

Leaf-beetles (Coleoptera, Chrysomelidae) in Rimetea area (district of Alba, România)

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Abstract:

A research made in Rimetea area on leaf-beetle group has revealed a number of 47 species from 5 subfamilies, characteristic both to xeric (Cryptocephalinae, Alticinae) and moist (Chrysomelinae, Cassidinae) zones, leaf-beetle biodiversity reflecting the habitat diversity of the area. A number of 6 identified species are rare for Romanian fauna and endangered.

Keywords: leaf-beetles, Rimetea, habitats fauna

Chrysomelidae (Coleoptera), known as leaf-beetles, represent an interesting beetle group, with generally small dimensions, 1-14 mm rarely more, but it remarks by it's divers and intense colors, frequently with metallic shining, so as by it's varied body shape in different species or groups. All are herbivorous insect species, both in larvae and adult stages, occupying the first link in the chains of the trophy nets of the ecosystems. More of these have a specificity for any plant species or groups, so as for any habitats, so that leaf-beetles biodiversity reflects proportionally the diversity of the vegetation and habitat conditions in a studied area.

The research of leaf-beetles in Romania is scarce, reflected in a manner in old works (SEIDLITZ 1891; FLECK 1905, PETRI 1912, MARCU, 1927, 1928, 1936), so that in any works from the second half of the 20th century (IENIȘTEA 1969, 1974, 1975; KONNERT-IONESCU, 1963; MARCU, 1957; NEGRU, 1968; NEGRU & ROȘCA 1967; ROȘCA 1973, 1974, 1976), treated in a large context referring to the beetle group.

A research concentrated on leaf-beetle group was started beginning with the last decade of the 20th century (GRUEV et al. 1993; CRIȘAN, 1993, 1994, 1995; CRIȘAN & TEODOR, 1994, 1996, CRIȘAN & BONEA, 1995; CRIȘAN & DRUGUȘ, 2001; CRIȘAN et al., 1998, 1999, 2000; SZEL et al., 1995; ILIE 1999; MAICAN & SERAFIM 2001), but the group rest still little known in our country, referring to fauna, ecology and zoogeographical aspects.

The Aries river basin, was also studied by us concerning leaf-beetle fauna (CRIȘAN et al. 2003-2004; CRIȘAN & TEODOR, 2004, 2005), but the present work is focused only on Rimetea area, included in the same region, which is an apart zone both referring to the natural and social characteristics.

Material and methods

Observations and insect collections were made during the summer 2002 (may- august) in some points of Rimetea area sampling the most illustrative habitats of the zone, starting with the stones of "Piatra Secuiului" to the moist lawns nearby the Rimetea valley and the valley's mouth nearby the Aries river. We used the entomological specific methods of collection, by an insect net, sweeping the vegetation in a same amount in each point. Identification of the material was made in the laboratory using specific litterature (MOHR, 1966; KASZAB 1967-1971; KIPPENBERG ȘI DOBERL, 1986; WARKALOWSKI, 1993; ROZNER, 1996).

Results and discussion

Bellow (Table 1.) we present the taxonomical list o leaf-beetles captured and identified in different habitats of the Rimetea area, mentioning the capture date, the number of individuals, relative abundance, and the place of capture with the type of habitat.

At all, 47 species of leaf-beetles were identified in the area, from 5 subfamilies and 22 genera. The degree of representation of each subfamily according to the number of identified species in the Rimetea area is presented in Fig. 1. The subfamilies Chrysomelinae and Alticinae (each with 13 species) were the best represented, so as Cryptocephalinae subfamily, with 11 species. Clytrinae subfamily (with 7 species) is also better represented in the area, considering the relative lower number of Central European leaf-beetles species in this subfamily.

Concerning the biodiversity among the leaf-beetle genera, the genus *Cryptocephalus*, with 10 species in the area, have had the absolute record; the others being represented with only 1-4 species.

Table 1

Leaf-beetle, Chrysomelidae (Coleoptera), captured in Remetea area in 2002

Subfamily / Species	Date of capture	Nr. ind.	A. %	Place of capture, habitate, host plant
I. Clytrinae Kirby 1837				
Labidostomis lucida (Germar 1823)	31 05	1	0,5	R., mezophilous hayland
	12 07	1	0,5	R., valley meadow
	15 07	4	2,0	Colțești, herbs, bushes
Clytra laeviscula Ratzenburg 1837	31 05	2	1,0	R., valley meadow, Salix
	12 07	1	0,5	R., valley meadow, Salix
Clytra appendicina Lacordaire 1848	16 07	1	0,5	R., mezophilous lawn
	16 07	2	1,0	R., mezophilous glade
Smaragdina xanthaspis (Germar 1824)	01 06	1	0,5	R., valley meadow to the valley mouth
Smaragdina salicina (Scopoli 1763)	31 05	2	1,0	R., valley meadow, Salix
	31 05	1	0,5	R., herbs with Urtica
Smaragdina aurita (Linnaeus 1767)	12 07	1	0,5	Piatra Secuiului, lawn at 1129 m. altitude
Coptocephala unifasciata (Scopoli 1763)	31 08	1	0,5	R., hayland, S-E oriented
II Cryptocephalinae Gyllenhal 1813				
Pachybrachys sinuatus Mulsant et Rey 1859	16 07	1	0,5	R., to Colțești, on bushes
Cryptocephalus (Cryptocephalus) octopunctatus (Scopoli 1763)	31 05	1	0,5	R., on Salix in the valley meadow
Cryptocephalus (Cryptocephalus) violaceus Lacharting 1781	31 05	1	0,5	R., valley meadow, herbs
	31 05	1	0,5	R., on Trifolium repens
Cryptocephalus (Cryptocephalus) hipochoeridis (Linnaeus 1758)	31 05	2	1,0	R., mezophilous hayland
	12 07	1	0,5	Colții Secuiului, lawn
	16 07	1	0,5	R. mezohygrofilous glade
Cryptocephalus (Cryptocephalus) sericeus (Linnaeus 1758)	11 07	1	0,5	R., valley meadow, herbs
	12 07	3	1,5	R. valley meadow, pasture
	13 07	3	1,5	To the ironmine, lawn
	15 07	2	1,0	Colțești, pasture, herbs
Cryptocephalus (Cryptocephalus) vittatus Fabricius 1775	12 07	1	0,5	R., lawn, S-E oriented
	14 07	1	0,5	R. mezophilous pasture
Cryptocephalus (Cryptocephalus) moraei (Linnaeus 1758)	12 07	2	1,0	Colții Secuiului, lawn
	12 07	1	0,5	R. pasture, valley meadow
	13 07	1	0,5	To the ironmine, lawn
	14 07	1	0,5	R., mezophilous pasture
	31 08	1	0,5	R., mezophilous hayland
Cryptocephalus (Cryptocephalus) flavipes Fabricius 1781	12 07	1	0,5	Colții Secuiului, pasture, mezohygrophilous zone
Cryptocephalus (Burlinius) fulvus Goeze 1777	12 07	2	1,0	R., mezophilous lawn, S-E. oriented
Cryptocephalus (Burlinius) vittula Suffrian 1848	12 07	1	0,5	Piatra Secuiului, lawn at 1129 m. altitude
Cryptocephalus (Burlinius) connexus Olivier 1808	16 07	1	0,5	R., pasture, S-E oriented slope
III. Chrysomelinae Latreille 1802				
Chrysolina (Menthastriella) herbacea Duftschmid 1825	31 05	1	0,5	R., herbs, valley meadow R.,
	11 07	12	6,0	herbs, valley meadow R.,
	31 08	2	1,0	herbs, valley meadow
Chrysolina (Erythrochrysa) polita (Linnaeus 1758)	11 07	1	0,5	R., on thistles
	11 07	1	0,5	R., herbs, valley meadow
	31 05	1	0,5	R., herbs, valley meadow
Chrysolina (Ovostoma) olivieri (Bedel 1892)	12 07	2	1,0	R., lawn, valley meadow
Chrysolina (Sphaeromela) varians Schaller 1783	12 07	1	0,5	R., lawn, valley meadow

Subfamily / Species	Date of capture	Nr. ind.	A. %	Place of capture, habitate, host plant
<i>Chrysolina (Colaphosoma) sturmi</i> (Westhoff 1882)	31 08	1	0,5	R., lawn, valley meadow to the valley mouth
<i>Chrysolina (Fastuolina) fastuosa</i> (Scopoli 1763)	11 07	1	0,5	R., lawn, valley meadow
	12 07	2	1,0	R., lawn, valley meadow
	16 07	1	0,5	R., mezophilous lawn
<i>Oreina (Allorina) caerulea</i> (Olivier 1790)	16 07	2	1,0	R., grazed mezophilous lawn
<i>Gastroidea polygona</i> (Linnaeus 1758)	15 07	1	0,5	Colțești, herbs and bushes
<i>Plagioderia versicolora</i> (Laicharting 1781)	12 07	1	0,5	R., on Salix in the valley meadow
<i>Linaeidea (Linaeidea) aenea</i> (Linnaeus 1758)	15 07	1	0,5	Colțești, on Salix capraea
<i>Chrysomela (Chrysomela) populi</i> Linnaeus 1758	31 05	1	0,5	R., on Salix in the valley meadow
<i>Gonioctena (Gonioctena) linnaeana</i> (Schrank 1781)	31 05	4	2,0	R., on bushes, along the valley
<i>Phratora (Phratora) vitellinae</i> (Linnaeus 1758)	31 05	8	4,0	R., valley meadow, Salix
	11 07	2	1,0	R., valley meadow, Salix
IV. Alticinae Kutschera 1859				
<i>Phyllotreta armoraciae</i> (Koch 1803)	12 07	4	2,0	Colții Secuiului, lawn, mezoxerophilous zone
<i>Aphthona lacertosa</i> (Rosenhauer 1847)	31 05	19	9,5	R., mezophilous lawn
	31 05	3	1,5	R. valley meadow hayland
	31 05	18	9,0	R., grazed vegetation
	12 07 12	1	0,5	R., grazed vegetation
	07 12 07	1	0,5	Colții Secuiului, lawn
	16 07	1	0,5	Piatra Secuiului, lawn at 1129 m altitude
<i>Longitarsus (Longitarsus) jacobaeae</i> (Waterhouse 1858)	01 06	1	0,5	R., hygrophilous herbs
	12 07	1	0,5	R., valley meadow, lawn
<i>Longitarsus (Longitarsus) lycopi</i> (Foudras 1860)	11 07	2	1,0	R., hygrophilous herbs in the valley meadow
<i>Longitarsus (Longitarsus) pratensis</i> (Panzer 1794)	31 08	1	0,5	R., mezophilous lawn, S-E oriented slope
<i>Altica oleracea</i> (Linnaeus 1758)	11 07	2	1,0	R., hygrophilous herbs
	12 07	3	1,5	Piatra Secuiului, lawn at 1129 m altitude
	16 07	1	0,5	R., mezophilous lawn
<i>Batophila fallax</i> Weise 1888	01 06	4	2,0	R., herbs to the valley mouth
<i>Asiolestia ferruginea</i> (Scopoli 1763)	31 05	7	3,5	R., mezophilous lawn
<i>Asiolestia transsylvanica</i> (Fuss 1864)	01 06	1	0,5	R., hygrophilous lawn to the valley mouth
<i>Crepidodera aurata</i> (Marshall 1802)	31 05	25	12	R., valley mouth, on Salix
	11 07	3	1,5	R., Salix, in valley meadow
<i>Chaetocnema (Tlanoma) tibialia</i> (Illiger 1807)	31 05	1	0,5	R., herbs in valley meadow
<i>Chaetocnema (Chaetocnema) hortensis</i> (Geoffroy 1785)	11 07	1	0,5	R., herbs in valley meadow
<i>Dibolia (Eudibolia) schillingi</i> (Letzner 1847)	31 05	3	1,5	R., varied herbs with <i>Urtica dioica</i>
V. Cassidinae Gyllenhal 1813				
<i>Cassida (Cassida) lineola</i> Creutzer 1799	15 07	1	0,5	Colțești, herbs and bushes
<i>Cassida (Cassida) denticollis</i> Suffrian 1844	11 07	1	0,5	R., mezophilous lawn, S-E oriented slope
<i>Cassida (Cassida) vibex</i> Linnaeus 1767	12 07	1	0,5	R., mezophilous lawn in the valley meadow

Abbreviations: Nr. ind. = number of individuals, A.= abundance; R.= around Rimetea village; S-E= South- East

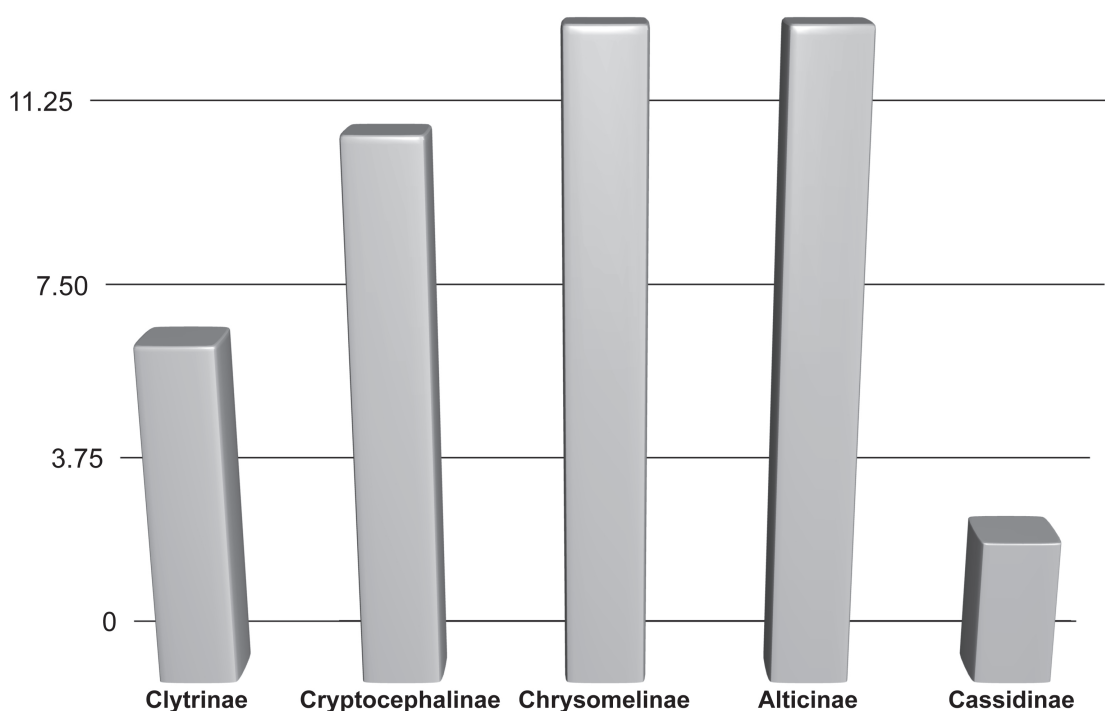


Fig.1. Diagram of representation of leaf-beetle subfamilies according to the number of identified species in Rimetea area

These results reflect the great variety of the habitats in Rimetea area, manifested also by the great biodiversity of the vegetation and the variety of the biotope conditions, so as of the landscape.

A lot of the leaf-beetle species existing in Rimetea area are Central European common species, with a large spread in Transylvanian county, so as in the whole of the country; although some leaf-beetles are rare species for this region, with a restricted spread. From this category can be mentioned: *Clytra appendicina*, *Smaragdina xanthaspis*, *Cryptocephalus fulvus*, *Gonioctena linnaeana*, *Asiolestia transsylvanica*, *Dibolia schillingi*.

The above considerations on leaf-beetle group, added to the beauty of the landscape, makes from the Rimetea area an interesting zone, both on scientific and tourism fields, this being an area in which the human's impact is less obvious.

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