

Remarkable findings of false click beetles (Coleoptera: Eucnemidae) in Slovakia and their ecosozological value

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Abstract

This paper deals with the distribution, ecology and conservation problems of false click beetles (Eucnemidae). This family ranks among the lesser known groups of beetles, mentioned in faunistic papers only sporadically. On the other hand, the majority of them ranks among rare, relict, faunistically and zoogeographically remarkable species of a high level of endangerment. Eucnemidae especially occur on damaged stems and drying branches in ancient forests. The problems of their ecosozological status throughout European countries is discussed here as well. The most threatened species of Central Europe include *Xylophilus testaceus*, *Dromaeolus barnabita*, *Nematodes filum*, *Thambus frivaldszkyi*, *Clypeorhagus clypeatus* and *Rhacopus sahlbergi*. A large majority of Eucnemidae have a wide applicability especially as bioindicators of well preserved and valuable ecosystems. The whole family deserves strict protection.

Key words: Eucnemidae, Coleoptera, Slovakia, biomonitoring, insect protection.

Introduction

The attention of coleopterologists is usually oriented towards "attractive" families of beetles (Buprestidae, Cerambycidae, Meloidae, large Carabidae, etc.). The majority of others, including Eucnemidae, are mostly overlooked. Despite this fact, the majority of them rank among rare and relict species of a narrow ecological amplitude. But it reflects in their high vulnerability and endangerment as a result of anthropic pressure on the biosphere. Eucnemidae are often listed in the red lists of Slovakia (Jedlička et al., 1995), Austria (Franz, 1983; Geiser, 1983), Germany (Geiser et al., 1984), Great Britain (Hyman & Parsons, 1992), Denmark (Asbirk & Sogaard, 1991), Sweden

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(Ehnström, Gärdenfors & Lindelöw, 1993), Norway (Skaug et al., 1992) and Finland (Rassi et al., 1992).

Methods

In this paper I summarize the results of my entomological research mainly in Central Slovakia that was carried out during the last two decades. It contains the remarkable findings of Eucnemidae with ecological and zoogeographical notes. I applied current methods of collecting, especially individual collecting on old, damaged trees and shaking down the beetles from tree branches. All findings listed were mine, except where the names of different collectors are added. The material was determined according to the key by Lohse (1979). Published data and further findings are added only in the case of rare and faunistically significant species. Historical records before the Second World War are not mentioned. Finally I would like to thank all colleagues mentioned above who supplied me with their interesting and valuable records.

Results (Systematic review of species)

Isorhipis marmottani Bonvouloir, 1871 – occurs scatteringly and very rarely in warmer deciduous forests of central and southern Europe. First record from Slovakia has been published from Vihorlat Mts. (710), Fageto-Carpinetum, July 1961, 2 individuals (below only "ind.") (Gottwald, 1963); later found near Snina (7098b), July 1963, Brožík lgt. et coll.; Vtáčnik Mts. (280), 30. June 1965 and Plešivec (7488), 19. June 1966, Brožík & Sobota lgt. et coll. (Gottwald, 1970). Recent records: Trábeč Mts.: the valley of the Hunták brook (7674b), summer 1994 (Cunev, 1997); Krupinská planina Mts.: 'Čabradská dolina' valley (7780d), on branches of a hornbeam (*Carpinus betulus*) 3. July 1991, Franc lgt. et coll. Apparently is a monophagous species of the hornbeam that likewise states Lucht (1989). Ecosozological status (below only "ESS") – Slovakia: V, Austria: E.

Isorhipis melasoides (Laporte de Castelnau, 1835) – occurs sporadically and rarely in well preserved deciduous forests and groves. Only a few recent records are available: Banská Bystrica – Urpín (7280d), on the dying stem of a lime 26. June 1980, Franc lgt. et coll.; Petrovce (7299a), 14. July 1984 on beech branches (Fornůšek & Jeniš, 1985); Malé Karpaty Mts.: Borinka (7768a), without date (Majzlan, 1990). Only one numerous record is available: Petrovce, July 1990 and 1991, June 1992 – approximately 20 ind. (♀) on old beech stems (Lohaj, 1993). ESS – Slovakia: R, Germany and Austria: V. In Great Britain is considered to be an extinct species (Kirby & Drake,

1993). Generally, its abundance has evidently been decreased during the last two decades.

Melasis buprestoides (Linnaeus, 1761) – a relatively frequent species, but in well preserved warmer deciduous forests only. Highly prefers dying beech stems and branches. Recent records (numerous published data are not mentioned): Banská Bystrica – Urpin (7280d) 18. May 1979, several ind. (observed later as well); Starohorské vrchy Mts.: Nature Reserve (below only “NR”) Baranovo (7280b) 16. May 1989; Krupinská planina Mts.: Čabradská dolina valley (7780d) 3. July 1991, 2 ind.; Dobrá Niva – Ďurianová (7580a) 22. May 1992; each of them V. Franc lgt. et coll. ESS – Austria and Great Britain: Notable (N), Germany and Norway: R, Denmark: E, Finland: V.

Hylis (= *Hypocoelus*) *foveicollis* (C. G. Thomson, 1874) – a rare species of well preserved forests from hilly landscape up to mountain altitudes. Although its larvae may develop in a large scale of both deciduous and conifer trees (Lucht, 1989), always occurs scatteringly. Apparently has been confused with *H. procerulus* (Mannerheim, 1823) that is seriously documented only from Moravia (Olexa, 1993) – these species are usually not distinguished in older papers and identification keys. Recent records: Banská Bystrica – Mičinská cesta (7281c), 9. July 1986 on a fir, Kubinec lgt. et coll. several ind., 2 ones in coll. mea; Štós (7290d), August 1989, on a spruce (Lohaj, 1993); Balocké vrchy Mts. – Tlstý javor (7383b), 1 ind. in a pheromon trap for *Ips typographus* 18. July 1993, Franc lgt. et coll. D. Brutovský found it several times in pheromon traps for *Ips typographus*: Veporské vrchy Mts. – Čelno (7282b), 10. August 1983 and 25. August 1984; Čierny Balog (7283d), 5. August 1982. ESS – Slovakia, Austria and Germany: V, Sweden: Care demanding (CD).

Hylis (= *Hypocoelus*) *olexai* (Palm, 1955) – a little known and apparently very rare species of well preserved submountain forests. The first records from Slovakia have been published from Remata (7278d), July 1956 and 1958, several ind. on a fir, Brožík & Sobota lgt. et coll. (Havelka, 1964); and Levočské vrchy Mts. (670), July 1963, on a spruce (Gottwald, 1963). Recent record: Slaská (7379), several ind. on a rotten beech 25. June 1993, Šiška lgt. et coll., 1 ind. in coll. mea; Lopej (7183c) 10. September 1994 and 20. July 1987, 3 ind., Brutovský lgt. et coll. ESS: Slovakia and Great Britain: R, Austria, Germany and Sweden: V.

Xylophilus (= *Xyllobius*) *corticalis* (Paykull, 1800) – a very local and rare species of ancient mixed forests. Lucht (1989) mentions that it lives in rotten wood of many trees, nevertheless apparently prefers firs. Recent records: Zborov (6693b), without date, and NR Badínsky prales (7380a) 7. August 1982 and 4. August 1984, several ind. (Fornůsek & Jeniš, 1985); Poľana Mts. – Záhorská skala (7382c) 5. July 1991 and Zvolen, an enclave of

spruce forest on the northern slope of „Pustý hrad“ (7480b), 1. July 1992, Brutovský lgt. et coll.; Starohorské vrchy Mts.: Pánsky diel (7280b), on a damaged fir 10. July 1983; Balocké vrchy Mts.: NR Dobročský prales (7283), 18. July 1992; Kremnické vrchy Mts.: Lavrín (7380a), 8. July 1995, 2 ind.; each of them Franc lgt. et coll. ESS – Slovakia, Austria, Sweden, Norway and Finland: V, Austria: R.

Xylophilus (= *Xyllobius*) *testaceus* (Herbst, 1806) – occurs very locally and rarely in warm deciduous, often alluvial forests. Only a few recent records are accessible: Horovce near Ondava river*¹ May 1990, several ind. on rotten willows (Lohaj, 1993); Turá (8077d), 5 June 1989, 2 ind. on rotten poplars, Franc lgt. et coll. ESS – Slovakia and Austria: V.

Dromaeolus barnabita (A. & G. B. Villa, 1838) – occurs sporadically and very rarely in well preserved warm deciduous forests of Central and southern Europe. Only a few recent records are available: Petrovce (7299a), July 1990 and June 1992, several ind. (Lohaj, 1993); Tribeč Mts.: the valley of the Hunták brook (7674b), summer 1994 (Cunev, 1997); Krupinská planina Mts.: Čabradská dolina valley (7780d), on dying oak branches 20. May 1992; and Čebovce (7881a) 30. May 1993, Franc lgt. et coll. ESS – Slovakia, Austria, Germany and Sweden: E. (Its ESS in Slovakia ought to be lower – V.) In Great Britain is considered to be an extinct species (Kirby & Drake, 1993).

Microrhagus (= *Dirhagus*) *lepidus* Rosenhauer, 1847 – occurs scatteringly and rarely in well preserved forest ecosystems from hilly landscape to mountain altitudes. Larvae fed on various old deciduous trees (Lucht, 1989). Recent records: Veľký Krtíš – Koprovnica (7782c), dying oak branches 30. May 1980; Banská Bystrica – Stará kopa (7281c), on a rotten beech 26. June 1981; Plášťovce (7879b), on an old oak 26. May 1992; Veľká Fatra Mts. – Skalná (7080c), 1. July 1994 on a rotten beech approximately 1 150 m u. s. l. (a remarkable finding from mountain altitude!), each records Franc lgt. et coll.; Petrovce (7299a), 23. June 1984 several ind. on old beeches (Fornůsek & Jeniš, 1985); Balocké vrchy Mts. – Tlstý javor (7383b) 20. July 1989, 1 ind. in a pheromone trap for *Ips typographus*, Brutovský lgt. et coll.; Tribeč Mts. – NR Žibrica (7674b), the end of 80ies (Valenčík, 1991); Vtáčnik Mts. – „Megova dolina“ valley (7477b), without date (Cunev, 1992); Tribeč Mts. – Ondrášová (7476b), without date (Cunev, 1995). ESS – Slovakia, Austria and Norway: V, Germany: E, Sweden: CD, Finland: Insufficiently known (IK).

Microrhagus (= *Dirhagus*) *pygmaeus* (Fabricius, 1792) – a rare species appears scatteringly in well preserved deciduous forests of Europe. Known from sporadic older findings: Vtáčnik Mts. (280), beech branches, July

* an accurate grid mapping code of this locality is not accessible

1958; and Remata (7278d), on a goat willow (*Salix caprea*), June 1954, Brožík lgt. et coll. (Havelka, 1964). Recent records: Malá Fatra Mts. – Kľak (7077b), Fageto-Aceretum, without date (Majzlan, 1998); Petrovce (7299a), June 1992, approximately 20 ind. on dying branches of beech, hornbeam and goat willow (Lohaj, 1993); Poľana Mts. – NR Pod Bútľavkou (7382b), swept from the vegetation of an old beech forest 17 July 1993; Poľana Mts. – Žiarec (7382a), Querceto-Fagetum, swept from the vegetation 3. August 1993; Banská Bystrica – Urpin (7280d), shaken down from dying beech branches 1. July 2000; each of them Franc lgt. et coll. ESS – Slovakia and Germany: V, Austria and Great Britain: R.

Drapetes biguttatus (Piller & Mitterpacher, 1783) – a relatively frequent species, nevertheless found only sporadically. Recent records: Banská Bystrica – Uľanka (7280b), accidentally on flowers of Umbelliferae 25. May 1979; Veľká Fatra Mts. – Majerova skala (7180b), on a damaged beech 22. June 1985; Turá (8077d), on a rotten willow 5. June 1989; Poľana Mts. – Žiarec (7382a), on a beech 19. June 1993; each of them Franc lgt. et coll. *Drapetes biguttatus* is mentioned in this paper only historically – this genus has formerly been assigned to the family Eucnemidae, Throscidae or even Elateridae, recently ranks among Lissomidae (Burakowski & Stefańska, 1985).

I have not found the further species that are extremely rare, often ranking among seriously endangered. It especially concerns *Nematodes filum* (Fabricius, 1801), *Thambus frivaldskyi* Bonvouloir, 1871, *Clypeorhagus clypeatus* (Hampe, 1850) and *Rhacopus sahlbergi* (Mannerheim, 1823). Their ESS is usually specified as „E“.

Conclusions

False click beetles (Eucnemidae) mostly rank among rare and faunistically significant species of a discontinuous range. A large majority of them have a wide ecosozological applicability especially as bioindicators of well preserved and valuable ecosystems; but they also indicate primeval fragments and microrefugia in the exploited and urbanized landscape. We can see that the majority of findings listed in this paper were made in protected territories or in ones that are appropriate and acceptable for territorial protection. But Eucnemidae are often highly threatened by various kinds of human activity; including especially:

1. Intensive forestry with all the consequences, mainly degradation of natural forests towards monocultures and the selective cutting of old, damaged and hollow trees which are still regarded as the reservoirs of so-called “pests”.

2. Gradual vanishing of alluvial forests which is caused mainly by agricultural ground expansion and absurd river-bank regulation.

3. Destruction of forest fragments and dispersed vegetation in the agricultural and urbanized landscape; cutting down or even burning of old and hollow trees in cities and suburban areas.

4. Despite their relatively „unattractive“ appearance, Eucnemidae have become a quite popular group among commercial entomologists. For example, dark brown and only 4 mm large *Thambus frivaldskyi* Bonvouloir, 1871 “costs” 250-300 crowns on both official and black entomological markets!

Finally I would like to emphasize that effective territorial protection of valuable and threatened biotopes is the most important for real genofund conservation. It does not concern only Eucnemidae, but a large scale of saproxylic insects and the other animals as well.

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