

BEETLES OF THE FAMILY EROTYLIDAE (COLEOPTERA) IN THE SLOVAKIAN FAUNA

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Abstract: Presented paper deals with distribution and ecology of the beetles of the family Erotylidae in Slovakia. It is a little-known group of beetles mentioned very sporadically in faunistic papers. Erotylidae are especially tied to the bracket fungi growing on old trees. The majority of them occur in ancient forests, and then are considered to be the significant bioindicators. Erotylidae are often listed in the Red Lists of separate European countries. Ecosozological status of separate species throughout Europe is discussed below. Very rare and threatened species include *Triplax elongata*, *T. pygmaea*, *T. collaris* and *Combocerus glaber*. *Triplax lacordairei* is a new species for the Slovakian fauna.

Key words: beetles, Erotylidae, Coleoptera mycetophila, bioindication, protection of insects

INTRODUCTION AND METHODS

Erotylidae rank among little-known families of beetles – their distribution and ecology are discussed only sporadically in accessible papers from Central Europe. It is considered that nearly the whole family includes mycetophilous species, living in bracket fungi especially.

Erotylidae mostly occur in well-preserved habitats and then they may be utilized as the significant indicators of environmental quality. Narrow ecological amplitude reflects in high level of potential or real vulnerability of Erotylidae, that is discussed in the following chapter.

The research of Erotylidae has occasionally been carried out in suitable localities of Slovakia during the last two decades. I have especially dealt with visual investigation of older bracket (tree) fungi and the sifting of detritus and crisp rotten wood occupied by mycelium. The beetles were determined according the key by VOGT (1967). The material is deposited in my private collection.

EROTYLIDAE IN RED LISTS OF EUROPEAN COUNTRIES

Erotylidae are often mentioned in Red Lists of separate European countries. Actually, it concerns the Red List of Great Britain (HYMAN & PARSONS 1992), Sweden (EHNSTRÖM et al. 1993), Finland (RASSI et al. 1992), Denmark (ASBIRK & SOGAARD 1991), Germany

(GEISER et al. 1984), Austria (FRANZ 1983, GEISER 1983) and Slovakia (JEDLIČKA et al. 1995). The level of endangerment-ecosozological status (below only „ESS“) of separate species is estimated more-or-less subjectively; and moreover, different categories, quite difficultly compatible with IUCN ones, are used in German-speaking countries. Therefore I have tried to make ESS assessment more objective and exact. I worked up two versions of ESS assessment scheme; the second one, applied for spiders (FRANC 2000) may potentially be used for the whole animal kingdom. The following chapter includes recent records, ecological notes and ESS of every Erotylid-beetle in the Slovakian fauna. Numeric value of ESS appears in ecosozological index (below only „ESI“) and we can distinguish the following six levels of endangerment (the last four ones are just the same as IUCN categories):

- 2-5 eurytopic, adaptable or up to expansive species (it does not concern Erotylidae)
- 6-12 temporarily out of apparent danger (COAD)
- 13-19 care demanding (CD)
- 20-26 rare (R)
- 27-33 vulnerable (V)
- 34→ immediately threatened, endangered (E); the abbreviations in brackets are used in the following text as well.

RESULTS (SYSTEMATIC REVIEW OF SPECIES)

Tritoma bipustulata Fabricius, 1775 – occurs scatteringly, but not rarely on bracket fungi with harder flesh (*Polyporus*, *Daedalea*, *Trametes*, *Stereum* etc.). It lives in the bigger part of the Slovak territory, with exception of high mountains and large conifer woodlands, mainly spruce monocultures. The ecological amplitude of *T. bipustulata* is relatively wide, although it is not eurytopic species. Often occurs in light deciduous woodlands, groves and xerothermic habitats as well. A remarkable finding from mountain altitudes has been made: Great Fatra Mts.: Motyčská hoľa (7181a), approx. 1150 m u. s. l., beech forest, 29. July 2001, several individuals (below only „ind.“). It is out of apparent and potential danger in Slovakia. ESI: 201202211 → 11: COAD. ESS – Great Britain: N (notable).

Triplax aenea (Schaller, 1783) – appears often, sometimes in big amounts on soft bracket fungi, mainly *Pleurotus* spp. It is one of the most frequent mycetophilous beetles of deciduous and mixed forests, alluvial groves and older gardens and parks as well; missing only in cold mountain conifer forests. *T. aenea* and the majority of relatives occur during summer and in the beginning of autumn, when the weather is humid and they have sufficiency of bracket fungi. It ranks among widespread, not threatened species in Slovakia. ESI: 101102211 → 9: COAD. ESS – Germany and Austria: R.

Triplax elongata Lacordaire, 1842 – occurs sporadically, very locally and rarely in warm deciduous forests of Central and Southern Europe (the range goes down to the east, but is little-known and obviously discontinuous). ROUBAL (1936) mentions only one old record from Zvolen. Only three further findings after the Second World War are available: Remetské Hámre (7199a), July 1955, 3 ind., Rektorič lgt. et coll. (HAVELKA 1964); Banská Bystrica – Urpín (7280d), bracket fungi (*Pleurotus* spp.) on and old beech stem 5. June 1982, Franc lgt. et coll.; Hontianske Nemce (7779b), bracket fungi (*Pleurotus* spp.?) – too soon period) 18. and 26. April 1998, several ind.!, Kubinec & Kupec lgt. et coll. ESI:

215415321 → 24: R. ESS – Germany: Ex/M (extinct or missing), Austria: E. It is surprisingly missing in the Red List of Slovakia.

Triplax melanocephala (Latreille, 1804) – occurs scatteringly and mostly rarely in warm deciduous forests of Southern and Central Europe, often preferring xerothermic habitats.

According to my observations it does not live only in tree fungi from orders Polyporales and Agaricales, but in ground fungi – Boletales as well. ROUBAL (1936) mentions only 2 old records: Malé Karpaty Mts. – Píla and ‚Inovec‘ (probably Považský Inovec Mts.). HAVELKA (1964) adds ‚Belanské kopce‘ – recently known as Hegyfarak (8178a), June 1957, on *Polyporus* sp. Recently I have found it on drying, difficultly identifiable Boletaceae, or by sweeping the vegetation of xerothermic slopes: Plášťovce (7879b) 3. June 1985, 3 ind., 14. June 1987 and 16. June 1996, 2 ind.; Gemerské Dechtáre (7786a) 10. June 1995; Kováčovce – Hradište (7882d) 28. June 1989. ESI: 325415321 → 26: R.ESS – Germany: E. (It is missing in Red Lists of Northern European countries because does not occur there.)

Triplax lacordairei Crotch, 1870 – occurs scatteringly and utmost rarely in warm deciduous forests of Western and Southwestern Europe. Only a few isolated records from France, Austria, Germany and Great Britain are available (VOGT 1967, HYMAN & PARSONS 1992). The first and meanwhile single record for Slovakia has been published: Plášťovce, on bracket fungi *Pleurotus dryinus* on an oak stem 4. August 1996 (FRANC 1997). This little known species of a relatively large, but apparently discontinuous Atlanto-Mediterranean range ranks among the most threatened beetles of Slovakia. ESI: 325515321 → 27: V.

ESS – Great Britain: R, Austria: V (FRANZ 1983) or Ex/M (GEISER 1983). Although its distribution in Slovakia is meanwhile nearly unknown, it seems that ought to be listed among vulnerable species (eastern boundary of the range).

Triplax pygmaea Kraatz, 1871 – occurs sporadically and very rarely in warm deciduous forests of Southern and Central Europe. ROUBAL (1936) mentions the first record for the former Czechoslovakia from the surroundings of Rimavská Sobota (29. April 1928), the second record: Zvolen – probably the contemporary Nature reservation ‚Boky‘ – is dateless.

Only 4 postwar records are available: Remetské Hámre, June 1959 (GOTTWALD 1963); Plášťovce, on bracket fungi (*Polyporus* sp.) on an old cherry tree 30. May 1988, 2 ind., Franc lgt. et coll.; Štúrovo – Hegyfarak (8178a), the beginning of 80ies (MAJZLAN & RYCHLÍK 1997a) and Kamenec pod Vtáčnikom (7377a), autumn 1996 (MAJZLAN & RYCHLÍK 1997b). ESI: 325515321 → 27: V. ESS – Austria: E. (In Slovakia it ought to be listed at least among category R.)

Triplax russica (Linnaeus, 1758) – a relatively frequent species, living on tree fungi (*Pleurotus*, *Polyporus*, *Pholiota* spp.) in deciduous and mixed forests from lowlands to hilly areas. Sometimes occurs in big amounts in Central Slovakia. I have made a remarkable finding from mountain altitudes: Veľká Fatra Mts.: Skalná (7080c), approx. altitude 1150 m, on an old beech 1. July 1994. It is a widespread, not threatened species in Slovakia. ESI: 201103211 → 11: COAD. ESS – Austria: N, Denmark: D (decreasing).

Triplax collaris (Schaller, 1783) – occurs very locally and rarely in warm deciduous, often alluvial forests. It is even missing in ‚Catalogue of Beetles‘ (ROUBAL 1936). The first record for Slovakia has been published from Vihorlat Mts. (710), July 1973, Gottwald & Žirovnický lgt. et coll. (GOTTWALD 1975). The further records: surroundings of Bratislava

(7769), 22. August 1987, 8 ind. V. Kubinec lgt. et coll., 1 ind. in coll. mea; Trebišov (7396), on drying fungi on an old elm 18. June 1998, 5 ind. V. Franc lgt. et coll. This species, generally considered to be very rare, may be numerously found in suitable biotopes. ŠVEC (1984) mentions that *T. collaris* clearly prefers the fungus *Pleurotus cornucopiae*. ESI: 325416341 → 29: V. ESS – Austria: V (FRANZ 1983) or E (GEISER 1983), Germany: Ex/M.

Surprisingly is missing in the Red List of Slovakia. Habitats of this relict and utmost local species deserve strict protection at all events.

Triplax lepida Faldermann, 1835 – a rare species of warm deciduous forests of Central and Southern Europe and Middle Asia; often prefers xerothermic habitats. ROUBAL (1936) mentions several old records from Southern and Central Slovakia. ŠVEC (1984) asserts that it highly prefers a little bracket fungus *Polyporus anisoporus*. Recent records: Zobor (7674d), April 1978-1981 (MAJZLAN & RYCHLÍK 1985); Ipeľské Úľany (7880c) 31. May 1980 (ŠVEC 1984); Dražovce – Plieška (7674a), the end of 80ies (VALENČÍK 1991); Vtáčnik Mts. – ‚Gepniarova dolina‘ valley (7377a), 27. June 1992 (ČERNÝ & ŠAFANDA 1997); Kováčovce – Hradište, swept from xerothermic vegetation 28. June 1989; Kamenný Most (8177b), old, difficultly identifiable bracket fungi on an oak stem 2. May 1992, 2 ind.; Svättojurský Šúr (7769c), old drying fungi on a poplar stem 13. June 1992; the last 3 records Franc lgt. et coll. I have finally made very remarkable finding from mountain altitudes: Muránska planina Mts. – Nature reservation Šarkanica (7285d), approx. altitude 800 m!, xerothermic limestone slope, on the fungi *Polyporus anisoporus* (!) 25. June 2001, 3 ind. ESI: 214434211 → 21: R. ESS – Germany: E, Austria: V.

Triplax rufipes (Fabricius, 1775) – a scattered species of deciduous forests from lowlands to mountain altitudes. It is widespread throughout nearly all Europe (with exception of high mountains), but frequently occurs only in suitable, well-preserved habitats. Geiser (1989) asserts that it lives in fungi from the genera *Polyporus* and *Pleurotus* on various deciduous trees. ROUBAL (1936) mentions 15 old records from Slovakia. Recent records: Nature reservation ‚Boky‘ (7480a), 8. June 1985; Dobrá Niva – Ďurianová (7580a), 18. July 1986, 2 ind.; Čabrad' (7780d), 30. May 1989; Zvolen – Sekier: Zálužná (7481), 20. June 1992; Čebovce (7881a) 30. May 1993; Podhradská lesostep (7076a), 21. June 1993; Poľana Mts. – Žiarec (7382a), 3. August 1993, 3 ind.; Banská Bystrica – Urpín, 13. September 1994; Veľká Fatra Mts. – Kozia skala, (7079b), approx. altitude 1050 m!, 3. August 2001, 3 ind.; all records Franc lgt. et coll. ESI: 203314211 → 17: CD. ESS – Finland: R, Denmark: Ex, Germany: E, Austria: N (FRANZ 1983) or R (GEISER 1983). High ESS of *T. rufipes* in several European countries contrast with stable and relatively frequent population in Slovakia.

Triplax scutellaris Charpentier, 1825 – quite local, but often frequent species of older deciduous (prevalingly beech) forests of Europe and Middle Asia. Beetles and larvae are living on ‚oyster‘ bracket fungi (*Pleurotus* spp.). A lot of older and recent records from Slovakia are available. ESI: 203203211 → 14: CD. ESS – Great Britain: R, Denmark: Ex, Germany: E, Austria: N (FRANZ, 1983) or V (GEISER 1983). The difference between high ESS in several European countries and stable, numerous population in Slovakia is conspicuous at first sight. Actually, it has sufficiency of suitable habitats throughout this country.

Triplax carpathica Reitter, 1890 – occurs locally and utmost rarely in ancient deciduous (mainly beech) forests. Known from a few old records from Eastern Slovakia: Remetské

Hámre (7199a), July 1955, Rektořík lgt. et coll. (HAVELKA 1964); Vihorlat Mts. (710), July 1956 (GOTTWALD 1975) and July 1961 (GOTTWALD 1963). This little known species is missing in the key by VOGT (1967)!; therefore may be confused with similar species *T. scutellaris* especially. It seems to be a relict species of a little Eastern-Carpathian range (?), deserving more attention of entomologists and conservationists. Unfortunately, neither recent records from Slovakia nor mentions in accessible Red Lists are available. ESI: 525526321 → 31: V.

Dacne bipustulata (Thunberg, 1781) – a widespread and frequent species of deciduous forests from lowlands to submountain areas. Feeds on a large scale of tree fungi. It ranks among nearly eurytopic, not threatened species throughout Europe. ESI: 201102211 → 10: COAD.

Dacne notata (Gmelin, 1788) – occurs sporadically and obviously very rarely in warmer deciduous forests from lowlands to hilly areas. ROUBAL (1936) lists it among „scarcer species“ and mentions old records from Zvolen, Harmanec and Bardejov without date and whichever further details. Only one properly localized record is accessible: Komárno (8274b), June 1947, on *Polyporus* sp. (HAVELKA 1964). ESI: 315425331 → 27: V. ESS – Germany: Ex/M, Austria: E (FRANZ 1983) or V (GEISER 1983). In Slovakia it ought to be listed at least among rare (R) species.

Dacne rufifrons (Fabricius, 1775) – a scattered but sometimes frequent species of older deciduous forests. ROUBAL (1936) mentions 3 old records from Trenčín, Zemplín and Zvolen, but without whichever further details. Recent records: Starohorské vrchy Mts. – Baranovo (7280b), on rotten fungi *Pholiota* spp. 28. September 1991; Banská Bystrica – Urpín, under the bark of a lime tree with mycelium 17. June 1992; Muránska planina – Nature reservation ‚Šance‘ (7286a), on the fungi *Pleurotus* sp. 22. June 2001, 3 ind.; all records Franc lgt. et coll. ESI: 203303211 → 15: CD. ESS – Austria: R, Germany and Sweden: V.

Combocerus glaber (Schaller, 1783) – occurs sporadically and very rarely in warmer habitats of Europe. Unlike all mentioned relatives is not directly tied to fungi. Occurs on decomposing plant debris and detritus, and occasionally under dry dung as well (ROUBAL 1936). According to own observations prefers sandy soil, that also confirms GEISER (1989). ROUBAL (1936) mentions old record from Levice (7777), September 1929; and adds several dateless records from Southern and Eastern Slovakia. HAVELKA (1964) found it near Kováčov (8178d) on an oak branch (!) in June 1957. Recent records: Belina (7785c), under old wood and plant debris on a sandy grassland 23. April 1993; Čenkov (8277b), similar circumstances 1. May 1994, Franc lgt. et coll.; Malé Karpaty Mts. – Vrchná hora (7768a), April and May 1999, 2 ind. (MAJZLAN et al. 2000). ESI: 315516340 → 28: V. ESS – Germany and Denmark: R, Austria: N, Sweden: V, Finland: D, Slovakia: E. (I suppose that ESS of *C. glaber* in Slovakia is slightly over-estimated. Really, it should be V.)

CONCLUSIONS

In this paper data concerning the distribution, ecology and conservation problems of Erotylid-beetles in Slovakia are available. Sixteen species have hitherto been seriously documented for the Slovakian fauna and the occurrence of the further two ones – *Tritoma subbasalis* Reitter, 1896 and *Dacne pontica* Bedel, 1867 – is possible or probable. The ma-

jority of Erotylidae ranks among stenotopic species with specific biotopic claims. Therefore, they occur only in some regions and approximately one half of them only in a few isolated places. According to ecosozological index assessment 4 species are, contemporarily out of apparent danger, 3 are ,care demanding, 3 are ,rare' and up to 6 ones have been specified as ,vulnerable'. Erotylid-beetles are not threatened by humans directly – they are not attractive for commercial insect collectors and their food plants (bracket fungi) are usually not edible. The serious threats for Erotylidae include intensive forestry procedures, especially changes of natural mixed forests towards monocultures, and selective cutting of old, damaged and hollow trees (in forests, but parks, alleys and gardens as well) which are still regarded as the reservoirs of so-called pests. Erotylidae deserve more attention of entomologists and conservationists – they are mostly indicators of well-preserved habitats of a high biodiversity. Erotylidae appears as a typical example for understanding the essential problem of invertebrate protection: The importance and practical action of individual protection is strongly limited because only a few specialists are able to identify the species properly and correctly. On the other hand, if our forests remain varied and miscellaneous, then also rare species of Erotylid beetles will occur more frequently.

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CHROBÁKY Z ČELADE EROTYLIDAE (COLEOPTERA) VO FAUNE SLOVENSKA

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SÚHRN

Autor v práci hodnotí a porovnáva rozšírenie a bionómiu chrobákov z čeľade Erotylidae na Slovensku. Ide o málo známu skupinu chrobákov, citovanú vo faunistických prácach len veľmi sporadicky. Erotylidae sú svojím výskytom viazané predovšetkým na stromové huby. Väčšina druhov žije v zachovalých, ľudskou činnosťou málo ovplyvnených ekosystémoch; preto ich môžeme považovať za významné bioindikátory kvality životného prostredia. Viaceré druhy Erotylidae figurujú v červených zoznamoch európskych krajín v rôznom stupni ohrozenia. V práci je porovnávaný ekosozologický status jednotlivých druhov v európskych krajinách. K zriedkavým a ohrozeným druhom patrí najmä *Triplax elongata*, *T. pygmaea*, *T. collaris* a *Combocherus glaber*. *Triplax lacordairei* je novým druhom pre faunu Slovenska.

