

Remarkable species of beetles (Coleoptera) of the Hrochotská valley (Poľana Mts, Slovakia)

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ABSTRACT: 'Hrochotská dolina' valley is situated in the core area of the Poľana Mts (Central Slovakia). A large scale of well-preserved habitats (including xerothermic oak forest, ancient beech forest, scree maple forest and mixed mountain beech-and-fir forest) occur there. It especially concerns steep southern slopes of the valley. Despite these facts, this territory is surprisingly not well-known from entomological point of view. Therefore, I occasionally dealt with research of beetles in Hrochotská valley during the last decade. A lot of rare and threatened species were documented here, including several more-or-less clearly thermophilic Mediterranean ones – *Reitterelater dubius*, *Eurythrea quercus*, *Anthaxia olympica*, *Coraebus elatus*, *Lathropus sepicola*, *Colobicus hirtus*, *Salpingus aeneus*, *Tenebrio opacus* and *Hylesinus oleiperda*. On the other hand, it highly contrasts with prevailing fauna of ancient (sub)mountain forests of higher altitudes; including *Liodopria serricornis*, *Eutheia linearis*, *Benibotarus taygetanus*, *Lacon lepidopterus*, *Microrhagus pygmaeus*, *Xylophilus corticalis*, *Peltis grossa*, *Phloeostichus denticollis*, *Mycetophagus ater*, *Mycetoma suturale*, *Hypulus bifasciatus*, *Melandrya dubia*, *M. barbata*, *Platydemus dejeani* and *Ulorhinus bilineatus*. *Microscydnum minus* is the first seriously documented record for the territory of Slovakia.

INTRODUCTION

Hrochotská valley with length approximately 16 km ranks among the most remarkable valleys in Slovakia from nature history point of view. The valley begins in the caldera of the former Poľana volcano, declining to the west. Southern slopes are prevailingly steep and rocky; and a large scale of well-preserved habitats (including xerothermic oak forest, ancient beech forest, scree maple forest and mixed mountain beech-and-fir forest) occur there. Despite these facts, research of beetles and the other insects has not been seriously carried out in this territory. I would like to improve this data insufficiency; therefore I have occasionally dealt with research of beetles in this site during the last decade. The review of scarcer and faunistically valuable beetles of the Hrochotská valley is available in this paper.

MATERIAL AND METHODS

In this paper I summarise the results of my coleopterological research in the Hrochotská valley (the grid-mapping square code 7382a), that was carried out during the last decade. I applied current methods of collecting, especially sweeping the vegetation, knocking down the beetles from tree branches and individual collecting under the bark and in hollows of old trees. I have refused trapping methods due to their non-selectivity and harmfulness for the genofund. The material was identified according to the keys by FREUDE, HARDE & LOHSE (1964–1983) and the further accessible publications. All findings listed were mine, except where the name of different collector is added.

The research was carried out in the following sites (abbreviations are also used in the table 1):

1. **Lo** (lower) – lower part of the valley from the hill ‘Turkov vrch’ (710 m a. s. l.) to the ‘Beňova dolina’ branch valley. It appears as the warmest site, covered by oak forests and xerothermic rocky grasslands.

2. **Ce** – central part of the valley on the southern slopes of the ‘Žiarec’ hill (1200 m a. s. l.) has the most variegated vegetation, including the following forest types: *Querceto-Fagetum*, *Fagetum*, *Abieto-Fagetum*, *Abieto-Fagetum Piceetosum* and so-called scree forest (*Tilieto-Aceretum*). These forests are prevalingly old or up to ancient, with trees of considerable dimensions.

3. **Up** – upper part of the valley on the southern slopes of the ‘Kurinec’ hill (1009 m a. s. l.) is relatively colder, covered by beech and beech-and-fir forests. Only a little part of this territory is recently protected by the Nature Reserve ‘Pri Bútľavke’.

RESULTS AND DISCUSSION

The preview of scarcer and faunistically remarkable beetles of the Hrochotská valley is worked up in the table 1. These species are often cited in so-called Red Lists throughout Europe; including the Red List of Slovakia (HOLECOVÁ & FRANC 2001), Austria (FRANZ 1983, GEISER 1983), Germany (GEISER et al. 1984), Denmark (ASBIRK & SOGAARD 1991), Great Britain (HYMAN & PARSONS 1992, 1994), Norway (SKAUGE et al. 1992), Sweden (EHNSTRÖM, GÄRDENFORS & LINDELÖW 1993) and Finland (RASSI et al. 1992). The comparison between separate species’ ecosozological status in mentioned counties is also available in the table 1. In the further countries (according to my information) the Red List of beetles has not hitherto been worked up; or merely a simplified, schematic version – so-called Red Book is accessible.

Notable species are signed by an upper-index number in the table 1. The date of collecting, ecological circumstances and additional notes are available below:

1 – in the rotten stump of a fir 2nd June. Quite rare species of primary forests of the Carpathians. 2 – shrubby sub-xerothermophilic pasture near the ‘Bátovský balvan’ rock 15th May 1994. The occurrence of this rare thermophilic species in the Poľana Mts is remarkable. 3 – under the wood and stones beside a rivulet 23rd Oct. 1994. A rare stenotopic species, conspicuous and notable due to its appearance, yet. 4 – in an under-stone colony of *Formica fusca* 15th May 1994. 5 – swept from the vegetation in a forest clearing during warm afternoon 3rd Aug. 1993. 6 – in the

wet leaf detritus of the 'Hrochotská jaskyňa' cave 20th June 1995. **7** – swept from the vegetation in an ancient beech-and-fir forest 17th July 1993. A very rare species of the best preserved habitats. **8** – sieved from the detritus in an ancient forest 14th Aug. 1993. A very rare species, like the further relatives. **9** – swept from the vegetation in a forest clearing during warm afternoon 17th July 1993. A very rare and little-known species (due to its minute body); in the former Czechoslovakia cited only from Moravia (ROUS 1993). The single finding is mentioned from the woodpecker nest (MAJZLAN & RYCHLÍK 1992), with no detailed data on the site and date of collecting. The second specimen I have found near Dobrá Niva (7580b) in the cavity of a solitary ancient oak 27th Sept. 1992. There are the first seriously documented records for the territory of Slovakia! **10** – under the wood and detritus on a forest edge 18th June 2003. A sporadic and rare species.

11 – under the stone on the edge of the 'Jánošíkova skala' rock 19th June 1993. A rare species of warmer habitats, ranking among conspicuous and attractive beetles. **12** – in the colony of *Formica pratensis* 25th Sept. 1994. **13** – the 'Hrochotská jaskyňa' cave, 1 ind. caught in a trap from 19th Sept. 1997 to 9th Jan. 1998, J. Lakota lgt. (FRANC & MLEJNEK 2000). A very rare, little-known and probably endemic species for the Slovakian fauna; apparently preferring underground habitats. **14** – the same as in 13, but 3 ind., J. Lakota lgt. (FRANC & MLEJNEK 2000). A rare, probably endemic species as well, found relatively more often. **15** – under the stone on a xerothermic pasture 15th May 1994. **16** – in an under-stone colony of *Lasius niger* 15th May 1994. A strictly myrmecophilic, blind and wingless beetle. **17** – flown towards light at a cottage near the 'Bátovský balvan' rock 3rd Aug. 1993, approximately at 22.30. A rare species with nocturnal activity, conspicuous due to its bizarre appearance. **18** – relics of a beetle found in the cavity of an oak 4th Apr. 1993; adult found 18th June 2003 in flight during very warm afternoon. A rare species, larvae are strictly bound to tree cavities. It ranks among highly threatened species in several European countries. **19** – under the moss between stones 25th Sept. 1994. A rare species of well-preserved habitats. **20** – swept from the vegetation in a wet forest clearing 3rd Aug. 1993.

21 – on the flowers of a yarrow (*Achillea millefolium*) on a xerothermic slope 15th June 1994. A rare Mediterranean species, reaching its obviously the most northerly situated site here! **22** – on the flowers *Helianthemum ovatum* 6th June 1993. **23** – well-preserved relics of an adult under the bark of a damaged solitary oak on a xerothermic slope 4th Apr. 1993. A very rare Pannonian-Mediterranean species on the northern boundary of its range! **24** – under the bark of an old damaged fir 15th May 1994. **25** – under the bark of a fallen spruce 18th June 2003. A rare species of mountain conifer forests, one of a few Boreomontane species in this area. **26** – in the root cavity of an old oak 6th Nov. 1994. A rare species strictly tied to tree cavities, seriously threatened throughout Europe. **27** – under the bark of a damaged fir 24th July 1994. **28** – the same, 6th June 1993. A rare and relict species, considered to be a faunal jewel; highly threatened throughout Europe! **29** – under the bark of a solitary damaged oak 2nd June 1996. A very rare species of well-preserved warmer deciduous forests. **30** – swept from the vegetation of ancient forest near the ridge 17th July 1993. A very rare Boreomontane species.

31 – in the cavity of an old oak 4th Apr. 1993. **32** – under the bark of an old drying oak 4th Apr. 1993. A rare species of warm deciduous forests, formerly has incorrectly been cited as a South-European species *Ampedus montadoni* (Buyss. 1888) (KUBAŇ 1988), or even as *Brachygonus*

megelei (Lac. 1835); nevertheless which occurs in Slovakia extremely rarely, having different ecology (strictly tied to the cavities of ancient deciduous trees with wet decaying wood debris). **33** – swept from the vegetation in an open ancient forest 3rd Aug. 1993. **34** – on a damaged old beech during warm afternoon 18th June 2003. **35** – under the bark of a damaged beech 19th June 1993. **36** – swept from the vegetation in an ancient forest (*Abieto-Fagetum*) 17th July 1993. A very rare species, known from scattered records in well-preserved mountain areas. **37** – swept from the vegetation 2nd June 1996. **38** – the same, 24th July 1994. **39** – under the bark of a damaged oak 4th Apr. 1993. **40** – under the bark of a damaged beech near the web 17th July 1993.

41 – knocked down from the branches of a dying fir 24th July 1994. **42** – on the drying branches of a solitary oak 15th July 1994. **43** – under the bark of a damaged lime 4th Apr. 1993. **44** – under the bark of a dying fungi-infected fir 6th June 1993; elytrae of a dead specimen were found 18th June 2003 as well. A rare species of ancient forests (belonging to the archaic family), highly threatened in several European countries. **45** – in the root cavity of an oak occupied by the colony of *Lasius fuliginosus* 15th May 2003. **46** – observed several times during spring and summer 1993, 1994 and 2003. A relatively scarce, but locally abundant species of older deciduous forests. The necessity of its special protection by the law in Slovakia may be a subject for discussion. **47** – knocked down from the branches of a damaged solitary beech 3rd Aug. 1993, 2 ind. **48** – knocked down from the drying branches of an oak on a xerothermic slope 15th July 1994, 2 ind. A rare Mediterranean species on the northern boundary of its range! **49** – under the bark of a damaged oak 19th June 1993. **50** – under the bark of an old maple on a scree slope 6th June 1993.

51 – in the bracket fungi (*Pleurotus* sp.) on a beech stem 3rd Aug. 1993. **52** – in the puff-ball fungi (*Geastrum rufescens*) 25th Sept. 1994, 3 ind. **53** – swept from the vegetation 14th Aug. 1993. **54** – under the bark of a drying oak on a xerothermic slope 15th May 1994. A rare Mediterranean species, reaching one of the most northerly situated sites. **55** – on the dying branches of a beech 15th July 1994, 2 ind. **56** – under the bark of a damaged beech with bracket fungi (*Polyporus squamosus*) 18th June 2003. A rare species of old deciduous forests, formerly has been considered to be an extremely rare (ROUBAL 1936); recently is known from approximately 10 records (FRANC 2002). **57** – under the bark of a damaged fir 17th July 1993. A very rare, quite thermophilic species, known only from a few sporadic records. Its occurrence in a relatively high altitude (approx. 900 m) is remarkable. **58** – under the bark of a fungi-infected beech 19th June 1993. **59** – in the fungi *Ischnoderma resinosum* on a fallen beech 25th Sept. 1994, 2 ind. A very local and rare species of ancient forests. **60** – under the bark of a fallen fungi-infected beech 19th June 1993 and 18th June 2003.

61 – under the bark of a fallen beech 4th Apr. 1993, damaged dead specimen. An extremely rare relict species, known only from a few scattered records. **62** – on a damaged fungi-infected beech 6th June 1993, 2 ind.; and on drying branches of a hazel 2nd June 1996, 2 ind. A rare species of well-preserved forest habitats. **63** – on the fungi-infected branches of an oak 3rd Aug. 1993. **64** – under the bark of a fallen beech 17th July 1993. **65** – under the bark of a damaged spruce 17th July 1993. **66** – under the bark of a dead fir 24th July 1994. **67** – the same as in »17«. Apparently a rare little-known species with nocturnal activity, formerly has been considered to be extremely rare (ROUBAL 1936). Although several recent records are available, this notable Pannonian-Mediterranean species deserves special attention; it ought to be added in the Red List

of Slovakian beetles (MAJZLAN 2002). **68** – knocked down from the fungi-infected branches of an oak 14th Aug. 1993. A rare species of warmer deciduous forests. **69** – knocked down from the branches of a solitary oak on a xerothermic slope 19th June 1993. A rare, apparently thermophilic species. **70** – in the cavity of an old oak 19th June 1993.

71 – under the bark of a fallen fungi-infected beech 19th June 1993. A rare species of warmer ancient deciduous forests, seriously threatened throughout Europe. **72** – under the bark of an old dead fir 18th June 2003. A rare species of warm ancient deciduous forests, especially tied to oaks. Referred record in mountain environment is very remarkable. **73** – on a damaged fallen spruce 6th June 1993. A rare longhorn beetle, one of a few Boreomontane species of this area. **74** – the same as in »17«. This recently decreasing species belongs to the archaic subfamily of longhorn beetles. **75** – observed several times during summer 1994, 1995 and 2003. This species is locally abundant in older open beech forests throughout Slovakia. (See the note in »46«.) **76** – swept from the forest vegetation 17th July 1993. A rare species of warmer deciduous forests; its occurrence in mountain area is remarkable. **77** – on young oak leaves 15th July 1994. Another thermophilic species. **78** – on the decaying beech stem 2nd June 1996. **79** – on the dying fungi-infected beech 17th July 1993. A rare species of ancient deciduous forests, highly threatened throughout Europe. **80** – swept from the vegetation under old ashes (*Fraxinus excelsior*) 6th June 1993.

CONCLUSIONS

Southern slopes of the Hrochotská valley rank among the highly valuable territories of Slovakia from the nature history point of view. The results of my occasional research of beetles carried out here prove it seriously. A lot of beetles belong to the rare species, considered to be highly threatened in many European countries.

The fauna of beetles (and another animals) in this area is very diverse; including both thermophilic Mediterranean species and (sub)mountain ones. The fusion of these faunas is the most remarkable and sometimes surprising phenomenon of the Hrochotská valley. Notable thermophilic species include *Ocypus ophthalmicus*, *Reitterelater dubius*, *Eurythyrea quercus*, *Anthaxia olympica*, *Coraebus elatus*, *Lathropus sepicola*, *Colobicus hirtus*, *Salpingus aeneus*, *Tenebrio opacus* and *Hylesinus oleiperda*. The species of old (sub)mountain deciduous and mixed forests are prevailing here; it especially concerns *Liodopria serricornis*, *Eutheia linearis*, *Microscydmus minimus* (which is the first seriously documented record for the territory of Slovakia), *Benibotarus taygetanus*, *Peltis grossa*, *Lacon lepidopterus*, *L. querceus*, *Microrhagus pygmaeus*, *Xylophilus corticalis*, *Phloeostichus denticollis*, *Mycetophagus ater*, *M. decempunctatus*, *Mycetoma suturale*, *Hypulus bifasciatus*, *Melandrya dubia*, *M. barbata*, *Platydemus dejeani* and *Ulorhinus bilineatus*. On the other hand, only a few Boreomontane species occur here, including *Metanomus infuscatus*, *Diacanthous undulatus*, *Serropalpus barbatus* and *Callidium coriaceum*. Finally, the occurrence of two probably endemic species of underground habitats (*Bryaxis frivaldszkyi slovenicus* and *B. monstrosetibialis*) in the 'Hrochotská jaskyňa' cave is very remarkable as well.

Referred species prove extraordinarily high value of this territory from the nature-history point of view. The State Nature Conservancy of the Slovak republic aims to establish a larger

nature reserve here. Nevertheless, effective nature conservation of this territory will not be simple and lacking conflicts, because it will be necessary to control:

- wood exploitation, especially clear-felling procedures in less-extreme slopes;
- building of further timber roads and rope-ways;
- afforestation by allochthonous and unsuitable vegetation (spruce monocultures);
- expansion of cottages, tourist objects and paths;
- movement of illegal hunters and poachers;
- illegal collecting by commercial entomologists.

REFERENCES

- ASBIRK S. & SOGAARD S., 1991: Rodliste 90. Saerligt Beskyttelseskrævende Planter og Dyr i Danmark. Miljøministeriet, Skov-og Naturstyrelsen, København, 222 pp.
- EHNSTROM B., GÄRDENFORS U. & LINDELÖW Å., 1993: Rödlistade evertetrater i Sverige. Databanken för hotade arter, Uppsala, 69 pp.
- FRANC V., 2002: Beetles of the family Mycetophagidae (Coleoptera) in the Slovakian fauna. *Entomofauna carpathica* (Bratislava) 14: 26–29.
- FRANC V. & MLEJNEK R., 2000: Zaujímavé nálezy chrobákov z čeľade Pselaphidae (Coleoptera) v podzemných biotopoch Slovenska. In: MOCK A., KOVAČ L. & FULÍN M. (eds.), *Fauna jaskýň. Východoslov. múzeum (Košice)*, p. 31–34.
- FRANZ H., 1983: Rote Liste in der Österreich gefährdeten Käferarten (Coleoptera), Hauptteil, p. 85–122. In: GEPP J. (ed.), *Rote Listen gefährdeter Tiere Österreichs*. Bundesminist. für Gesundheit und Umweltschutz, Wien, 243 pp.
- FREUDE H., HARDE K.W. & LOHSE G.A., 1964–1983: *Die Käfer Mitteleuropas*, III.–XI. Goecke & Evers Verl., Krefeld.
- GEISER R., 1983: Rote Liste ausgewählter Familien xylobionter Käfer (Coleoptera) in Österreich, p. 131–137. In: GEPP J. (ed.), *Rote Listen gefährdeter Tiere Österreichs*. Bundesminist. für Gesundheit und Umweltschutz, Wien, 243 pp.
- GEISER R. et al., 1984: Rote Liste der Käfer (Coleoptera), p. 75–114. In: BLAB J., NOWAK E., TRAUTMAN V. & SUKOPP H. (eds.), *Rote Liste der gefährdeten Tiere und Pflanzen in der Bundesrepublik Deutschland*. Kilda Verl., Greven, 306 pp.
- HOLECOVÁ M. & FRANC V., 2001: Červený (ekozozologický) zoznam chrobákov (Coleoptera) Slovenska, p. 111–128. In: BALÁŽ D., MARHOLD K. & URBAN P. (eds.), *Červený zoznam rastlín a živočíchov Slovenska. Ochrana prírody, ŠOP SR Banská Bystrica*, Suppl. 20, 159 pp.
- HYMAN P.S. & PARSONS M.S., 1992, 1994: A review of the scarce and threatened Coleoptera of Great Britain 1, 2. UK Joint Nature Conservation Committee, Peterborough, 484 pp., 248 pp.
- KIRBY K.J. & DRAKE C.M., 1993: Dead wood matters – the ecology and conservation of saproxylic invertebrates in Britain. *English Nature* 7, Peterborough, 105 pp.
- KUBAŇ V., 1988: Faunistic records from Czechoslovakia (Coleoptera, Elateridae). *Acta Entomologica Bohemoslovaca* (Praha) 85/4: 318.
- MAJZLAN O., 2002: Aktivita chrobákov (Coleoptera) študovaná pomocou Malaiseho pascí na Slovensku. *Ochrana prírody (ŠOP, Banská Bystrica)* 21: 91–127.
- MAJZLAN O. & RYCHLÍK I., 1992: Topicko–trofické vzťahy chrobákov (Coleoptera) v hniezdach vtákov na Slovensku. *Práce Slov. entomol. spol. (Bratislava)* 9: 71–92.
- RASSI P. (ed.), 1992: Report on the monitoring of threatened animals and plants in Finland. Ministry of the Environment, Helsinki, 328 pp.
- ROUBAL J., 1930: *Katalog Coleopter (brouků) Slovenska a Podkarpatska*, I. Učená spol. Šafárikova v Bratislave, Státní tiskárna Praha, 527 pp.
- ROUBAL J., 1936: *Katalog Coleopter (brouků) Slovenska a Podkarpatské Rusi*, II. Učená spol. Šafárikova v Bratislave, Státní tiskárna Praha, 434 pp.
- ROUS R., 1993: Scydmaenidae, p. 37–38. In: JELÍNEK J. (ed.), *Check–list of Czechoslovak Insects 4. (Coleoptera)*. Folia Heyrovskyana (Praha), Suppl. 1, p. 1–172.
- SKAUGE O. et al., 1992: *Truete arter i Norge*. Directorate for Nature Management, Trondheim, 96 pp.

Table: Review of notable and faunistically valuable beetles of the Hrochotská valley

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
Carabidae											
<i>Carabus auronitens</i> F. 1792 ♂		◆	◆	LR nt							
<i>C. convexus</i> F. 1775	◆	◆				G		D	VU	D	EN
<i>C. coriaceus</i> L. 1758		◆	◆								
<i>C. intricatus</i> L. 1761	◆	◆				G	EN	VU	EN		
<i>C. irregularis</i> F. 1792 ♂			◆ ¹	LR cd							
<i>C. nemoralis</i> O. F. Müll. 1764		◆									
<i>C. scabriusculus</i> Oliv. 1795 ♂		◆ ²		LR cd	Sg						
<i>C. variolosus</i> F. 1787 ♂		◆ ³		LR cd	Sg	Sg					
<i>Cychrus attenuatus</i> (F. 1792)			◆								
<i>Lebia crux-minor</i> (L. 1758)		◆					EN	VU			
<i>L. chlorocephala</i> (Hoffm., Koch, P. Müll. & Linz 1803)		◆			VAb		N	D			
<i>Panagaeus bipustulatus</i> (F. 1775)	◆							VU			I
Histeridae											
<i>Hetaerius ferrugineus</i> (Oliv. 1789)		◆ ⁴		LR nt			I		R		
Silphidae											
<i>Xylodrepa quadripunctata</i> (L. 1761)	◆				Pg						
Leiodidae											
<i>Agaricophagus cephalotes</i> Schm. 1841			◆ ⁵			Sg	IK		CD		
<i>Amphicyllis globus</i> (F. 1792)			◆								
<i>Leptinus testaceus</i> Müll. 1817		◆ ⁶		LR nt							
<i>Liodopria serricornis</i> (Gyll. 1813)			◆ ⁷	VU		VAb			EN	VU	
Scydmaenidae											
<i>Eutheia linearis</i> Muls. 1861		◆ ⁸				Sg	EN	VU			
<i>Microscydus minimus</i> (Chaud. 1845)			◆ ⁹	+VU			R				
<i>Scydmaenus hellwigi</i> (Hbst. 1792)		◆				G					
<i>S. rufus</i> (Müll. & Kunze 1822)	◆						VU				
<i>Stenichnus godarti</i> (Latr. 1806)	◆						R				
Dasyceridae											
<i>Dasycerus sulcatus</i> Brong. 1800		◆									
Staphylinidae											
<i>Deleaster dichrous</i> (Grav. 1802)		◆					N				
<i>Ocypus compressus</i> (Marsh. 1802)		◆ ¹⁰		LR nt							
<i>O. fulvipennis</i> (Er. 1840)		◆							EN		
<i>O. fuscatus</i> (Grav. 1802)	◆						N				
<i>O. macrocephalus</i> (Grav. 1802)			◆								
<i>O. nero semialatus</i> (J. Müll. 1904)	◆						N				
<i>O. ophthalmicus</i> (Scop. 1763)		◆ ¹¹		LR nt			N				
<i>Oxyporus maxillosus</i> F. 1792			◆								
<i>Philonthus marginatus</i> (Stroem 1768)			◆								
<i>Quedius collaris</i> Er. 1840			◆								
<i>Staphylinus (Platydracus) stercorarius</i> Oliv. 1795	◆										
<i>Stenus aterrimus</i> Er. 1839		◆ ¹²		LR nt		Pg			CD		
<i>Zyras cognatus</i> (Märk. 1842)			◆				IK				
<i>Z. lugens</i> (Grav. 1802)		◆					N				

Family/Species	Site			Ecosozological status							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
Pselaphidae											
<i>Batrissodes venustus</i> (Reichb. 1816)		◆					N	D		IK	
<i>Bibloporus bicolor</i> (Denny 1825)		◆									
<i>Bryaxis frivaldszkyi slovenicus</i> (Mach. 1926)		◆ ¹³		VU							
<i>B. glabricollis</i> (Schm.-Goeb. 1838)		◆				G					
<i>B. monstrosetibialis</i> (Stolz 1923)		◆ ¹⁴		VU							
<i>Pselaphus heisei</i> Hbst. 1792	◆ ¹⁵										
<i>Tyrus mucronatus</i> (Panz. 1805)		◆						EN			
Clavigeridae											
<i>Claviger testaceus</i> Preyssl. 1790	◆ ¹⁶			LR nt		G	N			D	
Lucanidae											
<i>Ceruchus chrysomelinus</i> (Hochw. 1785)			◆	LR nt	Sg	Sg			EN	VU	
<i>Platycerus caprea</i> (De Geer 1774)		◆									VU
<i>Sinodendron cylindricum</i> (L. 1758)		◆		LR nt							
Trogidae											
<i>Trox scaber</i> (L. 1767)	◆							D			
Geotrupidae											
<i>Odonteus armiger</i> (Scop. 1772)		◆ ¹⁷				Sg	N	VU			
Scarabaeidae											
<i>Aphodius (Limarus) maculatus</i> Sturm 1800		◆				G					
<i>Gnorimus nobilis</i> (L. 1758)		◆				G	VU	Ex	VU		VU
<i>Liocola lugubris</i> (Hbst. 1786)		◆ ¹⁸		VU	Pg	Sg		Ex	CD	D	VU
<i>Omaloplia ruricola</i> (F. 1775)		◆					N	R			
<i>Oxythyrea funesta</i> (Poda 1761)	◆	◆				VAb					
<i>Potosia cuprea metallica</i> (Hbst. 1872)	◆			LR nt							
<i>Valgus hemipterus</i> (L. 1758)		◆				Sg		Ex			
Byrrhidae											
<i>Byrrhus glabratus</i> Heer 1841			◆								
<i>Curimus erichsoni</i> Reitt. 1883		◆ ¹⁹									
<i>Lamprobyrrhulus nitidulus</i> (Schall. 1783)	◆				Sg	Sg					
Psephenidae											
<i>Eubria palustris</i> Germ. 1818		◆ ²⁰			Pg	Sg	R	EN			
Buprestidae											
<i>Anthaxia fulgurans</i> (Schr. 1787)	◆					VAb					
<i>A. olympica</i> Kiesw. 1857	◆ ²¹				Sg						
<i>A. salicis</i> (F. 1777)	◆					G					
<i>Buprestis rustica</i> L. 1758		◆									
<i>Chrysobothris affinis</i> (F. 1794)		◆						VU			
<i>Coraebus elatus</i> (F. 1787)	◆ ²²				Pg	VAb					
<i>Dicerca berolinensis</i> (Hbst. 1779)		◆				Sg					
<i>Eurythyrea quercus</i> (Hbst. 1780) ♂	◆ ²³			VU	Sg						
<i>Trachys minutus</i> (L. 1758)		◆					VU	R			
Elateridae											
<i>Actenicerus sjaelandicus</i> (O. F. Müll. 1764)	◆										

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
<i>Ampedus elegantulus</i> (Schönh. 1817)		◆ ²⁴			Pg	VAb		Ex	Ex		
<i>A. erythrogonus</i> (Müll. 1821)			◆			G		VU	EN		
<i>A. nigrinus</i> (Herbst 1784)		◆					N	VU			
<i>A. sanguinolentus</i> (Schr. 1776)		◆					N	EN	CD		VU
<i>A. sinuatus</i> Germ. 1844	◆					VAb					
<i>Anostirus castaneus</i> (L. 1758)			◆				EN				
<i>A. purpureus</i> (Poda 1761)		◆						Ex			
<i>Cardiophorus vestigialis</i> Er. 1840	◆										
<i>Ctenicera</i> (= <i>Corymbites</i>) <i>virens</i> (Schr. 1781)		◆									
<i>Denticollis rubens</i> (Pill. & Mitt. 1783)			◆			Sg		R	EN		R
<i>Diacanthous</i> (= <i>Harminius</i>) <i>undulatus</i> (De Geer 1774)		◆ ²⁵				G	N		CD		VU
<i>Ischnodes sanguinicollis</i> (Panz. 1793)		◆ ²⁶		VU	Pg	VAb	N	EN	EN		
<i>Lacon lepidopterus</i> (Panz. 1801) ♂		◆ ²⁷	◆ ²⁸	VU		Aov		Ex	EN	EN	
<i>L. querceus</i> (Hbst. 1784) ♂		◆ ²⁹		VU	Sg	VAb	EN		EN		
<i>Metanomus infuscatus</i> (Eschsch. 1829)		◆ ³⁰				Pg					
<i>Procræus tibialis</i> (Lac. 1835)		◆ ³¹				Sg	R	R	VU		R
<i>Reitterelater dubius</i> Platia & Cate 1990		◆ ³²		+VU					EN		
Eucnemidae											
<i>Melasis buprestoides</i> (L. 1761)		◆			Pg/G	G	N	EN		VU	R
<i>Microrhagus</i> (= <i>Dirhagus</i>) <i>pygmaeus</i> (F. 1792)			◆ ³³	VU	G	Sg	R				
<i>Xylophilus</i> (= <i>Xylobius</i>) <i>corticalis</i> (Payk. 1800)		◆ ³⁴		VU	G/Sg	VAb			VU	VU	VU
Lissomidae											
<i>Drapetes biguttatus</i> (Pill. & Mitt. 1783)		◆ ³⁵									
Homalidae											
<i>Omalysus</i> (= <i>Homalysus</i>) <i>fontisbellaquei</i> (Geoffr. 1762)		◆									
Lycidae											
<i>Benibotarus taygetanus</i> (Pic 1905) [= <i>Dictyopterus fiedleri</i> (Reitt. 1907)]			◆ ³⁶	VU		VAb					
<i>Lopheros</i> (= <i>Aplatopterus</i>) <i>rubens</i> (Gyll. 1817)		◆							VU		
<i>Platycis cosnardi</i> (Chevr. 1838)		◆ ³⁷	◆ ³⁸			Sg	I		EN		
<i>Pyropterus nigroruber</i> (De Geer 1774)		◆					N	VU			
Lampyridae											
<i>Phosphaenus hemipterus</i> (Geoffr. 1762)		◆					EN				
Drilidae											
<i>Drilus concolor</i> Ahr. 1812		◆						D			
Dermestidae											
<i>Ctesias serra</i> (F. 1792)	◆ ³⁹						N				
<i>Dermestes frischii</i> Kug. 1792		◆						R			
<i>Megatoma undata</i> (L. 1758)		◆				G	N				
<i>Trinodes hirtus</i> (F. 1781)			◆ ⁴⁰			G	R	D	CD		
Anobiidae											
<i>Episernus striatellus</i> (Bris. de Barnev. 1863)			◆ ⁴¹			Sg					

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
<i>Dorcatoma serra</i> Panz. 1796	◆ ⁴²					Sg	N	VU	CD	R	
<i>Oligomerus brunneus</i> (Oliv. 1790)	◆					Sg			VU		
<i>Ptinomorphus</i> (= <i>Hedobia</i>) <i>imperialis</i> (L. 1767)	◆	◆					N			VU	
<i>Xestobium plumbeum</i> (Illig. 1801)		◆						D			
<i>Xyletinus ater</i> (Creutz. 1796)	◆							Ex ⁷			
Trogositidae											
<i>Grynocharis oblonga</i> (L. 1758)		◆ ⁴³			Sg	VAb			VU		
<i>Nemosoma elongatum</i> (L. 1761)			◆		G	G	R				
<i>Peltis grossa</i> (L. 1758) [= <i>Zimioma grossum</i> (L. 1758)]			◆ ⁴⁴	LR nt	Pg	VAb	Ex		VU	D	
<i>Thymalus limbatus</i> (F. 1787)		◆			/Sg	G	N	VU		R	
Cleridae											
<i>Opilo mollis</i> (L. 1758)		◆					N		CD		
<i>Tillus elongatus</i> (L. 1758)			◆		Pg/G	G	N	D	CD		
<i>Trichodes apiarius</i> (L. 1758)		◆				G	Ex				
Dasytidae											
<i>Dolichosoma lineare</i> (Rossi 1792)		◆									
Limexylidae											
<i>Hylecoetus dermestoides</i> (L. 1761)		◆					N				
Nitidulidae											
<i>Amphotis marginata</i> (F. 1781)	◆ ⁴⁵						IK		CD		
<i>Cychramus variegatus</i> (Hbst. 1792)			◆								
[= <i>quadripunctatus</i> (Hbst. 1792)]			◆								
<i>Cyllodes ater</i> (Hbst. 1792)		◆	◆					Ex	EN	Ex	
<i>Glischrochilus hortensis</i> (Fourcr. 1775)			◆								
<i>G. quadriguttatus</i> (F. 1776)			◆						CD		
<i>Ipidia binotata</i> (Reitt.) (= <i>quadrinotata</i> auct.)			◆						VU		
<i>Thalycra fervida</i> (Oliv. 1790)		◆									
Monotomidae											
<i>Rhizophagus ferrugineus</i> (Payk. 1800)		◆									
Cucujidae											
<i>Cucujus cinnaberinus</i> (Scop. 1763)		◆ ⁴⁶		LR nt	Sg/G	VAb			EN	EN	
<i>Laemophloeus monilis</i> (F. 1787)		◆ ⁴⁷		VU	Sg	G	EN		VU		
<i>Lathropus sepicola</i> (Müll. 1821)	◆ ⁴⁸				Sg	VAb					
<i>Notolaemus</i> (= <i>Laemophloeus</i>) <i>castaneus</i> (Er. 1845)		◆			Sg	VAb			EN		
<i>Pediacus dermestoides</i> (F. 1792)		◆ ⁴⁹		LR nt	VAb	VAb		Ex			
Phloeostichidae											
<i>Phloeostichus denticollis</i> Rdtb. 1842		◆ ⁵⁰		VU	Sg	Sg		EN			
Silvanidae											
<i>Silvanus bidentatus</i> (F. 1792)		◆					N	R	CD		
<i>Uleiota planata</i> (L. 1761)	◆	◆					N	R	EN	EN	
Cryptophagidae											
<i>Antherophagus pallens</i> (L. 1758)		◆	◆								
<i>Pteryngium crenatum</i> (Gyll. 1808)			◆						CD		
Biphyllidae											
<i>Diplocoelus fagi</i> Guér.-Ménév. 1844		◆				G	N	R	VU		

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
Erotylidae											
<i>Dacne rufifrons</i> (F. 1775)		◆			G	Sg			VU		
<i>Triplax rufipes</i> (F. 1775)		◆ ⁵¹			Pg/G	VAb		Ex		R	
<i>T. russica</i> (L. 1758)		◆			Pg			D			
<i>T. scutellaris</i> Charp. 1825		◆	◆		G	VAb	R	Ex			
<i>Tritoma bipustulata</i> F. 1775		◆	◆				N				
Endomychidae											
<i>Endomychus coccineus</i> (L. 1758)		◆	◆								
<i>Mycetina cruciata</i> (Schall. 1783)		◆	◆			G	Ex	Ex			
<i>Lycoperdina bovistae</i> (F. 1792)		◆ ⁵²			Sg/G	G	R		R		
<i>L. succincta</i> (L. 1767)		◆			Pg	Sg	VU		CD	R	
Alexiidae											
<i>Sphaerosoma pilosum</i> (Panz. 1793)		◆									
Coccinellidae											
<i>Anatis ocellata</i> (L. 1758)		◆									
<i>Calvia decemguttata</i> (L. 1767)		◆ ⁵³							R		
<i>Halyzia sedecimguttata</i> (L. 1758)		◆						VU		D	
<i>Hippodamia tredecimpunctata</i> (L. 1758)		◆					IK	D			
Colydiidae											
<i>Colobicus hirtus</i> (Rossi 1790)	◆ ⁵⁴										
[= <i>marginatus</i> Latr. 1807]					Sg	VAb					
<i>Coxelus pictus</i> (Sturm 1807)		◆ ⁵⁵				VAb					
<i>Synchita humeralis</i> (F. 1792)	◆	◆			G		N				
Mycetophagidae											
<i>Mycetophagus ater</i> (Reitt. 1879)		◆ ⁵⁶		VU	Sg						
<i>M. decempunctatus</i> F. 1801			◆ ⁵⁷	VU	Sg	VAb					
<i>M. multipunctatus</i> F. 1792		◆				Sg					
<i>M. populi</i> F. 1798		◆ ⁵⁸			Sg	Sg	N		VU		
<i>M. quadriguttatus</i> Müll. 1821	◆				G	G	N		VU		
<i>Typhaea stercorea</i> (L. 1758)		◆									
Tetratomidae											
<i>Mycetoma suturale</i> (Panz. 1797)		◆ ⁵⁹		+LR nt	Sg/VAb	VAb					
<i>Tetratoma ancora</i> F. 1790		◆			G	Sg	N		CD		
<i>T. fungorum</i> F. 1790			◆		G	G				R	
Melandryidae											
<i>Hypulus bifasciatus</i> (F. 1792)		◆ ⁶⁰		LR nt	Sg	VAb		D	CD		
<i>Melandrya barbata</i> (F. 1792) ♂		◆ ⁶¹		EN	G/Sg	Sg	EN	VU	EN	EN	
<i>Melandrya dubia</i> (Schall. 1783)		◆ ⁶²		VU	Sg	Sg		VU	VU	D	R
<i>Orchesia fasciata</i> (Illig. 1798)		◆ ⁶³			G	Sg		VU	VU		R
<i>O. micans</i> (Panz. 1795)		◆					N				
<i>O. minor</i> Walk. 1837		◆					N				
<i>O. undulata</i> Kr. 1853			◆ ⁶⁴			G				R	
<i>Phloiortya rufipes</i> (Gyll. 1810)		◆			Sg	Sg			CD		R
<i>Serropalpus barbatus</i> (Schall. 1783)		◆ ⁶⁵		LR nt		Sg			CD		R

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
Oedemeridae											
<i>Calopus serraticornis</i> (L. 1758)			♦ ⁶⁶			G					
<i>Chrysanthia nigricornis</i> Westh. 1881 (= <i>viridis</i> auct.)		♦				G	EN				
<i>Ischnomera</i> (= <i>Asclera</i>) <i>coerulea</i> (L. 1758)	♦						R		CD		VU
<i>Nacerdes</i> (= <i>Xanthochroa</i>) <i>carniolica</i> (Gistl 1832)		♦ ⁶⁷		+VU		VAb					
Aderidae											
<i>Aderus pygmaeus</i> (De Geer 1774)		♦ ⁶⁸			Sg	Sg					IK
Scaptiidae											
<i>Cyrtanaspis phalerata</i> (Germ. 1831)		♦							VU	IK	
Salpingidae											
<i>Lissodema denticolle</i> (Gyll. 1813)		♦					N				
[= <i>quadripustulatum</i> (Marsh. 1802)]		♦					N				
<i>Rabocerus foveolatus</i> (Ljungh 1823)		♦				G					
<i>Vincenzellus ruficollis</i> (Panz. 1794)		♦				G		D	VU		
[= <i>viridipennis</i> (Latr. 1804)]		♦									
<i>Salpingus</i> (= <i>Rhinosimus</i>) <i>aeneus</i> (Oliv. 1807)	♦ ⁶⁹				G	VAb					
<i>S.</i> (= <i>Rh.</i>) <i>ruficollis</i> (L. 1761)		♦		VU [?]							
Alleculidae											
<i>Allecula morio</i> (F. 1787)		♦				G		VU	CD	Ex	
<i>Gonodera luperus</i> (Hbst. 1783)	♦	♦									
<i>Hymenalia rufipes</i> (F. 1792)	♦					VAb		R			
<i>Mycetochara axillaris</i> (Payk. 1799)		♦				Sg		D	CD		VU
<i>Pseudocistela ceramboides</i> (L. 1758)		♦ ⁷⁰				Sg	N	D	CD		
Tenebrionidae											
<i>Alphitophagus bifasciatus</i> (Say 1823)		♦									
<i>Bolitophagus reticulatus</i> (L. 1767)		♦	♦			G	R	D			
<i>Corticeus</i> (= <i>Hypophloeus</i>) <i>linearis</i> (F. 1790)		♦				G					
<i>C.</i> (= <i>H.</i>) <i>unicolor</i> Pill. & Mitt. 1783		♦	♦				R		CD		VU
<i>Diaperis boleti</i> (L. 1756)		♦					VU	D			
<i>Palorus depressus</i> (F. 1790)	♦					G					
<i>Pentaphyllus testaceus</i> (Hellw. 1792)	♦				Pg	G		VU	CD	R	
<i>Platydema dejeani</i> Lap. de Cast. & Brullé 1831		♦ ⁷¹		+VU	VAb						
<i>Scaphidema metallicum</i> (F. 1792)		♦					N				
<i>Tenebrio opacus</i> Duft. 1812		♦ ⁷²		+VU	Sg	Sg		VU	EN		
Cerambycidae											
<i>Acanthoderes clavipes</i> (Schr. 1781)		♦						Ex [?]			
<i>Anaglyptus mysticus</i> (L. 1758)							N		CD		IK
<i>Anoplodera</i> (= <i>Leptura</i>) <i>sexguttata</i> (F. 1775)		♦				G	R	VU	VU	VU	VU
<i>Arhopalus</i> (= <i>Crioccephalus</i>) <i>rusticus</i> (L. 1758)			♦								
<i>Callidium coriaceum</i> (Payk. 1800)		♦ ⁷³				G			CD		
<i>Cerambyx scopolii</i> Füssly 1775		♦						D	VU		VU

Family/Species	Site			Ecosozological status (ESS)							
	Lo	Ce	Up	Sk	A*	G*	GB	Dk	Sw	F	N
<i>Cortodera femorata</i> (F. 1787)		◆				G					R
<i>Molorchus umbellatarum</i> (Schreb. 1759)		◆					N				
<i>Pachyta quadrimaculata</i> (L. 1758)			◆					Ex?			
<i>Phymatodes (Poecilium) alni</i> (L. 1767)		◆					N	R		VU	
<i>Plagionotus arcuatus</i> (L. 1758)		◆					Ex			VU	
<i>Pogonocherus fasciculatus</i> (De Geer 1775)		◆					N				
<i>P. hispidulus</i> (Pill. & Mitt. 1783)		◆								CD	
<i>Prionus coriarius</i> (L. 1758)		◆ ⁷⁴		VU?			N	R		CD	I
<i>Rhagium sycophanta</i> (Schr. 1781)	◆				G	G		VU		VU	
<i>Rosalia alpina</i> (L. 1758) ♂		◆ ⁷⁵		VU		Sg				Ex	
<i>Stenopterus rufus</i> (L. 1767)	◆										
<i>Stenostola dubia</i> (Laich. 1784)		◆					N				
<i>Stictoleptura</i> (= <i>Leptura</i>) <i>scutellata</i> (F. 1781)		◆				G	N	VU		EN	
<i>Xylotrechus antilope</i> (Schönh. 1817)			◆ ⁷⁶		G	G			R		VU
Chrysomelidae											
<i>Cassida azurea</i> F. 1801		◆				VAb	G				
<i>Coptocephala rubicunda</i> (Laich. 1781)	◆										
<i>Cryptocephalus biguttatus</i> (Scop. 1763)	◆						VU	VU	VU		
<i>Cr. bilineatus</i> (L. 1767)		◆				G	N	VU	VU		
<i>Cr. nitidulus</i> F. 1787		◆				G	EN				
<i>Cr. pini</i> (L. 1758)		◆									
<i>Cr. pusillus</i> F. 1777		◆								CD	
<i>Cr. vittatus</i> F. 1775								VU	VU		
<i>Lachnaea sexpunctata</i> (Scop. 1763)	◆ ⁷⁷										
<i>Liliocerris lilii</i> (Scop. 1763)		◆									
<i>L. merdigera</i> (L. 1758)		◆									
<i>Oomorphus concolor</i> (Sturm 1807)		◆									
Anthribidae											
<i>Anthribus albinus</i> (L. 1758)		◆	◆				N				
<i>Brachytarsus nebulosus</i> (Forst. 1771)		◆					N				
<i>Dissoleucas niveirostris</i> (F. 1798)		◆ ⁷⁸					VU	VU			
<i>Enebreutes</i> (= <i>Tropideres</i>) <i>sepicola</i> (F. 1792)		◆			G		VU	VU			
<i>Platyrhinus resinosus</i> (Scop. 1763)		◆		LR nt			N	VU	VU	VU	
<i>Rhaphitropis marchicus</i> (Hbst. 1797)	◆										
<i>Ulorhinus bilineatus</i> (Germ. 1818)			◆ ⁷⁹	VU	Sg						
Scolytidae											
<i>Ernoporus tiliae</i> (Panz. 1793)		◆ ⁸⁰					EN	R			
<i>Hylesinus oleiperda</i> (F. 1792)		◆						D			
<i>Leperisinus fraxini</i> (Panz. 1799)			◆								
<i>Scolytus ratzeburgi</i> Jans. 1856			◆				N				

ESS (countries): Sk – Slovakia, A – Austria, G – Germany, GB – Great Britain, Dk – Denmark, Sw – Sweden, F – Finland, N – Norway; ESS (categories): Ex – extinct, Ex – documented from Great Britain only from pre-historic age due to the sub-fossil sediments' study (KIRBY & DRAKE 1993), VU – vulnerable, R – rare, D – decreasing, CD – care demanding, N – notable, IK – insufficiently known, I – indeterminate, LR nt – lower risk, near threatened; *different system of ecosozological categories is used in Germanic-speaking countries, but it is more-or-less easily compatible with ones according to IUCN: Aov – 'Ausgestorben oder verchollen' (it means Ex according to IUCN), VAb – 'Vom Aussterben bedroht' (= CR according to IUCN), Sg – 'stark gefährdet' (= EN according to IUCN), G – 'gefährdet' (= VU according to IUCN), Pg – 'potentiell gefährdet' (= CD according to IUCN); + the species ought to be added in the Red List of beetles of Slovakia, ♂ protected species in the territory of Slovak republic