new finding of the species comes from the westernmost edge of the České Středohoří PLA by the town of Most. This is one of only five known surviving populations in the entire area of northwestern Bohemia. Unfortunately, the population has low densities.

For more information about the species see ČEJKA et al. (2020).

***Clathrocaspia knipowitschii* (Makarov, 1938)**

The first Danube record of dozens of living individuals of this originally Ponto-Caspian species (previously known only from the Lower Dnieper River) comes from 2013, from two sites explored within the sampling program 3rd Joint Danube Survey (Kladovo and Kozloduy) (CSÁNYI et al. in press). Macroinvertebrate samples were taken with the help of a bottom dredge from 4.2 to 12.0 m water depth, so it is likely that this species prefers deeper water zones. However, several individuals were also found in the littoral zone. The snail is apparently missing from the intermediate water zone temporarily inundated during higher discharges, which indicates the limited motion capability of this animal. The first finding from the Slovak section of the Danube comes from the village of Klížska Nemá (July 2019), but only recently was it verified with genetic data (for details see CSÁNYI et al. in press).

***Cochlodina dubiosa corcontica* Brabeneč, 1967**

One of only three endemic mollusc taxa in the Czech Republic. Its occurrence seems to be limited to the Krkonoše ("Giant Mts") and their foothills. No research had been carried out on this taxon since the 1970s until the revision by TLACHAČ et al. (2019). The taxonomic classification of *C. dubiosa corcontica* has always been problematic. Jaroslav Brabeneč critically evaluated the old data about *Cochlodina* in this region and described a new taxon for the Krkonoše. However, the phylogenetic status of this taxon remained unclear, especially with respect to the nominotypic subspecies *C. dubiosa dubiosa* (Clessin, 1882) and also a similar and probably closely related, syntopically occurring species *C. laminata* (Montagu, 1803). The separation of *C. dubiosa corcontica* from *C. dubiosa* as a geographical subspecies was made based on minor differences in the structure of the shell and the reproductive system (BRABENEČ 1967, NORDSIECK 1969). Regardless of the distinctive features of both subspecies, the intermediate forms are relatively common (both in the Krkonoše and the Alps); it is not clear whether they are hybrids or extreme morphotypes (NORDSIECK 1969). Moreover, intermediate individuals between *C. dubiosa corcontica* and *C. laminata* are not morphologically uniform but differ from each other. Phylogenetic analysis confirmed the presumed close relationship between *C. laminata* and *C. dubiosa* (NORDSIECK 1969). Within *C. dubiosa*, two clades are clearly distinguishable; one includes representatives of the Krkonoše populations – *C. dubiosa corcontica* –, and the other representatives of *C. dubiosa dubiosa* from the alpine locality near Bärenthal in Austria. The divergence between these two clades on the studied fragment of the 16S rRNA gene was 3%. This degree of variability is lower in comparison with other observed divergences among individual species of the genus *Cochlodina* and indicates the subspecies level of these two taxa. It was further tested whether mitochondrial DNA from transient morphotypes



Fig. 4. *Columella aspera* from the Hadí vrch NR, Staré město pod Landštějnem, CZ. Photo by R. Coufal.

between *C. dubiosa corcontica* and *C. laminata* indicates the possibility of hybridization between these taxa. Four representatives of such morphotypes were selected from two different Krkonoše localities (two from each locality). At both studied localities, the 16S rRNA haplotypes of the transient morphotypes corresponded exactly to the *C. laminata* or *C. dubiosa corcontica* that occurred at the same locality.

During the survey in the Krkonoše NP and its surroundings, *C. dubiosa corcontica* was found in 46 localities, of which 16 were new; in contrast, the occurrence was not confirmed in six previously known localities. It was most often found under the bark of dead trees in a suitable stage of decomposition (ideally with peeling bark). It was relatively rare in leaf litter or rotting wood. Preferred trees included mainly beech, sycamore, ash, and rowan. *Cochlodina dubiosa corcontica* does not occur in pure spruce forests. Its occurrence was often limited to a small patch within a larger forest complex and the home range probably does not exceed a few dm². Most of the occurrences were found between 600 and 800 m a. s. l., with the highest at 1300 m and the lowest at 325 m.

For the first time, some aspects of the species' biology were described. During the year, juveniles of all sizes are present, and their activity strongly depends on the weather, perhaps even more than on the time of year. The amount of precipitation in combination with the local microhabitat temperature is crucial. The onset of hibernation falls at the end of October or beginning of November and correlates

with cooling. Interestingly, the individuals were very active, even mating, for several days before entering hibernation. The growth rate of *C. dubiosa corcontica* varied considerably, even in the same locality. During the season, periods of activity alternate with rest periods, when they form an epiphragm due to deteriorating environmental conditions. Mating was observed during almost the entire season, from April 10 to October 28, with almost no mating at the end of May and during June. Mating takes longer than 12 hours. With one exception, only a single clutch was laid by each pair. Between 7 and 17 days after mating 8–15 eggs were laid, each somewhat larger than a millimetre. The hatching success was 81%.

The age of the *C. dubiosa corcontica* population in the Krkonoše and its separation from the Alpine nominotypic taxon remains an open question. By examining two mollusc successions in the area of crystalline limestones, we tried to find evidence of early occurrences of *C. dubiosa corcontica* in the Krkonoše Mts. However, in the Vodovodní valley near Maršov, this species was found only in the youngest layer, which is 540 years old, and in the Lánov quarry, fragments of representatives of the genus *Cochlodina* were obtained only from the upper two layers. However, the identification of this material remains uncertain (JUŘIČKOVÁ et al. 2014).

Cochlodina dubiosa corcontica is an important indicator species of natural Krkonoše beech forests, and its population is still in a good condition.



Fig. 5. *Cornu aspersum* from Žuljana town, HR. Photo by R. Coufal.

***Columella aspera* Waldén, 1966**

One of a few terrestrial snails in Europe that is associated with calcium-poor to acidic habitats such as spruce forests, most often found climbing blueberry plants (Fig. 4). It is common in the mountains in south-western and western Bohemia (Šumava, Brdy, Český les and Slavkovský les Mts) but rather rare in the north. Eastwards it reaches the Žďárské vrchy hills, with only a few occurrences in Moravia close to the Bohemian-Moravian border (HORSÁK et al. 2013, MYŠÁK & HLAVÁČ 2017). The new record in the Maštale NR near the town of Proseč (Pardubice region) pushes the limit of distribution in Moravia towards the east. Only two reliable records are known from Slovakia (HORSÁK et al. 2013).

***Corbicula fluminea* (O. F. Müller, 1774)**

The new records of this non-native bivalve from 2020 confirmed its gradual spread. In Bohemia, the findings in the rivers Ohře and Berounka document the gradual spread upstream. The most surprising was the record of *C. fluminea* from the river Svratka in Brno. The pathway of its introduction is unclear. The nearest known occurrence is the river Dyje more than 50 km away, where *C. fluminea* was found for the first time in 2019 (ČEJKA et al. 2020). We can only suppose that the occurrence in the Svratka is the result of an unintentional introduction by man or an introduction caused by migratory birds.

***Cornu aspersum* (O. F. Müller, 1774)**

Large helioid of Mediterranean origin (WELTER-SCHULTES 2012), currently known from several Central European cities as it is easily dispersed by human activities, such as horticulture (e.g. PÁLL-GERGELY et al. 2019) (Fig. 5). Since 2008 it is known to occur also in the Czech Republic and since 2015 in Slovakia. For a review of previous records see

ČEJKA et al. (2020). The new record for Slovakia comes from a garden in the town of Malacky. In the Czech Republic, one live individual was recorded also in a garden in the town of Stará Boleslav. Furthermore, a live juvenile individual was seen below the Špilberk castle in Brno. Later on, several living individuals were repeatedly observed nearby, suggesting an already established population. The last record comes from a new site in Prague (one live individual).

***Deroceras invadens* Reise, Hutchinson, Schunack & Schlitt, 2011**

In the previous issue of the Malacological news (ČEJKA et al. 2020), an error was made by claiming that the second outdoor record from the Czech Republic came from the town of Zlín. It is the second outdoor record from Moravia, but an earlier 2014 record was published by HUTCHINSON et al. (2014) from the town of Hrádek nad Nisou in northern Bohemia. Another record in northern Bohemia was made in the town of Frýdland in 2019.

***Deroceras rodnae* s. s. Grossu & Lupu, 1965**

To fully resolve the distribution of this slug still needs further research. It has appeared recently that more biological entities have been lumped under the name *D. rodnae* (see HORSÁK et al. 2013). One of them, *D. juranum*, has its eastern distribution limit in western Bohemia (ČEJKA et al. 2020). Several new anatomically verified records have been conducted in the Trutnov region, being the westernmost verified records of *D. rodnae* s.s. in the Czech Republic.

***Ferrissia californica* (Rowell, 1863)**

Non-native gastropod inhabiting slowly flowing and stagnant waters. It is becoming common especially in exten-



Fig. 6. *Krynickillus melanocephalus* from the vicinity of the village of Hervartov, Eastern Slovakia. Photo by B. Tej.

sive lowlands along the biggest rivers in the Czech Republic and Slovakia. Some notable records outside its known range in the Czech Republic (HORSÁK et al. 2020) were documented in 2020.

***Gyraulus parvus* (Say, 1817)**

The new record comes from a small branch of the Danube near the village of Dobrohošť (a section bypassing the Gabčíkovo waterworks) in southwestern Slovakia (two samples were identified by DNA barcoding, D. Szabóová det.). In August 2020, an abundant population was found in the Orava reservoir in northwestern Slovakia.

Current genetic investigation revealed that *G. parvus* and *G. laevis* are in fact part of the same species-level clade, with the former having nomenclatural priority (LORENCOVÁ et al. 2021). However, the structure within the mitochondrial tree suggests a North American origin of the invasive populations, earlier reported as *G. parvus*. It also suggests that although the native race in Europe, i.e. *G. laevis*, tends to possess some differences in conchology and ecology, the degree of overlap between the races makes it impossible to accurately distinguish between them without the DNA barcode data.

***Helix lucorum* Linnaeus, 1758**

New findings of the species come from Prague and Nitra. For more information about the species see ČEJKA et al. (2020).

***Hygromia cinctella* (Draparnaud, 1801)**

New findings of the species come from Prague and Bratislava. For more information about the species see ČEJKA et al. (2020).

***Krynickillus melanocephalus* Kaleniczenko, 1851**

Terrestrial slug that is native to the Caucasus and adjacent areas (see VON PROSCHWITZ 2020) (Fig. 6). Over the last decades, by means of man-mediated (anthropochorous) dispersal, it has spread westwards over the areas of the former USSR, Central, and Northern Europe. Its anthropochorous spread is described in detail by VON PROSCHWITZ (2020).

In September 2020, over 200 subadult and adult individuals were found near the village of Hervartov (NE Slovakia, Prešov Region), 30 m from the shoreline of the reservoir. In November, over 100 subadult and adult individuals were found at two other localities near the same village.

***Ladislavella occulta* (Jackiewicz, 1959)**

Aquatic species known only from two sites in the Czech Republic (BERAN 2002, 2008) and one site in Slovakia (ČEJKA et al. 2020). The continued existence of the two known small populations in the Czech Republic was confirmed also in 2020.

***Limacus flavus* (Linnaeus, 1758)/*Limacus maculatus* (Kaleniczenko, 1851)**

These two entities may not represent separate species (see ČEJKA et al. 2020 for details), therefore, they are considered as single species here. A slug with main area of distribution presumably in the Mediterranean area, nowadays widely distributed in Europe with reported occurrences from Chile, Canary Islands, South Africa, Ukraine, and China (WIKTOR et al. 2000, WELTER-SCHULTES 2012, BALASHOV & GURAL-SVERLOVA 2012). The already known occurrences of this species in the Czech and Slovak Republics along with nomenclature difficulties are described in ČEJKA et al. (2020). Facebook user Karla Greé reported



Fig. 7. *Limacus flavus* from Žuljana town, HR. Photo by R. Coufal.

the nocturnal occurrence of three individuals under and around a trough with chives in her garden in the town of Lužice near Hodonín. The identification was made by one of the authors based on available photographs (Fig. 7).

***Macrogaster badia* (C. Pfeiffer, 1828)**

Eastern Alpine species with isolated populations in the Czech Republic. Its localities are concentrated in the northern part of the Šumava Mts, where they form an isolated island together with an occurrence on the Bavarian side (HLAVÁČ & HORSÁK 2002, HLAVÁČ 2010). Between 2008 and 2010, more localities were found in the Orlické hory Mts (Fig. 8), from where it reaches northwards to the Broumov region, where it was recorded in 2012 by the village of Machov on the northern slope of the hill Bor, and eastwards to a single locality in the Czech part of the Kralický Sněžník Mts (HORSÁK et al. 2013). The new locality from the Černý důl NR confirms the continuing occurrence of the species in the Orlické hory Mts.

***Monacha cartusiana* (O. F. Müller, 1774)**

New records of the species come from thermophytic north-western and central parts of Bohemia, but completely new sites outside of its previously known range were recorded also in southern Bohemia (Fig. 9). The material was not identified by dissection or DNA analysis to distinguish the species *M. claustralis*.

For more information about the species see ČEJKA et al. (2020).

***Oxychilus alliarius* (Miller, 1822)**

This species lives in the leaf litter of deciduous forests in isolated populations in Bohemia at the limit of its European distribution. Its populations are quite scattered and it is known only from six sites in western Bohemia (HORÁČKOVÁ & JUŘIČKOVÁ 2009). The new finding of this species by the town of Hranice is the westernmost occurrence within the Czech Republic, on its western border with Germany.

***Oxychilus inopinatus* (Uličný, 1887)**

Small terricolous species (only up to 5.6 mm) living in the upper soil layer of steppe sites in the thermophytic parts of the Czech Republic (Labe and Ohře river lowlands in Bohemia and southern Moravia). It probably reached both countries from the south during the Neolithic period as the first non-native snail species in cultivated areas (HORSÁK et al. 2013). The new finding from Hostomice (western Bohemia) represents the westernmost known occurrence in the Czech Republic.

***Perforatella bidentata* (Gmelin, 1791)**

Hygrophilous species, living in floodplains and wet valleys or ravines. It has a scattered occurrence at lower and medium altitudes in the northern part of Bohemia (more frequent in Moravia and Slovakia; HORSÁK et al. 2013). Many localities are known from floodplains and valleys of rivers and streams. However, its occurrence in the strongly agricultural landscape of central Bohemia is quite surprising. It was recorded there in a protected area (Údolí Hasiny u Lipence NR) with a preserved natural floodplain of a stream with floodplain forests and flooded meadows, where probably one of its few abundant populations in this part of an agricultural landscape has been preserved.

***Pisidium globulare* Clessin, 1873**

This pea mussel occupies mostly shallow wetlands and pools rich in vegetation. Some new sites for this rare and endangered species were found in 2020 in the Czech Republic.

For more information about the species see ČEJKA et al. (2020).

***Pisidium hibernicum* Westerlund, 1894**

This rare species, reported usually from ponds, streams or rivers, was found in two new sites in southern Bohemia in 2020.

For more information about the species see ČEJKA et al. (2020).

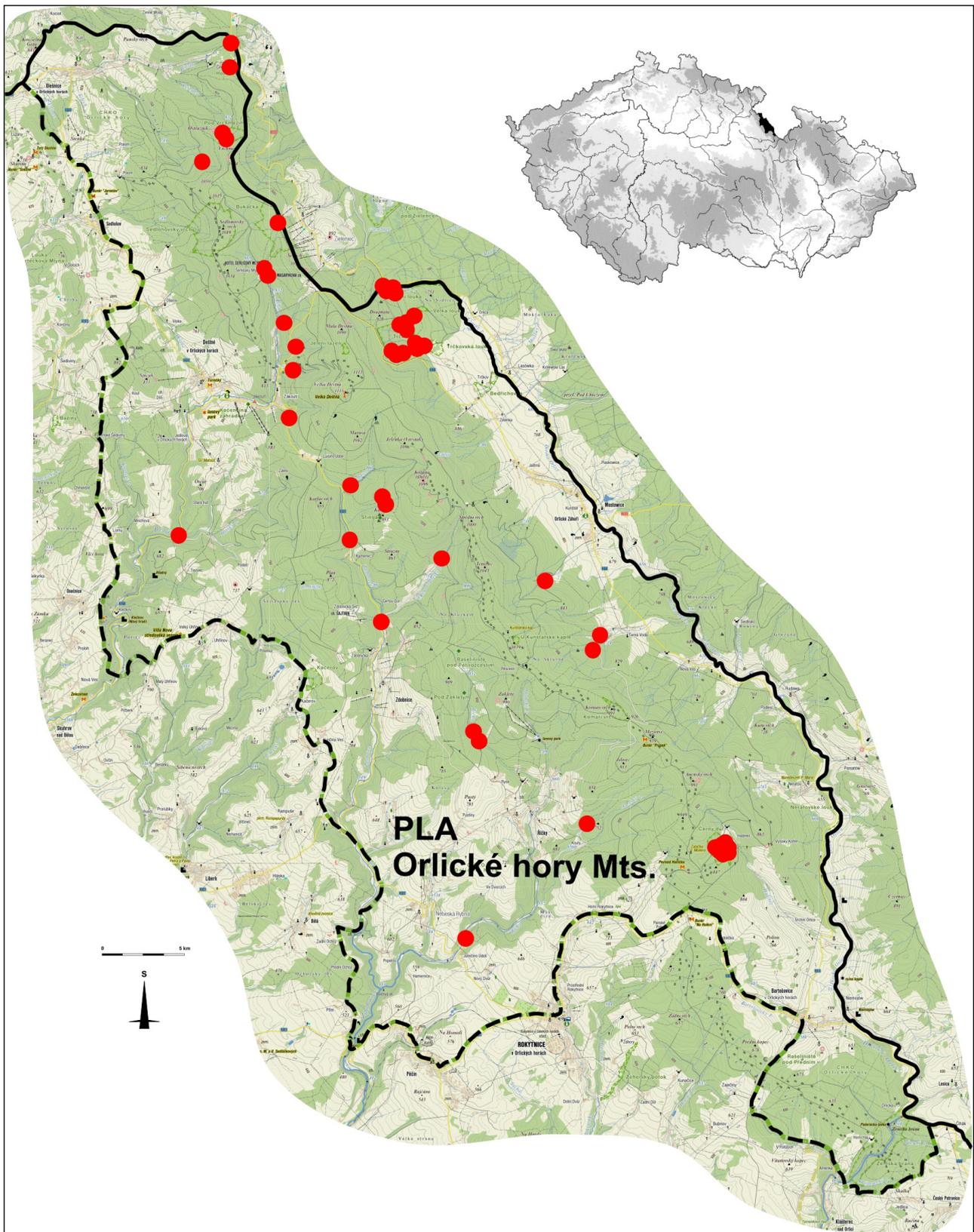


Fig. 8. Distribution of *Macrogastera badia* in the Orlické hory Protected Landscape Area, CZ (J. Č. Hlaváč del.).

***Pisidium tenuilineatum* Stelfox, 1918**

Critically endangered species in the Czech Republic (BERAN et al. 2017) and Slovakia (ŠTEFFEK & VAVROVÁ 2006), living mostly in smaller watercourses with fine sediments. In 2020 its occurrence was confirmed in the Liběchovka, a stream in the Kokořínsko – Máchův kraj PLA.

For more information about the species see Čejka et al. (2020).

***Potamopyrgus antipodarum* (Gray, 1843)**

An abundant population was found in the Orava reservoir in the northwestern part of Slovakia in 2020. This



Fig. 9. *Monacha cartusiana* from Olomouc, CZ. Photo by R. Coufal.

site is outside of its previously known range in Slovakia (HORSÁK et al. 2020).

For more information about the species see ČEJKA et al. (2020).

***Pseudanodonta complanata* (Rossmässler, 1835)**

Rare species in the Czech Republic, where it lives mostly in rivers (e.g. BERAN 2002, 2019). The occurrence of this clam in the river Orlice was confirmed in 2020. The finding in the river Labe near Mělník in 2020 has been the first record in the section of this river in central Bohemia since 1950.

For more information about the species see ČEJKA et al. (2020).

***Pyramidula saxatilis* (Hartmann, 1842)**

New populations were confirmed from three additional sites in the Velká Fatra Mts and for the first time also from the Súľovské skaly NNR in the Strážovské vrchy PLA (collected in 2014, but genetically identified in 2020) and the Slovenský raj NP.

For more information about the species see ČEJKA et al. (2020).

***Radix lagotis* (Schrank, 1803)**

This species is hardly distinguished from *R. balthica* and its distribution has not been well known. It seems to be widely distributed in Europe and Western Siberia but genetically validated records are still known only from a few countries. BARGUES et al. (2001) distinguished Czech and Austrian *R. lagotis* from the other *Radix* species occurring in Europe for the first time (SCHNIEBS et al. 2015). In 2020 this species was confirmed from several sites in the Czech Republic and Slovakia in different stagnant waters

(sandpits, ponds, water reservoirs). The identification of selected specimens was checked by K. Schniebs.

***Semilimax kotulae* (Westerlund, 1883)**

Characteristic inhabitant of cold and wet mountain areas, reaching high into the alpine zone. It lives in the leaf litter of different forest types and under the bark of fallen or dying trees. Common in the mountains throughout both countries, with isolated occurrence in cold inversion habitats at lower altitudes (HORSÁK et al. 2013) such as in the following site. Its occurrence in the České Středohoří PLA was not known until 2020, although this area is one of the most malacologically explored parts of Central Europe (HORÁČKOVÁ et al. 2018). The species was found in a protected natural deciduous talus forest (Stříbrný roh NR) where it was recorded in the leaf litter samples and also on dead wood amongst stone rubble. The locality lies at only 500 m a. s. l. However, the specific microclimatic conditions of the steep talus slopes resemble mountain beech forests of the Czech borderland mountains where *S. kotulae* is common.

***Sinanodonta woodiana* (Lea, 1834)**

Non-native species recently spreading rapidly. This mussel inhabits mostly fishponds, reservoirs and rivers. Some new sites were found in 2020, with notable records from the river Odra in Silesia, suggesting a rapid spread in this river.

For more information about the species see ČEJKA et al. (2020).

***Sphaerium nucleus* (Studer, 1820)**

This species inhabits mostly overgrown standing waters in lowlands, and its distribution is not yet sufficiently known.



Fig. 10. Variability of *Zebra detrita* from the Prokopské údolí Nature Reserve, CZ. Photo by M. Šafka.

New records come mostly from within its areas of known occurrence, e.g. from the floodplain of the rivers Dyje and Morava (southeastern Moravia) or the floodplain of the river Odra. Its occurrence was also confirmed in an isolated small lake in the České středohoří PLA.

For more information about the species see ČEJKA et al. (2020).

***Subulina striatella* (Rang, 1831)**

A new population of this species was found in the tropical pavilion in Zlín zoo.

For more information about the species see ČEJKA et al. (2020).

***Tandonia kusceri* (Wagner, 1931)**

New records of the species were reported from the town of Stupava, SW Slovakia (samples were identified by DNA barcoding). For more information about the species see ČEJKA et al. (2020).

***Unio crassus* Philipsson, 1788**

Some valuable records of this endangered unionid were documented in 2020 in the Czech Republic. In the reg-

ularly monitored population in the artificial canal of the river Bečva in Vsetín a density of 510 specimens/m² was recorded. This is the highest known density of this species in the Czech Republic, more than two times higher than the density reported by BERAN (2019). The existence of a small population of *U. crassus* was confirmed in the river Jihlava and this species was also found in the river Morava in the Litovelské Pomoraví PLA. Some live specimens of *U. crassus* were also found in the lower section of the river Bečva after poisoning caused by cyanides, resulting in a mass die-off of fish while the numerous populations living in the artificial canal of the Bečva (Strhanec) was not affected because the flow of water through the canal was stopped during this catastrophe. For more information about the species see ČEJKA et al. (2020).

***Vertigo moulinsiana* (Dupuy, 1849)**

Two new populations of this rare and endangered species, listed in the EU Habitats Directive (92/43/EEC), were found in southeastern Moravia, in the Bílé Karpaty PLA and Hodonín region. For more information about the species see ČEJKA et al. (2020).

***Viviparus acerosus* (Bourguignat, 1862)**

New records of this species were reported from the Orava reservoir in northwestern Slovakia. This site is situated at least 150 km from its previously known range. For more information about the species see ČEJKA et al. (2020).

***Zebrina detrita* (O. F. Müller, 1774)**

An accidental finding of empty shells of the species on the rocky steppe in the Prokopské údolí NR in Prague in 2019 was confirmed by re-collection in 2020. A rich population was documented by hand collecting and soil-litter sieving (5 dm³ mixture sample from 15×15 m area). In total, 12 living individuals (8 adults, 4 juveniles) and 46 empty shells were found (Fig. 10). For more information about the species see ČEJKA et al. (2020).

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Table 1. Location data of the newly discovered occurrences reported herein.

Species; live/empty; Nearest municipality; Coordinates (°N, °E); Location (briefly) and habitat; Date of coll.; Altitude; leg./det.
<i>Aegopinella nitidula</i> (Draparnaud, 1805); 19/16; Jezvě; 50.7047, 14.4360; alder carr by the Radečský Brook floodplain; 22. 3. 2020; 249; J. Horáčková
<i>Aegopinella nitidula</i> (Draparnaud, 1805); 17/21; Kerhartice; 50.7674, 14.3903; alder carr by a brook; 11. 4. 2020; 307; J. Horáčková
<i>Ambigolimax valentianus</i> (A. Férussac, 1821); 1; Bratislava; 48.1513, 17.0314; Karlova Ves District, outdoors of the horticultural center Agapé; 30. 4. 2020; 140; J. Čapka leg., T. Čejka det.
<i>Anisus vorticulus</i> (Troschel, 1834); 6/0; Lanžhot; 48.6910, 16.9449; oxbow W of the Kyjovka River; 20. 6. 2020; 153; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 12/0; Lanžhot; 48.6922, 16.9465; stagnant channel W of the Kyjovka River; 20. 6. 2020; 153; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 4/0; Lanžhot; 48.6977, 16.9465; small channel W of the Kyjovka River; 20. 6. 2020; 153; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 2/0; Lanžhot; 48.7266, 16.9962; W part of the pool E of Lanžhot; 6. 11. 2020; 146; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 3/0; Kostice; 48.7404, 16.9963; oxbow 1 km E from Kostický rybník Pond; 6. 11. 2020; 146; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 80/0; Libice nad Cidlinou; 50.1196, 15.1629; restored pool in the N edge of the Libický luh NNR (after repatriation); 17. 6. 2020; 190; L. Beran
<i>Anisus vorticulus</i> (Troschel, 1834); 60/0; Libice nad Cidlinou; 50.1200, 15.1621; the new pool in the N edge of the Libický luh NNR (after repatriation); 17. 6. 2020; 190; L. Beran
<i>Anodonta cygnea</i> (Linnaeus, 1758); 1/0; Námestovo; 49.4106, 19.5052; Orava Reservoir by the Studnička hotel; 3. 8. 2020; 600; L. Beran
<i>Aplexa hypnorum</i> (Linnaeus, 1758); 3/0; Zubrohlava; 49.4214, 19.5142; N cove of the Orava Reservoir to S of Zubrohlava; 5. 8. 2020; 600; L. Beran
<i>Arion circumscriptus</i> Johnston, 1828; 1/0; Želenice; 50.5274, 13.7172; alder carr by the Bílina River floodplain; 18. 4. 2020; 215; J. Horáčková
<i>Arion intermedius</i> Normand, 1852; 2; Bratislava; 48.1594, 17.0520; Karlova Ves District, Church of St. Francis of Assisi, St. Francis Square, on the cut flowers inside the church; 30. 7. 2020; 200; J. Čapka leg., D. Szabóová det.
<i>Arion intermedius</i> Normand, 1852; 43863; Lázně Kynžvart; 49.9990, 12.6539; swampy mixed forest on a stream by the Liščí pramen Spring; 18. 9. 2020; 650; L. Dvořák
<i>Arion intermedius</i> Normand, 1852; 43831; Kladská; 50.0273, 12.6683; swampy forest on Pramenský potok Brook by a parking place; 29. 7. 2020; 815; L. Dvořák leg. et det., M. Horsák revid. anatom.
<i>Arion intermedius</i> Normand, 1852; 2/0; Mladé Buky; 50.5809, 15.8403; alder carr by a brook in the Peklo valley, by the Hrádeček NP; 26. 6. 2020; 400; M. Horsák et al. lgt., M. Horsák det.
<i>Arion intermedius</i> Normand, 1852; 2/0; Kamenický Šenov; 50.7816, 14.4795; talus forest at the Šenovský vrch; 10. 4. 2020; 563; J. Horáčková
<i>Arion intermedius</i> Normand, 1852; 1/0; Kamenický Šenov; 50.7825, 14.4824; České středohoří Mts. PLA, Šenovský vrch; 10. 4. 2020; 600; J. Horáčková
<i>Arion obesoductus</i> Reischütz, 1973; 3/0; Bílá Třemešná; 50.4213, 15.7536; swampy forest a pond 740 m SW of the Čertovy hrady NM; 27. 6. 2020; 419; M. Horsák et al. lgt., M. Horsák det.
<i>Arion obesoductus</i> Reischütz, 1973; 10/0; Bílá Třemešná; 50.4247, 15.7622; Čertovy hrady NM, the sandstone rocky outcrops SE of the village; 27. 6. 2020; 462; M. Horsák et al. lgt., M. Horsák det.
<i>Bythinella austriaca</i> (von Frauenfeld, 1857); 30/0; Javorník; 49.8857, 16.1472; spring by a small reservoir on the V Dílcích Street; 3. 9. 2020; 405; M. Horsák
<i>Bythinella austriaca</i> von Frauenfeld, 1857; 8/0; Zderaz; 49.8321, 16.1159; rivulet upstream its junction with the Prosečský potok Brook; 1. 11. 2020; 395; L. Beran
<i>Cepaea nemoralis</i> (Linnaeus, 1758); 1/0; Bratislava; 48.1413, 17.0911; River Park Offices (Embankment of Army General L. Svoboda), a small space between buildings with lawn, ivy and several trees; 10. 10. 2020; 140; V. Janský leg., J. Čačaný det.

<i>Chondrula tridens</i> (O. F. Müller, 1774); 44535; Volevčice; 50.4281, 13.7012; dry grasslands at the Velká Volavka Hill; 3. 5. 2020; 344; J. Horáčková
<i>Clathrocaspia knipowitschii</i> (Makarov, 1938); ?; Klížska Nemá; 47.7427, 17.8239; gravelly sandy shoreline at left bank of the Danube River; 1. 7. 2019; 109; B. Csányi et al.
<i>Cochlodina dubiosa corcontica</i> Brabenec, 1967; 2/0; Červená Třemošná; 50.4016, 15.6632; Miletínská bažantnice NR, alluvial forest by the largest pond; 27. 6. 2020; 424; M. Horský et al. lgt., M. Horský det.
<i>Cochlodina dubiosa corcontica</i> Brabenec, 1967; 10/0; Mladé Buky; 50.5809, 15.8403; alder carr by a brook in the Peklo valley, by the Hrádeček NP; 26. 6. 2020; 400; M. Horský et al. lgt., M. Horský det.
<i>Cochlodina dubiosa corcontica</i> Brabenec, 1967; 3/0; Mladé Buky; 50.5852, 15.8519; beech forest SE of the village, near Peklo Valley; 26. 6. 2020; 443; M. Horský et al. lgt., M. Horský det.
<i>Cochlodina dubiosa corcontica</i> Brabenec, 1967; 8/0; Mladé Buky; 50.5866, 15.8297; beech forest near the Brečštejn castle ruin and Hrádeček NM; 26. 6. 2020; 490; M. Horský et al. lgt., M. Horský det.
<i>Columella aspera</i> Waldén, 1966; 15/0; Bor u Skutče; 49.8180, 16.1365; Maštale NR, Za Borky, open pine forest 280 m SW of the Toulcovy maštale sandstone rock formations; 2. 9. 2020; 475; M. Horský
<i>Corbicula fluminea</i> (O. F. Müller, 1774); 43834; Brno; 49.1909, 16.5676; Svratka River by the Anthropos museum, Pisárky, attached to stones by <i>Hydropsyche</i> larvae; 20. 5. 2020; 220; M. Horský
<i>Corbicula fluminea</i> (O. F. Müller, 1774); 23/0; Radotín; 49.9813, 14.3635; Berounka River downstream of the inflow of the Radotínský potok Stream; 28. 11. 2020; 195; L. Beran
<i>Corbicula fluminea</i> (O. F. Müller, 1774); 35/0; Radotín; 49.9845, 14.3697; Berounka River ca 500 m downstream of the inflow of the Radotínský potok Stream; 28. 11. 2020; 195; L. Beran
<i>Corbicula fluminea</i> (O. F. Müller, 1774); 0/100; Libochovice; 50.4021, 14.0420; Odra River; 5. 7. 2020; 165; R. Čablová leg., J. Horáčková det.
<i>Corbicula fluminea</i> (O. F. Müller, 1774); 200/0; Žabovřesky nad Ohří; 50.4074, 14.0914; Odra River; 18. 7. 2020; 155; L. Beran
<i>Cornu aspersum</i> (O. F. Müller, 1774); 3/0; Malacky; 48.4290, 17.0195; garden at the Štúrova Street; 1. 8. 2020; 164; R. Jelínek leg., J. Čačány det.
<i>Cornu aspersum</i> (O. F. Müller, 1774); 43875; Brno; 49.1926, 16.5957; lawn with <i>Aesculus hippocastanus</i> on the Úvoz Street, below Špilberk castle and adjacent Pivovarská Street; 2. 11. 2020; 215; R. Coufal
<i>Cornu aspersum</i> (O. F. Müller, 1774); 1/0; Brno; 49.1951, 16.5949; stone wall on the Úvoz Street, below Špilberk castle; 16. 10. 2020; 225; R. Vlček
<i>Cornu aspersum</i> (O. F. Müller, 1774); 1; Prague; 50.0713, 14.4257; stone wall on the Apolinářská Street; 3. 12. 2020; 234; D. Říhová
<i>Cornu aspersum</i> (O. F. Müller, 1774); 1/0; Stará Boleslav; 50.2022, 14.6804; garden on the V Mýtkách Street; 26. 8. 2020; 170; P. Dolejš
<i>Deroceras invadens</i> Reise, Hutchinson, Schunack & Schlitt, 2011; 1; Frýdlant; 50.9208, 15.0810; ČSA Street, beside a small patch of grass at the side of the pavement, but GoogleEarth StreetView shows that in warmer weather the shop alongside puts out pot plants for sale there; 18. 2. 2019; 280; J. Hutchinson
<i>Deroceras rodnae</i> s.s. Grossu & Lupu, 1965; 1/0; Kal; 50.4565, 15.6350; Kalské údolí NM, SE of the village; 44009; 404; M. Horský et al. lgt., M. Horský det.
<i>Deroceras rodnae</i> s.s. Grossu & Lupu, 1965; 2/0; Debrné; 50.4775, 15.7320; clearing with <i>Reynoutria</i> sp. at the Elbe River shore by the mouth of the Černý potok Brook; 25. 6. 2020; 340; L. Juříčková et al. leg., M. Horský det.
<i>Deroceras rodnae</i> s.s. Grossu & Lupu, 1965; 4/0; Hostinné; 50.5362, 15.7325; slope forest S margin of the town; 44007; 355; L. Juříčková et al. leg., M. Horský det.
<i>Deroceras rodnae</i> s.s. Grossu & Lupu, 1965; 2/0; Mladé Buky; 50.5866, 15.8297; beech forest near the Brečštejn castle ruin and Hrádeček NM; 26. 6. 2020; 490; M. Horský et al. lgt., M. Horský det.
<i>Ferrissia californica</i> (Rowell, 1863); 120/0; Dolní Příbrání; 48.6336, 14.6016; small pond S of Dolní Příbrání; 23. 8. 2020; 798; K. Beran leg., L. Beran det.
<i>Ferrissia californica</i> (Rowell, 1863); 3/0; Kouty; 49.6347, 15.3013; Kouty Pond; 5. 3. 2020; 545; L. Beran
<i>Ferrissia californica</i> (Rowell, 1863); 2/0; Částovice; 49.6517, 14.9178; Machlov Pond; 12. 4. 2020; 450; J. Beran, L. Beran
<i>Ferrissia californica</i> (Rowell, 1863); 1/0; Bor u Skutče; 49.8224, 16.1268; rich submerse vegetation in the pond littoral in the village centre; 2. 9. 2020; 470; M. Horský
<i>Ferrissia californica</i> (Rowell, 1863); 16/0; Miletín; 50.4012, 15.6623; Povolír Pond; 27. 6. 2020; 315; L. Beran

<i>Gyraulus parvus</i> (Say, 1817); 44001; Dobrohošť; 47.9727, 17.3668; restored river branch 900 m from the village of Dobrohošť; 23. 6. 2020; 124; J. Čačany leg., J. Čačany, D. Szabová det.
<i>Gyraulus parvus</i> (Say, 1817); 40/0; Trstená; 49.3835, 19.5814; small cove of the Orava Reservoir in Ústie nad Priehradou; 5. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 60/0; Trstená; 49.3865, 19.5985; E cove of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 120/0; Námestovo; 49.3969, 19.4806; W cove of the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 300/0; Námestovo; 49.4004, 19.5149; Orava Reservoir by the ferry to island; 3. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 250/0; Námestovo; 49.4051, 19.4862; Orava Reservoir by a skate park; 5. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 70/0; Námestovo; 49.4064, 19.5190; E edge of the island in the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 60/0; Námestovo; 49.4071, 19.5148; W edge of the island in the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 3/0; Trstená; 49.4083, 19.5942; E bank of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 250/0; Námestovo; 49.4106, 19.5052; Orava Reservoir by the Studnička hotel; 3. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 200/0; Bobrov; 49.4204, 19.5326; N cove of the Orava Reservoir to SW of Bobrov; 5. 8. 2020; 600; L. Beran
<i>Gyraulus parvus</i> (Say, 1817); 130/0; Zubrohlava; 49.4214, 19.5142; N cove of the Orava Reservoir to S of Zubrohlava; 5. 8. 2020; 600; L. Beran
<i>Helix lucorum</i> Linnaeus, 1758; 10/3; Nitra; 48.3028, 18.0906; Moyzesova Street, in the lawn and on the sidewalk in a residential area; 22. 4. 2020; 138; P. Purgat leg., T. Čejka det.
<i>Helix lucorum</i> Linnaeus, 1758; 1/2; Prague; 50.1148, 14.3809; Nad lesíkem Street, No. 22, on the sidewalk in a residential area and in the garden; 13. 3. 2020; 274; H. Kříženecká leg., D. Říhová det.
<i>Hygromia cinctella</i> (Draparnaud, 1801); 7/2; Bratislava; 48.1513, 17.0314; Karlova Ves District, horticultural center Agapé; 30. 4. 2020; 142; J. Čapka leg., T. Čejka det.
<i>Hygromia cinctella</i> (Draparnaud, 1801); 1; Prague; 50.0695, 14.4285; Ke Karlovu 3, on a stone wall in front of the FMP building; 29. 9. 2020; 237; D. Říhová
<i>Hygromia cinctella</i> (Draparnaud, 1801); 4/0; Prague; 50.1143, 14.4111; ruderal vegetation in the Povltavská Street, by a ZOO parking lot; 4. 12. 2020; 182; O. Korábek
<i>Krynickyllus melanocephalus</i> Kaleniczenko, 1851; 202; Hervartov; 49.2507, 21.2322; shrubs 30 m from the water reservoir shoreline; 26. 9. 2020; 350; B. Tej leg., T. Čejka det.
<i>Krynickyllus melanocephalus</i> Kaleniczenko, 1851; 31; Hervartov; 49.2547, 21.2342; shrubs between two agricultural fields; 12. 11. 2020; 350; B. Tej
<i>Krynickyllus melanocephalus</i> Kaleniczenko, 1851; 82; Klůšov; 49.2569, 21.2344; shrubs at the edge of meadow; 10 m from river; 12. 11. 2020; 350; B. Tej
<i>Ladislavella occulta</i> (Jackiewicz, 1959); 8/0; Lanžhot; 48.6622, 16.9520; small ditch 600 m NE from the Ruské domky Pond; 20. 6. 2020; 152; L. Beran
<i>Ladislavella occulta</i> (Jackiewicz, 1959); 5/0; Kolesa; 50.0807, 15.4801; small pool by the road; 25. 4. 2020; 221; L. Beran
<i>Limacus flavus</i> (Linnaeus, 1758); 3; Lužice (Hodonín); 48.8355, 17.0705; garden of the house on the SE outskirts of the village; 15. 5. 2020; 200; K. Greč leg., R. Coufal det.
<i>Macrogastra badia</i> (C. Pfeiffer, 1828); 44235; Rokytnice v Orlických horách; 50.2002, 16.5207; fir-beech forest in the Černý důl NR in Orlické hory PLA; 11. 5. 2020; 805; T. Kosová
<i>Monacha cartusiana</i> (O. F. Müller, 1774); 44048; Strakonice; 49.2559, 13.9176; small park with ruderal vegetation on the U Nádraží Street; 22. 9. 2020; 399; V. Hrdlička, E. Legátová
<i>Monacha cartusiana</i> (O. F. Müller, 1774); 43849; Horažďovice-Předměstí; 49.3314, 13.7389; ruderal habitat and the wall of the building in the Horažďovice-Předměstí Railway Station; 12. 9. 2020; 440; E. Legátová

<i>Monacha cartusiana</i> (O. F. Müller, 1774); 44480; Zájezd (by Buštěhrad); 50.1671, 14.2219; ruderal vegetation at the outskirts of the Zájezd village; 5. 9. 2020; 287; J. Horáčková
<i>Monacha cartusiana</i> (O. F. Müller, 1774); 44391; Bečov (by Most); 50.4534, 13.7080; ruderal vegetation at the outskirts of the Bečov town; 1. 3. 2020; 231; J. Horáčková
<i>Monacha cartusiana</i> (O. F. Müller, 1774); 44295; Bedřichův Světec; 50.4568, 13.7544; ruderal vegetation by the road from Bedřichův Světec to Skršín; 11. 10. 2020; 297; J. Horáčková
<i>Oxychilus alliarius</i> (Miller, 1822); 44201; Pastviny; 50.2770, 12.1410; talus forest and ravines with ruins of old buildings by the Lužní Brook; 15. 10. 2020; 588; J. Horáčková
<i>Oxychilus inopinatus</i> (Uličný, 1887); 0/1; Hostomice; 50.5889, 13.8158; Husův vrch NM; 17. 4. 2020; 211; J. Horáčková
<i>Perforatella bidentata</i> (Gmelin, 1791); 26/18; Lipenec; 50.3152, 13.6936; brook floodplain and alder carr in the Údolí Hasiny u Lipence NM; 19. 4. 2020; 218; J. Horáčková
<i>Perforatella bidentata</i> (Gmelin, 1791); 27/19; Jezvé; 50.7047, 14.4360; alder carr by the Radečský Brook floodplain; 22. 3. 2020; 249; J. Horáčková
<i>Psidium globulare</i> Clessin, 1873; 6/0; Lanžhot; 48.7268, 16.9959; sedge marshes by the oxbow E of Lanžhot; 6. 11. 2020; 146; L. Beran
<i>Psidium globulare</i> Clessin, 1873; 12/0; Nová Ves nad Lužnicí; 48.8129, 14.9311; oxbow on the S edge of the Horní Lužnice NR; 3. 10. 2020; 470; J. Beran, L. Beran
<i>Psidium globulare</i> Clessin, 1873; 7/0; Nová Ves nad Lužnicí; 48.8301, 14.9280; temporary pool in the Horní Lužnice NR; 9. 8. 2020; 460; J. Beran, L. Beran
<i>Psidium globulare</i> Clessin, 1873; 16/0; Vlčí Důl; 50.6635, 14.6194; temporary wetland in alder carrs by the Ploučnice River; 16. 9. 2020; 260; L. Beran
<i>Psidium hibernicum</i> Westerlund, 1894; 4/0; Bor; 48.8908, 14.8028; Borský rybník Pond; 12. 9. 2020; 465; K. Beran leg., L. Beran det.
<i>Psidium hibernicum</i> Westerlund, 1894; 5/0; Suchdol nad Lužnicí; 48.8933, 14.8881; Černý potok Brook upstream the junction with Lužnice River; 18. 1. 2020; 445; K. Beran leg., L. Beran det.
<i>Psidium tenuilineatum</i> Stelfox, 1918; 8/0; Tupadly; 50.4436, 14.4719; Liběchovka Stream; 14. 5. 2020; 180; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 6/0; Trstená; 49.3835, 19.5814; small cove of the Orava Reservoir in Ústie nad Priehradou; 5. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 3/0; Trstená; 49.3865, 19.5985; E cove of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 23/0; Námestovo; 49.4004, 19.5149; Orava Reservoir by the ferry to island; 3. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 14/0; Námestovo; 49.4064, 19.5190; E edge of the island in the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 8/0; Námestovo; 49.4071, 19.5148; W edge of the island in the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 2/0; Trstená; 49.4083, 19.5942; E bank of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 6/0; Bobrov; 49.4204, 19.5326; N cove of the Orava Reservoir to SW of Bobrov; 5. 8. 2020; 600; L. Beran
<i>Potamopyrgus antipodarum</i> (Gray, 1843); 10/0; Zubrohlava; 49.4214, 19.5142; N cove of the Orava Reservoir to S of Zubrohlava; 5. 8. 2020; 600; L. Beran
<i>Pseudanodonta complanata</i> (Rossmässler, 1835); 0/1; Hradec Králové; 50.2109, 15.8620; Orlice River; 8. 9. 2020; 230; L. Beran
<i>Pseudanodonta complanata</i> (Rossmässler, 1835); 0/2; Křivenice; 50.4103, 14.4325; Labe River; 15. 5. 2020; 161; V. Beran leg., L. Beran det.
<i>Pyramidula saxatilis</i> (Hartmann, 1842); 2/0; Dolný Harmanec; 48.8189, 19.0444; dolomite rocks 400 m E of the Horný Hartmanec parking lot; 20. 7. 2020; 590; R. Coufal, K. Kubíková, L. Juříčková
<i>Pyramidula saxatilis</i> (Hartmann, 1842); 20/0; Motyčky; 48.8648, 19.1636; limestone rocks in the Šturce valley mouth; 19. 7. 2020; 680; R. Coufal, K. Kubíková, L. Juříčková
<i>Pyramidula saxatilis</i> (Hartmann, 1842); 18/0; Dedinky; 48.8754, 20.3283; shaded limestone rocks in the Stratenský kaňon Gorge; 13. 9. 2020; 835; R. Coufal leg., M. Horsák det.

<i>Pyramidula saxatilis</i> (Hartmann, 1842); 40/0; Motyčky; 48.8818, 19.1626; limestone rocks at the SE slope of the Šturce hill; 19. 7. 2020; 960; R. Coufal, K. Kubíková, L. Juříčková
<i>Pyramidula saxatilis</i> (Hartmann, 1842); 20/0; Bytča; 49.1861, 18.6076; Súľovské skály NNR, exposed limestone rocks below Roháč fork; 22. 6. 2014; 718; M. Horsák
<i>Radix lagotis</i> (Schränk, 1803); 17/0; Lanžhot; 48.6333, 16.9597; Dědova pískovna Sandpit near the confluence of Morava and Dyje Rivers; 20. 6. 2020; 164; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 23/15; Hlohovec; 48.7726, 16.7961; small pond 250 m S from the Chrám Tří Grácií Temple; 44122; 180; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 6/0; Trstená; 49.3835, 19.5814; small cove of the Orava Reservoir in Ústie nad Priehradou; 5. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 35/0; Trstená; 49.3865, 19.5985; E cove of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 35/0; Námestovo; 49.3969, 19.4806; W cove of the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 5/0; Námestovo; 49.4004, 19.5149; Orava Reservoir by the ferry to island; 3. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 18/0; Námestovo; 49.4051, 19.4862; Orava Reservoir by a skate park; 5. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 7/0; Námestovo; 49.4064, 19.5190; E edge of the island in the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 4/0; Bobrov; 49.4204, 19.5326; N cove of the Orava Reservoir to SW of Bobrov; 5. 8. 2020; 600; L. Beran
<i>Radix lagotis</i> (Schränk, 1803); 35/0; Předonín; 50.4461, 14.3245; sandpit in Předonín; 28. 7. 2020; 150; L. Beran
<i>Semilimax kotulae</i> (Westerlund, 1883); 44198; Těchlovice; 50.6841, 14.2163; deciduous forest on the talus slope in the Stříbrný roh NR; 8. 5. 2020; 496; J. Horáčková
<i>Sinanodonta woodiana</i> (Lea, 1834); 0/2; Blansko; 49.3641, 16.6470; Zámecký rybník Pond in Blansko; 4. 2. 2020; 276; L. Beran
<i>Sinanodonta woodiana</i> (Lea, 1834); 7/0; Studénka; 49.7072, 18.0852; Odra River; 9. 5. 2020; 220; L. Beran
<i>Sinanodonta woodiana</i> (Lea, 1834); 6/0; Studénka; 49.7074, 18.0883; Odra River; 9. 5. 2020; 220; L. Beran
<i>Sinanodonta woodiana</i> (Lea, 1834); 3/0; Březi; 49.8286, 12.6411; Velký Břežský rybník Pond; 43951; 545; L. Beran
<i>Sphaerium nucleus</i> (Studer, 1820); 13/0; Lanžhot; 48.7268, 16.9959; sedge marshes by the oxbow E of Lanžhot; 6. 11. 2020; 146; L. Beran
<i>Sphaerium nucleus</i> (Studer, 1820); 2/0; Kostice; 48.7404, 16.9963; oxbow E of Kostice; 6. 11. 2020; 146; L. Beran
<i>Sphaerium nucleus</i> (Studer, 1820); 10/0; Brod nad Dyjí; 48.8780, 16.5243; overgrown pool near the Dyje River; 24. 10. 2020; 160; L. Beran
<i>Sphaerium nucleus</i> (Studer, 1820); 2/0; Studénka; 49.7110, 18.0911; oxbow S of Horní rybník Pond; 6. 6. 2020; 220; V. Beranová leg., L. Beran det.
<i>Sphaerium nucleus</i> (Studer, 1820); 2/0; Studénka; 49.7186, 18.1030; rest of wetlands in the dredged Velký Okluk Pond; 16. 5. 2020; 220; V. Beranová leg., L. Beran det.
<i>Sphaerium nucleus</i> (Studer, 1820); 60/0; Milešov; 50.5483, 13.9056; small lake in the Březina NR; 22. 3. 2020; 570; J. Beran, L. Beran
<i>Sphaerium nucleus</i> (Studer, 1820); 17/0; Milešov; 50.5483, 13.9056; small lake in the Březina NR; 16. 2. 2020; 570; J. Beran, L. Beran
<i>Striosubulina striatella</i> (Rang, 1831); 43842; Lešná; 49.2731, 17.7144; tropical pavilion in the Zoological Garden in Zlín; 27. 8. 2020; 255; V. Beran leg., L. Beran det.
<i>Tandonia kusceri</i> (Wagner, 1931); 1; Stupava; 48.2692, 17.0218; brownfield in the town on the Železničná Street; 7. 9. 2020; 172; T. Čejka
<i>Tandonia kusceri</i> (Wagner, 1931); 2; Stupava; 48.2763, 17.0329; Malý Park, a park at the former count's greenhouse, originaly floodplain forest site; 15. 5. 2020; 183; T. Čejka
<i>Unio crassus</i> Philipsson, 1788; 4/0; Ivančice; 49.0963, 16.3691; Jihlava River by a bridge; 5. 12. 2020; 203; L. Beran
<i>Unio crassus</i> Philipsson, 1788; 600/0; Vsetín; 49.3301, 17.9980; canal of the Bečva River under a bridge; 4. 10. 2020; 343; L. Beran

<i>Unio crassus</i> Philipsson, 1788; 1/0; Osek nad Bečvou; 49.5105, 17.5650; Bečva River upstream of a weir; 17. 11. 2020; 225; L. Beran
<i>Unio crassus</i> Philipsson, 1788; 4/0; Hynkov; 49.6712, 17.1803; Morava River by a small bridge near the S border of the Kenický NR; 20. 12. 2020; 220; V. Beranová leg., L. Beran det.
<i>Unio crassus</i> Philipsson, 1788; 5/0; Hynkov; 49.6736, 17.1810; Morava River; 20. 12. 2020; 220; V. Beranová leg., L. Beran det.
<i>Vertigo moulinsiana</i> (Dupuy, 1849); 50/1; Strání; 48.9086, 17.6763; Hrnčárky NR, an open calcareous spring fen; 3. 10. 2020; 453; M. Horsák, V. Horsáková
<i>Vertigo moulinsiana</i> (Dupuy, 1849); 10/0; Dubňany; 48.9340, 17.0702; Kosteliska, shrubby alluvial sedge wetland above the Jarohněvický rybník Pond; 8. 6. 2020; 180; M. Straka, J. Sychra leg., M. Horsák det.
<i>Viviparus acerosus</i> (Bourguignat, 1862); 26/0; Lednice; 48.8214, 16.8019; Dyje River in the town; 23. 5. 2020; 175; L. Beran
<i>Viviparus acerosus</i> (Bourguignat, 1862); 0/4; Brod nad Dyjí; 48.8700, 16.5083; inflow of the Dyje River to Horní Novomlýnská nádrž Reservoir; 44128; 160; L. Beran
<i>Viviparus acerosus</i> (Bourguignat, 1862); 6/0; Trstená; 49.3865, 19.5985; E cove of the Orava Reservoir; 5. 8. 2020; 600; L. Beran
<i>Viviparus acerosus</i> (Bourguignat, 1862); 28/0; Námestovo; 49.3969, 19.4806; W cove of the Orava Reservoir; 3. 8. 2020; 600; L. Beran
<i>Viviparus acerosus</i> (Bourguignat, 1862); 35/0; Námestovo; 49.3977, 19.4852; W cove of the Orava Reservoir by a bridge; 3. 8. 2020; 600; L. Beran
<i>Zebrina detrita</i> (O. F. Müller, 1774); 14/46; Prague; 50.0399, 14.3544; Prokopské údolí Valley NR, rocky steppe grassland in the area of the former medieval settlement Butovické hradiště; 28. 3. 2020; 295; M. Šafka leg., J. Hlaváč det.