



Acta Carpathica Occidentalis

PŘÍRODA ZÁPADNÍCH KARPAT



Muzeum regionu Valašsko, Vsetín
Muzeum jihovýchodní Moravy ve Zlíně



**New remarkable findings of beetles (Coleoptera) in the urban park of
Banská Bystrica, Slovakia**
**Nové pozoruhodné nálezy chrobákov (Coleoptera) v mestskom parku
v Banskej Bystrici, Slovensko**

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Keywords: Coleoptera, conservation biology, faunistics, old trees, saproxylic, rare and threatened species, urban environments

Abstract: We refer on the remarkable recent records of 20 beetle species from the urban park of Banská Bystrica (Slovakia) (during the years 2019 and 2020). Some of them are surprising and remarkable, especially in the case of rare and even relict species, including *Bothrideres bipunctatus* (Gmelin, 1790), *Rhopalocerus rondanii* (A. et G. B. Villa, 1833) and *Bolitophagus interruptus* Illiger, 1800. This article confirms that old trees in the urban environments can be an important habitat of rare and threatened beetles and other animals.

INTRODUCTION

Old trees in urban environments were usually considered as unattractive habitats. But the opposite is often true – old trees in urban environments are very important habitat for saproxylic insects (e.g. HORÁK 2018). The saproxylic beetle fauna of the urban parks in Slovakia is not known enough. MAJZLAN (1991) cites several rare or even relict beetle species directly from the city of Bratislava, including species of European importance. The first author of this article carried out sampling of beetles in the urban park of Banská Bystrica in the past (FRANC 1997, 2015) and the results were often surprising and remarkable as well. In this paper, we provide interesting records of 20 species of mostly saproxylic beetles. Their conservation status in Slovakia and further four countries is provided.

MATERIAL AND METHODS

This research has been carried out during four visits in the years 2019 (June 14) and 2020 (April 23, June 6 and July 24) in the urban park of Banská Bystrica (48°44'11.21" N, 19°8'16.79" E, 344 m a.s.l.). This memorable place of Banská Bystrica has a long history. The first tree planting in the Dolné lúky site (former pasture) took place in the 1840s, further planting was in 1897 and later. This park has acquired its current appearance since the end of World War II (BURKOVSKÝ 2006). The oldest trees are approximately 150 years old.

We individually explored under the bark and in rotten wood of several old trunks of sycamore maples (*Acer pseudoplatanus* L.) (Fig. 1–2). Some species were caught during the flight during warm weather. We kept merely a small number of individuals, because this research site is small (8.15 ha) and the insect populations are mostly limited.



Fig. 1: Old damaged sycamore maple (*Acer pseudoplatanus*). (Photo: V. Hemala).

Obr. 1: Poškodený kmeň starého javora horského (*Acer pseudoplatanus*). (Foto: V. Hemala).



Fig. 2: Longhorn beetle *Prionus coriarius* on an old damaged sycamore maple. (Photo: V. Hemala).

Obr. 2: Fuzáč hrubý (*Prionus coriarius*) na starom poškodenom javori horskom. (Foto: V. Hemala).

The species nomenclature mostly follows LÖBL & SMETANA (2007, 2011, 2013), LÖBL & LÖBL (2015) and IWAN & LÖBL (2020). Anthribidae as a separate family is used according to LÖBL & SMETANA (2011). Referred species are cited in various Red Lists of European countries mainly due to their association with ancient trees and their decrease. Their conservation status is compared (Tab. 1) according to the Red Lists of Slovakia (HOLECOVÁ & FRANC 2001), Czech Republic (HEJDA et al. 2017), Austria (JÄCH 1994), Germany (GEISER et al. 1998) and Poland (PAWŁOWSKI et al. 2002). Two of them are included in the list of relict species of primeval forests of Central Europe (ECKELT et al. 2017). The material examined is deposited in the first author's collection.

The following abbreviations are used in the text below: coll. – collection, det. – determinavit (for person who identified the indi-

vidual/s), lgt. – legitimavit (for person who sampled the individual/s), NR – Nature Reserve.

RESULTS AND DISCUSSION

1. *Scydmaenus perrisi* Reitter, 1879 (Staphylinidae: Scydmaeninae) – found under the bark of a damaged sycamore maple together with ants *Lasius brunneus* (Latreille, 1798). Little known, tiny and probably overlooked myrmecophilous species (FREUDE et al. 1971), nevertheless it occurs always sporadically and very rarely. Only a few records are known in Slovakia: ROUBAL (1930) mentioned only one historical undated record from the surroundings of Košice. Recent records are very sporadic as well: Šúr NR (MAJZLAN 2010); Malé Karpaty Mts. – Krasňany (MAJZLAN 2014a); Devínska Kobyla NR (MAJZLAN et al. 2005). It should be added to the Red List of Slovakia, perhaps in the cat-

Tab. 1: Recently documented beetles in the urban park of Banská Bystrica (Slovakia).

Tab. 1: Nedávno zdokumentované chrobáky v mestskom parku v Banskej Bystrici (Slovensko).

Family / Species	Codes of records	Conservation status				
		SK	CZ	PL	A	GE
Leiodidae						
<i>Nemadus colonoides</i> (Kraatz, 1851)	C1	NT	NT			VU
Staphylinidae: Scydmaeninae						
<i>Scydmaenus perrisi</i> Reitter, 1879 ⁴¹	B1			CR		EN
Staphylinidae: Aleocharinae						
<i>Euryusa sinuata</i> Erichson, 1837	C3		EN			VU
Ptinidae						
<i>Gastrallus laevigatus</i> (A. G. Olivier, 1790)	C3					EN
<i>Mesocoelopus niger</i> (P. W. J. Müller, 1821) ⁴²	C1					VU
Trogossitidae						
<i>Grynocharis oblonga</i> (Linnaeus, 1758) R2	A1		VU	DD	VU	EN
<i>Tenebroides mauritanicus</i> (Linnaeus, 1758)	C1			DD	VU	EN
Cleridae						
<i>Opilo mollis</i> (Linnaeus, 1758)	A1 in flight					
Cucujidae						
<i>Cucujus cinnaberinus</i> (Scopoli, 1763) ⁴³	D1	NT	VU	LC	NT	CR
Silvanidae						
<i>Silvanus bidentatus</i> (Fabricius, 1792)	C1					
Bothriideridae						
<i>Bothrioderes bipunctatus</i> (Gmelin, 1790) [= <i>contractus</i> (Fabricius, 1792)] ⁴⁴	C1	NT	EN	EN	EN	CR
Coccinellidae						
<i>Platynaspis luteorubra</i> (Goeze, 1777)	C1 in flight					
Zopheridae [= Colydiidae]						
<i>Colobicus hirtus</i> (Rossi, 1790) ⁴⁵	C3		EN		EN	CR
<i>Rhopalocerus rondanii</i> (A. et G. B. Villa, 1833) ⁴⁶ R2	B10+ C10+	VU	CR	EN	EN	CR
<i>Synchita humeralis</i> (Fabricius, 1792)	C5					
Tenebrionidae						
<i>Bolitophagus interruptus</i> Illiger, 1800 ⁴⁷ R1 (Fig. 3)	A1 in flight	VU	CR	DD	EN	RE
Cerambycidae						
<i>Prionus coriarius</i> (Linnaeus, 1758) (Fig. 2)	D1	VU				
Anthribidae						
<i>Platyrhinus resinosis</i> (Scopoli, 1763)	D1	NT	NT			
Curculionidae						
<i>Barypeithes pellucidus</i> (Boheman, 1834)	C1 D1					
<i>Otiorhynchus sulcatus</i> (Fabricius, 1775)	C1					

⁴¹⁻⁷ these records are commented below, R1 in Germany is considered to be an ancient forest relict of the first grade, R2 of the second grade (ECKELT et al. 2017); Codes of records: A June 14, 2019 B April 23, 2020 C June 6, 2020 D July 24, 2020 (the number reflects the number of individuals); conservation status: SK Slovakia, CZ Czech Republic, PL Poland, A Austria, GE Germany; categories: RE regionally extinct, CR critically endangered, EN endangered, VU vulnerable, NT near threatened, LC least concern, DD data deficient.

egory VU (vulnerable), according to the loss of its habitats and low number of recent records.

2. *Mesocoelopus niger* (P. W. J. Müller, 1821) (Ptinidae) – beaten down from older ivy branches (*Hedera helix* L.). Little known species with a hidden way of life, formerly it had been considered as very rare (ROUBAL 1936). Several recent records prove that this species is more widespread in Slovakia: Ivanka pri Dunaji (MAJZLAN 2006); Ábelová – Bánov Laz (CUNEV 2015); Šúr NR (MAJZLAN 2010); Burdov NR (MAJZLAN 2016a); Gajary village (MAJZLAN 2014b); Humenský Sokol NR (MAJZLAN 2016b); Štiavnické vrchy Mts. – Šándorky (MAJZLAN 2016c). It is notable that numerous occurrences were registered in cemeteries in the city of Bratislava (MAJZLAN 2015).

3. *Cucujus cinnaberinus* (Scopoli, 1763) (Cucujidae) – a dead specimen under the bark of sycamore maple. A conspicuous predator of bark insects, but it can also be an omnivorous species (STRAKA 2008). Despite it is listed among the species of European importance (NIETO et al. 2010), its population (at least in Slovakia) is stable and relatively rich. Nevertheless, its occurrence in the centre of district town is remarkable.

4. *Bothrioderes bipunctatus* (Gmelin, 1790) [= *B. contractus* (Fabricius, 1792)] (Bothriideridae) – under the bark of a damaged sycamore maple. A rare stenoecious species of ancient deciduous forests, mentioned in the majority of European Red Lists. The oldest records from Slovakia are known from Šarluhy (= Tekovské Lužany), Kálnica, Vranov nad Topľou and Košice (ROUBAL 1936). Later the species was reported also from floodplain forests near Bratislava (MAJZLAN & RYCHLÍK 1982), directly in Bratislava (MAJZLAN 1991) and from localities Trebišov, Turá and Posádka (part of Dvorníky village) (FRANC 1995). Additional recent records: Devínska Kobyla NR (MAJZLAN et al. 2005); Veľký Báb NR (MAJZLAN 2009); Šúr NR (MAJZLAN 2010); Burdov NR (MAJZLAN 2016a); Gajary village (MAJZLAN 2014b); Malé Kršteňany village (FRANC & FAŠANGA 2017). The occurrence of *B. bipunctatus* in the urban park of Banská Bystrica is highly notable.

5. *Colobicus hirtus* (Rossi, 1790) (Zopheridae) – under the bark of a damaged maple, several individuals. A rare thermophilic species, known from several records especially from the southern regions of Slovakia. The oldest known records from Slovakia are mentioned from Pohronie and Gemer regions without any exact locality data (ROUBAL 1936). Later the species was documented in Veľký Krtíš – Koprovnica, Plášťovce, Kruhy in Hrochotská dolina Valley, Pohanský hrad Castle, Steblová skala Mt. and Vrbovka (FRANC 1995). Additional recent records: Veľký Báb NR (MAJZLAN 2009); Šivetice – Muteň Mt. (BENEDIKT 2014); Burdov NR (MAJZLAN 2016a); Štiavnické vrchy Mts. – Šándorky (MAJZLAN 2016c); Domaníky village, xerothermic slope above the village (48°15'38.63" N, 18°58'47.90" E, 243 m a.s.l.), dying oak branches, May 4, 2020, V. Franc & V. Hemala lgt. et coll. Numerous occurrence of this species in the urban park of Banská Bystrica is surprising and remarkable.

6. *Rhopalocerus rondanii* (A. et G. B. Villa, 1833) (Zopheridae) – local stenoecious saproxylic species of ancient deciduous forests and old parks as well. It occurs individually, but under appropriate conditions can be abundant (FRANC 2015). Mass occurrence (more than 100 individuals) in the urban park of Banská Bystrica was observed on November 23, 1991, in old hollow stem of a lime tree occupied by ants *Lasius brunneus* (FRANC 1997). The oldest known records from Slovakia come from Košice, Borša and Bratislava–Petržalka (ROUBAL 1936). Later it was reported from Šúr (near Svätý Jur) and Trenčín by KORBEL (1951) and from Bratislava by MAJZLAN (1991). FRANC (1995) documented the species from Jelšava, Banská Bystrica – Urpín, Zvolen – Sekier, Plášťovce, Čabraď, Šúr, Hodejov and Veľaty. Additional recent records: Čachtický hradný vrch Hill NR (MAJZLAN et al. 2000); Banská Štiavnica – Kalvária (FRANC 2008a); Šúr NR (MAJZLAN 2010); Svätý Jur townlet (MAJZLAN 2011); Burdov NR (MAJZLAN 2016a); Štiavnické vrchy Mts. – Šándorky (MAJZLAN 2016c); Tvrdošovce village (MAJZLAN 2019); Beckov village, ca. 2 km N of the village (48°48'32.71" N, 17°54'33.36" E, 190 m a.s.l.), under the bark of

a damaged pear tree near a dirt road, March 23, 2019, V. Franc & V. Hemala lgt. et coll.

7. *Bolitophagus interruptus* Illiger, 1800 (Fig. 3) (Tenebrionidae) – caught in flight during a warm evening. It is classified as an “umbrella species”, indicating the high-biodiversity sites (ECKELT et al. 2017); mentioned in the majority of European Red Lists. In Slovakia it is not very rare species, it is known from several recent records (FRANC 2008b). Additional record is known from the village of Príbelce (FRANC 2010). In the Czech Republic it had been listed among regionally extinct species in the old version of Red List (FARKAČ et al. 2005); but the species was recently rediscovered in Moravia: Bílé Karpaty Mts., Chladný vrch Nature Monument (KOLONIČNÝ et al. 2008) and therefore it was reclassified as CR (critically endangered) in the last Red List (HEJDA et al. 2017). Its occurrence in the urban park of Banská Bystrica is highly notable.



Fig. 3: Darkling beetle *Bolitophagus interruptus*. (Photo: V. Hemala).
Obr. 3: Potemník *Bolitophagus interruptus*. (Foto: V. Hemala).

In this paper we refer on other remarkable recent records of beetles from the urban park of Banská Bystrica (Slovakia). Research of beetles, especially saproxylic ones, has been carried out here before (FRANC 1997, 2015). Rare and threatened species *Elater ferrugineus* (Linnaeus, 1758) and *Osmoderma barnabita* (Motschulsky, 1845) were also documented here (FRANC 2015). The latter one is species of European importance. Mentioned stenoecious species of old and hollow trees may survive in parks as well, but their survival necessarily depends on the preservation of their habitats, that must not be disturbed or even destroyed. On the other hand, they may be often seriously threatened by so-called “old trees treatment” – filling the hollows of old trees with wooden, concrete or other material. In the case of protected species such treatment may be classified as a crime. However, some interventions may be beneficial, e.g. pruning of headed willows. Fortunately, human relation to old, hollow, purported to be “diseased” trees in urban environments does not need to be so antagonistic elsewhere (FRANC 2015). For example, stumps and torsos of old trees are left alone in the “Stromovka” park in the city of Prague (KOHlíK 2009). We think that considerate attitude to old and hollow trees in towns and villages should finally be introduced in Slovakia as well.

Old, especially damaged and hollow trees (which are practically missing in cultivated forest oriented on the timber production only) often occur in towns and cities. There they may function as refugia of rare beetles and other animals. It concerns not only the city of Banská Bystrica, of course. MAJZLAN (1991) notes the occurrence of extra rare relict click beetle *Limoniscus violaceus* (P. W. J. Müller, 1821) in old hollow trees directly in the city of Bratislava. Older parks, alleys, cemeteries and river-bank groves may be often highly valuable habitats for rare saproxylic beetles and other animals (spiders, birds – especially hollow nesting ones, bats, etc.). That is why they deserve more considerate attitude and special conservation management (HORÁK 2018).

ACKNOWLEDGEMENTS

We are very grateful to Ing. Viliam Maslo (SZOPK Beckov) for providing us to access to the locality of *Rhopalocerus rondanii* near the village of Beckov.

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