

CONTRIBUTIONS TO THE KNOWLEDGE OF STAPHYLINID FAUNA (COLEOPTERA: STAPHYLINIDAE) FROM THE RIGHT SIDE OF THE DNIESTER RIVER

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Abstract. The paper presents faunal, ecological and distributional data on the family Staphylinidae from the right side of the Dniester River, collected during 2008-2010 years. Totally, 51 species of Staphylinidae were collected.

Keywords: Staphylinidae, fauna, Dniester, Republic of Moldova.

Rezumat. Contribuții la cunoașterea faunei de stafilinide (Coleoptera: Staphylinidae) de pe malul drept al Nistrului. Lucrarea prezintă un studiu faunistic realizat asupra familiei Staphylinidae, de pe malul drept al Nistrului, în perioada anilor 2008-2010. Sunt citate 51 de specii de Staphylinidae. Se enumeră lista speciilor colectate cu unele date ecologice.

Cuvinte cheie: Staphylinidae, faună, Nistru, Republica Moldova.

INTRODUCTION

The Dniester River intersects the territory of the Republic of Moldova from north to south. The petrophytic ecosystems are formed along its river valley. The substratum is constituted by calcareous rocks, which emerge on the surface as strips or steep canyons along the river and its tributaries. Climate, relief and substratum cause the formation of these rocky sites. The Nistrean limestones are specific elements of landscape, forming unique ecosystems within the north-western limits of the Black Sea basin. Over 250 petrophytic plant species occur on rocky slopes and on limestone slants, with predominance of the Mediterranean plant species. An important component of this flora is grassy steppe vegetation and sub-arid forests with glades on rocky slopes.

The staphylinid beetles are an important component of the riverine ecosystems. The beetles of this family are very common in the riversides and they are rich in number of species. The staphylinids play an important role as predators most of the terrestrial ecosystems where they are very abundant. The staphylinid fauna of the Dniester River valley was studied insufficiently. During the last three years (2008-2010) we made some collecting trips to different sites in the Dniester River valley to enlarge the list of beetle species. The aim of this paper is to summarize our faunal data on staphylinid beetles in the mentioned region.

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MATERIAL AND METHODS

The staphylinids were collected manually by itinerary method in the Nistrean canyons in 2008 – 2010 from the districts: Soroca (Tătărauca Nouă village (GPS – N 48°18'; E 27°58')); Rezina (villages of Țîpova – N 47°37'; E 28°57', Lalova – N 47°34'; E 28°59'; Orhei (Vișcăuți – N 47°25'; E 29°03')); Dubăsari (Holercani (GPS – N 47°18'; E 29°04')); Căușeni (Grădinița – N 46°39'; E 29°35', Copanca – N 46°35'; E 29°42', Leuntea – N 46°40'; E 29°36'); Ștefan Vodă (Răscăeți – N 46°34'; E 29°45'). The taxonomic studies used during the identification were accomplished conformable to the following keys of identification (KRĂJANOVSCII, 1965; LOHSE, 1964, 1974).

RESULTS AND DISCUSSIONS

During the three-year study (2008-2010), 110 specimens of beetles belonging to 51 species, 31 genera, and 9 subfamilies of staphylinids were collected (Table 1). The highest species diversity is in the subfamily Tachyporinae, with 13 species from 5 genera (more than 25 % of species, Table 2). Subfamilies Aleocharinae and Staphylininae are represented by 10 species each belonging to 9 and 4 genera respectively. The Subfamily Paederinae is represented by 5 species from 5 genera. The Subfamily Oxytelinae is represented by 3 genera with four species and the subfamily Steninae is represented by one genus with one species. The Subfamily Omaliinae is presented by 2 genera and 3 species, while subfamilies Euaesthetinae and Habrocerinae by 1 species each (Table 2).

Nine species are mentioned for the first time in the fauna of the Republic of Moldova: *Euaesthetus bipunctatus*, *Anthobium fuscum*, *Atheta orbata*, *Parocyusa rubicunda*, *Quedius ochropterus*, *Heterothops niger*, *Mycetoporus baudueri*, *Leptobium dimidiatum*, *Scopaeus ryei* (MILLER & ZUBOVSKI, 1917; MEDVEDEV & SAPIRO, 1957). The most interesting of these species is *Leptobium dimidiatum* (GRIDELLI, 1926). This species was described from Romania in the beginning of XIX-th century as *Doliceon biguttulus* (LACORDAIRE in BOISDUVAL et LACORDAIRE, 1835). Now it is known from Romania, Georgia and Turkmenistan (ASSING, 1995; STAN, 2008). The new point in Moldova enlarges our knowledge of its distribution. *Sepedophilus testaceus* (8 specs), *Tachyporus hypnorum* (8 specs), *Sepedophilus marshami* (7 specs) and *Tachyporus nitidulus* (7 specs) were the most frequently collected species during

the study. *Tachyporus hypnorum* was found in 5 collecting sites, *Sepedophilus marshami* and *Tachyporus nitidulus* were found in 3 collecting sites. Also *Stenus ochropus* and *Tachyporus atriceps* were collected in 3 sites, but only 1 specimen from each site. Ten species were found only in the two sites and the remaining species were recorded only in one site. *Tachyporus hypnorum*, *T. nitidulus*, *T. solutus*, *Quedius nitipennis*, *Carpelimus corticinus* and *Anthobium fusculum* can be characterized as species with high level of adaptation to different habitats. *Leptobium dimidiatum* and *Scopaeus ryei* were noted as species with narrow habitat specialization.

The material discussed includes species with large distributional ranges (LÖBL & SMETANA, 2004), such as: Palaearctic, Transpalaearctic, West Palaearctic, Holarctic, European, Euro-Mediterranean, Transholarctic and Cosmopolitan. Most of the species are characterised by a high ecological plasticity, including eurytopous, ripicolous, sylvicolous, phytodetrilicous, humicolous, pholeophilous, hygrophilous, paludicolous, muscicolous, myrmecophilous, mycetophilous, coprophilous and xerophilous species.

Table 1. List of staphylinid species with ecological data from the right bank of the Dniester River.
Tabel 1. Lista speciilor de stafilinide cu date ecologice, identificate pe malul drept al Nistrului.

No.	Taxa	Material	Distribution	Ecological characteristics
Euaesthetinae GRAVENHORST, 1806				
1.	<i>Euaesthetus bipunctatus</i> (LJUNGH, 1804)*	1 specimen (spec), May 8, 2009, Copanca.	Palaearctic	muscicolous, hygrophilous, phytodetrilicous.
Omalinae MACLEAY, 1825				
2.	<i>Omalium caesum</i> GRAVENHORST, 1806	2 specimens (specs), May 14, 2009, Râscăeți; 1 spec, October 8, 2009, Leuntea.	Palaearctic	humicolous, phytodetrilicous, sylvicolous, hygrophilous.
3.	<i>Anthobium fusculum</i> (ERICHSON, 1839)*	1 spec, November 13, 2009, Lalova.	European	sylvicolous, xerophilous, humicolous, mycetophilous, riparian.
4.	<i>Anthobium atrocephalum</i> (GYLLENHAL, 1827)	1 spec, May 17, 2010, Vișcăuți.	Transholarctic	eurytopic, hygrophilous, humicolous, phytodetrilicous.
Aleocharinae FLEMING, 1827				
5.	<i>Ocalea badia</i> ERICHSON, 1837	1 spec, May 17, 2009, Vișcăuți.	Transpalaearctic	sylvicolous, muscicolous, hygrophilous, phytodetrilicous.
6.	<i>Acrotoma fungi</i> (GRAVENHORST, 1806)	2 specs, October 29, 2009, Râscăeți; 1 spec, March 6, 2009, Grădinița.	Transpalaearctic, North America (introduced)	ubiquitous, sylvicolous, hygrophilous.
7.	<i>Atheta orbata</i> (ERICHSON, 1837)*	1 spec, November 13, 2009, Lalova; 1 spec, October 2, 2009, Râscăeți.	Euro-Mediterranean	hygrophilous, riparian, sylvicolous, humicolous.
8.	<i>Geostiba circellaris</i> (GRAVENHORST, 1806)	1 spec, May 17, 2010, Vișcăuți; 3 specs, May 14, 2009, Râscăeți.	Holarctic	eurytopic, myrmecophilous.
9.	<i>Drusilla canaliculata</i> (FABRICIUS, 1787)	6 specs, March 30, 2010, Țipova.	Palaearctic, North America (introduced)	xerophilous, myrmecophilous, phytodetrilicous.
10.	<i>Oxypoda opaca</i> (GRAVENHORST, 1802)	1 spec, October 8, 2009, Leuntea.	Transpalaearctic	eurytopic, sylvicolous, phytodetrilicous.
11.	<i>Parocytusa rubicunda</i> ERICHSON, 1837*	1 spec, October 8, 2009, Leuntea.	Russia, Europe, Kazakhstan, Uzbekistan	phytodetrilicous, hygrophilous, psammophilous.
12.	<i>Gyrophana joyi</i> WENDELER, 1924	1 spec, October 16, 2008, Grădinița.	Euro-Mediterranean	eurytopic, sylvicolous, mycetophilous.
13.	<i>Oxypoda abdominalis</i> (MANNERHEIM, 1830)	1 spec, November 6, 2008, Grădinița.	Transpalaearctic	eurytopic, xerophilous.
14.	<i>Zyras haworthi</i> STEPHENS, 1832	1 spec, April 3, 2009, Grădinița.	Euro-Mediterranean	eurytopic, myrmecophilous, humicolous.
Staphylininae LATREILLE, 1802				
15.	<i>Philonthus carbonarius</i> (GRAVENHORST, 1802)	1 spec, March 6, 2009, Grădinița; 1 spec, May 4, 2009, Leuntea.	Palaearctic, North America (introduced)	coprophilous, sylvicolous, humicolous, phytodetrilicous.
16.	<i>Philonthus corruscus</i> (GRAVENHORST, 1802)	1 spec, May 17, 2009, Holercani.	Transpalaearctic	eurytopic, coprophilous.
17.	<i>Philonthus decorus</i> (GRAVENHORST, 1802)	1 spec, May 4, 2009, Leuntea.	Transpalaearctic	eurytopic, humicolous, hygrophilous.
18.	<i>Othius punctulatus</i> (GOEZE, 1777)	1 spec, November 6, 2009, Grădinița.	Euro-Mediterranean	humicolous, muscicolous, sylvicolous, phytodetrilicous.
19.	<i>Quedius limbatus</i> (HEER, 1839)	1 spec, April 3, 2009, Grădinița.	West Palaearctic	humicolous, stenotopic, sylvicolous, hygrophilous.
20.	<i>Quedius suturalis</i> KIESENWETTER, 1845	1 spec, October 16, 2008, Grădinița.	European	humicolous, hygrophilous, eurytopic, sylvicolous.
21.	<i>Quedius nemoralis</i> BAUDI DI SELVE, 1848	1 spec, May 14, 2009, Râscăeți.	West Palaearctic	xerophilous, sylvicolous.
22.	<i>Quedius ochropterus</i> ERICHSON, 1840*	2 specs, October 8, 2009, Grădinița.	Euro-Mediterranean	muscicolous, sylvicolous, phytodetrilicous.
23.	<i>Quedius nitipennis</i> (STEPHENS, 1833)	1 spec, August 2, 2010, Tătărauca Nouă.	Euro-Mediterranean	eurytopic, phytodetrilicous, humicolous, muscicolous, hygrophilous.
24.	<i>Heterothops niger</i> KRAATZ, 1868*	2 specs, October 29, 2009, Râscăeți.	European	phytodetrilicous, xerophilous.

Oxytelinae FLEMING, 1821				
25.	<i>Platystethus cornutus</i> (GRAVENHORST, 1802)	1 spec, November 13, 2009, Vișcăuți.	Transpalaeartic, Afrotropical, Nearctic, Oriental	eurytoic, riparian, hygrophilous.
26.	<i>Anotylus rugifrons</i> (HOCHHUTH, 1849)	1 spec, May 14, 2009, Râscăeți.	European	hygrophilous, coprophilous, phytodetriticolous.
27.	<i>Carpelimus corticinus</i> (GRAVENHORST, 1806)	1 spec, November 13, 2009, Lalova.	Palaeartic, Australian, Nearctic, Neotropical	eurytopic, hygrophilous, paludal, riparian, phytodetriticolous.
28.	<i>Carpelimus exiguus</i> (ERICHSON, 1839)	1 spec, October 8, 2009, Leuntea.	Palaeartic, Afrotropical, Australian, Oriental	stenotopic, riparian, phytodetriticolous, hygrophilous.
Steninae MACLEAY, 1825				
29.	<i>Stenus ochropus</i> KIESENWETTER, 1858 = (<i>erichsoni</i> RYE, 1864)	1 spec, November 13, 2009, Vișcăuți; 1 spec, May 14, 2009, Leuntea; 1 spec, October 29, 2009, Râscăeți.	Palaeartic	riparian, hygrophilous.
30.	<i>Stenus longipes</i> HEER, 1839	2 specs, August 2, 2010, Tătărauca Nouă.	European	riparian, hygrophilous.
31.	<i>Stenus boops</i> LJUNGH, 1810	2 specs, May 17, 2010, Holercani.	Transpalaeartic	eurytopic, riparian, phytodetriticolous, hygrophilous.
32.	<i>Stenus proditor</i> ERICHSON, 1839	1 spec, March 30, 2010, Țipova.	Transpalaeartic	stenotopic, paludicolous, hygrophilous.
Tachyporinae MACLEAY, 1825				
33.	<i>Lordithon exoletus</i> (ERICHSON, 1839)	1 spec, May 8, 2009, Grădinița.	Euro-Mediterranean	eurytopic, sylvicolous, mycetophilous.
34.	<i>Mycetoporus bauderi</i> MULSANT & REY 1875* (= <i>helliessenii</i> A. STRAND, 1950)	2 specs, May 14, 2009, 1 spec, October 29, 2009, Râscăeți; 1 spec, October 8, 2009, Grădinița.	West Palaeartic	eurytopic, sylvicolous, mycetophilous.
35.	<i>Mycetoporus forticornis</i> FAUVEL, 1875	1 spec, October 16, 2008, Grădinița.	European	eurytopic, thermophilous, muscicolous, humicolous.
36.	<i>Mycetoporus eppelsheimianus</i> FAGEL, 1968 (= <i>brucki</i> auct. nec PANDELLE, 1869)	1 spec, April 3, 2009, Grădinița.	European	stenotopic, muscicolous, sylvicolous, humicolous.
37.	<i>Sepedophilus immaculatus</i> (STEPHENS, 1832)	1 spec, November 6, 2008, 1 spec, March 6, 2009, Grădinița.	Transpalaeartic, Oriental	humicolous, sylvicolous.
38.	<i>Sepedophilus testaceus</i> (FABRICIUS, 1793)	6 specs, May 8, 2009, Grădinița, 2 specs, October 8, 2009, Leuntea.	Holarctic	eurytopic, mycetophilous, phytodetriticolous, humicolous.
39.	<i>Sepedophilus marshami</i> (STEPHENS, 1832)	1 spec, November 6, 2008, 1 spec, April 3, 2009, 1 spec, May 8, 2009, Grădinița; 1 spec, May 20, 2009, Râscăeți; 3 specs, October 8, 2009, Leuntea.	Palaeartic, North America (introduced)	eurytopic, mycetophilous, sylvicolous.
40.	<i>Sepedophilus obtusus</i> (LUZE, 1902)	1 spec, October 16, 2008, 1 spec, April 3, 2009, Grădinița; 1 spec, October 29, 2009, Râscăeți.	Euro-Mediterranean	xerophilous, sylvicolous.
41.	<i>Tachyporus atriceps</i> STEPHENS, 1832	1 spec, November 13, 2009, Lalova; 1 spec, May 8, 2009, Grădinița; 1 spec, August 2, 2010, Tătărauca Nouă.	Palaearctic	eurytopic, muscicolous, riparian, hygrophilous.
42.	<i>Tachyporus hypnorum</i> (FABRICIUS, 1775)	1 spec, March 6, 2009, 2 specs, October 8, 2009, Grădinița; 1 spec, November 13, 2009, Lalova; 1 spec, March 30, 2010, Țipova; 2 specs, October 29, 2009, Râscăeți; 1 spec, August 2, 2010, Tătărauca Nouă.	Transpalaeartic	ubiquitous, muscicolous, phytodetriticolous, humicolous, hygrophilous.
43.	<i>Tachyporus nitidulus</i> (FABRICIUS, 1781)	1 spec, November 6, 2008, 1 spec, March 6, 2009, 1 spec, October 8, 2009, Grădinița; 1 spec, October 8, 2009, Leuntea; 3 specs, October 29, 2009, Râscăeți.	Cosmopolitan	ubiquitous, sylvicolous, hygrophilous, muscicolous, phytodetriticolous.
44.	<i>Tachyporus solutus</i> ERICHSON, 1839	1 spec, March 6, 2009, Grădinița.	Transpalaeartic	eurytopic, xerophilous, muscicolous, detriticolous.
45.	<i>Tachinus corticinus</i> GRAVENHORST, 1802	1 spec, April 3, 2009, Grădinița; 1 spec, May 20, 2009, Râscăeți.	Palaeartic, North America (introduced)	ubiquitous, hygrophilous, phytodetriticolous.
Paederinae FLEMING, 1821				
46.	<i>Leptobium dimidiatum</i> (GRIDELLI, 1926) * = <i>Dolicoaon biguttulus</i> (LAC.)	1 spec, May 14, 2009, Leuntea.	Euro-Mediterranean	halophilous.
47.	<i>Rugilus subtilis</i> (ERICHSON, 1840)	1 spec, May 8, 2009, Grădinița.	European	sylvicolous, hygrophilous.
48.	<i>Scopaeus ryei</i> WOLLASTON, 1872*	1 spec, October 29, 2009, Râscăeți.	European	xerophilous.

49.	<i>Sunius fallax</i> (LOKAY, 1919)	1 spec, October 16, 2008, Grădinița; 2 specs, October 8, 2009, Leuntea.	European	sylvicolous, hygrophilous.
50.	<i>Tetartopeus scutellaris</i> (NORDMANN, 1837)	1 spec, August 2, 2010, Tătărauca Nouă.	Euro-Mediterranean	hygrophilous, riparian.
Habrocerinae , MULSANT & REY 1877				
51.	<i>Habrocerus capillaricornis</i> (GRAVENHORST, 1806)	1 spec, November 6, 2008, 1 spec, May 8, 2009, Grădinița; 1 spec, October 8, 2009, Leuntea.	Palaeartic, Australian, Nearctic, Neotropical	eurytopic, mycetophilous, humicolous.

Legend: The species with (*) are mentioned for the first time in the Republic of Moldova.

Legendă: Speciile marcate cu asterisc (*) sunt menționate pentru prima dată în fauna Republicii Moldova.

Table 2. Percentage and taxonomic structure of staphylinids collected from the right side of the Dniester River, 2008-2010.

Tabel 2. Structura taxonomică și procentuală a stafilinidelor colectate de pe malul drept al Nistrului, 2008-2010.

No.	Subfamilies	No. of species	%	No.	Subfamilies	No. of species	%
1.	Euaestetinae	1	1.96	6	Steninae	4	7.84
2.	Omaliinae	3	5.88	7	Tachyporinae	13	25.49
3.	Aleocharinae	10	19.61	8	Paederinae	5	9.81
4.	Staphylininae	10	19.61	9	Habrocerinae	1	1.96
5.	Oxytelinae	4	7.84	Total	9	51	100

CONCLUSIONS

The staphylinid beetles collected from the right side of the Dniester River belong to 9 subfamilies, 31 genera and 51 species. The species list of this family in the Republic of Moldova was supplemented by 9 species. The examined zone Transpalaeartic, Euro-Mediterranean, European and Palaeartic staphylinid species prevailed. The identified rove beetles belong to the following ecological categories: coprophilous, eurytopic, hygrophilous, humicolous, muscicolous, mycetophilous, myrmecophilous, paludal, phytodetriticolous, psammophilous, riparian, stenotopic, sylvicolous, thermophilous, xerophilous.

REFERENCES

- ASSING V. 2005. *A revision of the genus Leptobium Casey (Coleoptera: Staphylinidae: Paederinae)*. Stuttgarter Beiträge zur Naturkunde Serie A (Biologie). 673: 1-182.
- KRYŽANOVSKIĀ O. L. 1965. *Opredelitel' nasekomykh evropejskoj časti SSSR*. Moskva-Leningrad: Nauka. 2. 646 pp. [In Russian].
- LÖBL I. & SMETANA A. (Eds.). 2004. *Catalogue of Palaeartic Coleoptera. Hydrophiloidea-Staphylinoidea*. Stenstrup: Apollo Books. 2. 942 pp.
- LOHSE G. A. 1964. *Familie: Staphylinidae*. In: Freude, H., Harde, K. W. & Lohse, G. A. (Eds.). Die Käfer Mitteleuropas. Band 4, Staphylinidae I (Micropeplinae bis Tachyporinae). Krefeld: Goecke & Evers Verlag. 264 pp.
- LOHSE G. A. 1974. *Familie: Staphylinidae*. In: Freude, H., Harde, K. W. & Lohse, G. A. (Eds.). Die Käfer Mitteleuropas. Band 5, Staphylinidae II (Hypocyphtinae und Aleocharinae). Pselaphidae. Krefeld: Goecke & Evers Verlag. 381 pp.
- MEDVEDEV S. I. & ŠAPIRO D. S. 1957. *K poznaniu fauny žukov (Coleoptera) Moldavskoj SSR i sopredel'nyh rajonov Ukrainy*. "Trudy Naučno-issledovatel'skogo instituta biologii i biologičeskogo fakul'teta Harikovskogo gosudarstvennogo universiteta". 30: 173-206. [In Russian].
- MILLER E. & ZUBOWSKY N. 1917. *Materialy po entomologičeskoj faune Bessarabii*. Trudy Bessarabskogo obščestva estestvoispytatelej i ljubitelej estestvoznaniâ. Čast' 1. Kišinev: Tipografiâ Bessarabskogo Gubernskogo Pravleniâ. 2: 32-150. [In Russian].
- STAN MELANYA. 2008. *New data on the rove beetle fauna (Coleoptera: Staphylinidae) from Bucharest and its surroundings*. Travaux du Muséum National d'Histoire Naturelle «Grigore Antipa». București. 52: 369-386.

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