

## Data on leaf-beetle fauna (Coleoptera: Chrysomelidae) in the North-West Transylvania (Romania)

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### Rezumat:

### Date asupra faunei de crizomelide (Coleoptera: Chrysomelidae) în partea de Nord-Vest a Transilvaniei (România)

Un studiu al faunei de crizomelide din trei zone reprezentative ale Podișului Someșan, Bobâlna, Dăbâca și Vultureni, a relevat prezența a 60 specii, din 16 genuri și 8 subfamilii. Dominante, în privința numărului de specii identificate, au fost subfamiliile Alticinae și Cryptocephalinae, acestea având mai multe specii mezoxyrofile, adaptate condițiilor oferite de pantele sudice și sudestice ale dealurilor din zonele cercetate. S-a remarcat de asemenea numărul mare de indivizi capturați din specia *Galeruca tanaceti* în zona Dăbâca, explicabil prin prezența abundentă a plantei gazdă preferată de această specie. Studiul a relevat și prezența unor specii rare de crizomelide în zonele cercetate.

### Keywords: Leaf-beetles, faunistics, ecology, "Podișul Someșan" (Romania)

There are relative few works about the leaf-beetle fauna in Romania. More representative are the works of SEIDLITZ (1891) and PETRI (1912) for Transylvania county, of FLEK (1905), for Muntenia county, and of MARCU (1927, 1928, 1936), for Moldova county. Later, after the middle of the 20<sup>th</sup> century, some authors as KONNERT-IONESCU (1963), NEGRU (1968), LENISTEA (1968, 1974, 1975), ROSCA (1973, 1974, 1976) and others dealt with beetle fauna in different regions of Romania, mentioning also about leaf-beetles. Recently, GRUEV et all. (1993), SZEL et all. (1996) treated also some groups of leaf-beetles of the Romanian fauna. Starting with 1992, we initiated a more ample study of leaf-beetle fauna (CRISAN 1993 a, b, 1995, CRISAN and TEODOR, 1994, CRISAN and BONEA, 1995, CRISAN et all., 1998, 1999). The present paper represent a continuation of these works.

### Material and methods

During the summer 2000, we investigated three representative areas of North-West Transylvania, in the geographical region named "Podișul Someșan". These areas are situated

between 30 km and 60 km North of Cluj-Napoca and correspond with the zones nearby the localities Vultureni, Dăbâca and Bobâlna. All the three investigated areas have many hills, with strongly tilted slopes, covered with foliaceous forests (of *Quercus ceris* and *Q. robur*, mostly), to the top and with lawns in the rest.

At Bobâlna we sampled a forest situated at the locality entrance, and a mezophylos lawn, nearby the forest, both ecosystems situated on a slope tilted of 15-35° to South and South-East. At Dăbâca, insects were collected in a foliaceous forest and a neighboring mezophylos lawn, both situated to the North-East part of a hill, not far from the locality. The slopes are tilted also with 15-35°. At Vultureni, samples were taken also in a forest of *Quercus ceris* mixed with *Q. robur*, and in the neighboring lawns, situated on slopes inclined with 10-20° to East, South and South-East.

Each sample consisted on 50 sweeps of the vegetation with an entomological net. Separated samples were taken inside the forests, to the forest skirts and in the lawns. The collected insects were placed in 80° alcohol and than were kept dry. The identification of the insects was made in the laboratory, using many scientific literature (MOHR, 1996; KASZAB, 1962-1971; PANIN, 1951; WARCHALOWSKI, 1993; KIPPENBERG & DOBERL, 1994; ROZNER, 1996).

### Results, discussion and conclusions

Table 1 shows the identified leaf-beetles captured in the three mentioned zones, Vultureni, Dăbâca and Bobâlna. The table follows the taxonomical order of the subfamilies and genera, and presents also the capturing dates, the number of individuals captured from each species, the relative abundance, the places, ecosystem and slope exposition.

In the whole researching period, we captured 409 leaf-beetle individuals, on which we identified 60 species, from 16 genera and 8 subfamilies. This represents a relative great biodiversity inside the leaf-beetle group, in correspondance with the great biodiversity of the vegetation, especially in the lawns and the forest skirts. The real biodiversity in leaf-beetle fauna in the "Podișul Someșan" area may be greater than that we concluded, having in mind that the summer 2000 was a very droughy period.

Concerning the repartition of the species on subfamilies (Fig.1), Alticinae subfamily dominated with 27 species (45%), followed by Cryptocephalinae subfamily, with 9 species (15%), fact we explain also by the climatic conditions of the summer 2000, these two families having many mezoxyerophylos or even xerophylos species.

The best represented genera were *Longitarsus* (Alticinae), with 11 species (18,3 %) and *Cryptocephalus* (Cryptocephalinae), with 9 species (15%).

Concerning the number of individuals, dominating were the species *Galeruca tanaceti* with 134 individuals (32,7 %), *Asiorestia ferruginea* with 34 individuals (8,3%) and *Cryptocephalus moraei* with 26 individuals (6,3 %). The abundant presence of the prefered plant, a *Centaurea* species, who constitutes food both for *Galeruca tanaceti* adults and larvae, caused insect abundance, while for *Asiorestia ferruginea* and *Cryptocephalus moraei* the explanation of a greater number of individuals is related to the climatic conditions of the summer 2000.

The repartition of the captured species on ecosystems and ecoton indicates the follow order: 40 species (66,7 %) in the lawns, 38 species (63,3 %) in the forest skirts and 8 species (13,3 %) in the forests. This result is explained by a greater fitodiversity of the first two ecological categories.

The repartition of the captured species on the three localities indicate: 44 species (73,3 %) for Vultureni, 24 species (40 %) for Bobâlna and 14 species (23,3 %) for Dăbâca.

The number of the species common for the three localities was only of 3 (5 %), common

Table 1

List of the species of Chrysomelidae captured during the summer 2000 in  
Bobâlna, Dăbâca and Vultureni zones, district of Cluj

Subfamily/Species	Collecting date	Nr. ind.	Abund. %	Capt. place /ecosystem
Criocerinae Latreille, 1807				
<i>Oulema melanopus</i> (Linnaeus, 1758)	6 VI	1	0,24	B-lawn, S
	24 VI	1	0,24	V-lawn, S-E
	29 VII	1	0,24	V-lawn, S-E
<i>Oulema (Haspidolema) erichsoni</i> (Suffrian, 1841)	6 VI	1	0,24	B-skirts
	7 VI	1	0,24	D-skirts
<i>Oulema (Haspidolema) gallaeciana</i> (Heyden, 1870)	24 VI	1	0,24	V-skirts
	7 VI	1	0,24	D- in forest
Clytrinae Kirby, 1837				
<i>Labidostomis longimana</i> (Linnaeus, 1761)	6 VI	4	0,97	B-lawn, S
	7 VI	5	1,22	D-lawn, N-E
	24 VI	3	0,72	V-lawn S-E
	24 VI	1	0,24	V-lawn, S
	6 VI	1	0,24	B-lawn, S
<i>Smaragdina salicina</i> (Scopoli, 1763)	6 VI	5	1,22	B-skirts
<i>Smaragdina aurita</i> (Linnaeus, 1767)	7 VI	2	0,48	D-skirts
<i>Smaragdina xanthaspis</i> (Germar, 1824)	24 VI	1	0,24	V-skirts
<i>Coptocephala unirasciata</i> (Scopoli, 1763)	16 VIII	1	0,24	V-lawn, E
Cryptocephalinae Gyllenhal, 1813				
<i>Cryptocephalus aureolus</i> Suffrian, 1847	6 VI	6	1,46	B-lawn, S
	7 VI	1	0,24	D-lawn, N-E
	6 VI	1	0,24	B-skirts
<i>Cryptocephalus moraei</i> (Linnaeus, 1758)	6 VI	5	1,22	B-lawn, S
	7 VI	12	2,93	D-lawn, N-E
	29 VII	1	0,24	V-lawn, S
	29 VII	2	0,48	V-skirts
	29 VII	4	0,97	V-lawn, E
	16 VIII	1	0,24	V-lawn, E
<i>Cryptocephalus vittatus</i> Fabricius, 1775	6 VI	1	0,24	B-lawn, S
<i>Cryptocephalus (Burlinius) bilineatus</i> (Linnaeus, 1767)	6 VI	1	0,24	B-skirts
	24 VI	1	0,24	V-lawn, S
	24 VI	2	0,48	V-lawn, S-E
	15 VIII	2	0,48	V-lawn, E
<i>Cryptocephalus hippochoeridis</i> (Linnaeus, 1758)	24 VI	4	0,97	V-lawn, E
	24 VI	1	0,24	V-skirts
	6 VI	2	0,48	B-lawn, S
<i>Cryptocephalus octacosmus</i> (Bedel, 1891)	24 VI	1	0,24	V-lawn, S-E
<i>Cryptocephalus bipunctatus</i> (Linnaeus, 1758)	6 VI	1	0,24	B-skirts

Subfamily/Species	Collecting date	Nr. ind.	Abund. %	Capt. place /ecosystem
<i>Cryptocephalus (Burlinius) connexus</i> (Olivier, 1808)	29 VII	1	0,97	V-lawn, S
	29 VII	5	0,24	V-lawn, S-E
	15 VIII		1,22	V-lawn, E
<i>Cryptocephalus sericeus</i> (Linnaeus, 1758)	15 VIII	2	0,48	B-lawn, S
Lamprosomatinae Lacordaire, 1848				
<i>Omorphus concolor</i> Sturm, 1807)	29 VII	1	0,24	V-lawn, S-E
	29 VII	1	0,24	V-skirts
	15 VIII	8	1,95	D-lawn/skirts
	15 VIII	1	0,24	V-lawn, E
Chrysomelinae Latreille, 1802				
<i>Chrysolina (Sphaeromela) varians</i> (Schaller, 1783)	24 VI	1	0,24	V-skirts
<i>Chrysolina (Heliostola) schneideri</i> (Weise, 1882)	24 VI	1	0,24	V-skirts
<i>Chrysolina (Hipericia) geminata</i> (Paykull, 1799)	24 VI	1	0,24	V-skirts
<i>Chrysolina (Menthastriella) herbacea</i> (Dufschmid, 1825)	29 VII	2	0,48	V-skirts
<i>Phaedon armoraciae</i> (Linnaeus, 1758)	24 VI	1	0,24	V-skirts
VI. Galerucinae Latreille, 1802				
<i>Galeruca tanaceti</i> (Linnaeus, 1758)	6 VI	5	1,22	B-lawn, S
	6 VI	10	2,44	B-skirts
	7 VI	14	3,41	D-lawn, N-E
	7 VI	102	25,00	D-skirts
	24 VI	2	0,48	V-skirts
	24 VI	1	0,24	V-lawn, S
<i>Galeruca pomonae</i> (Scopoli, 1763)	6 VI	3	0,72	B-lawn, S
	24 VI	1	0,24	V-lawn, S
	29 VII	1	0,24	V-skirts
Alticinae Kutschera, 1859				
<i>Phyllotreta armoraciae</i> (Koch, 1803)	6 VI	3	0,72	B-skirts
<i>Phyllotreta undulata</i> (Kutschera, 1860)	6 VI	1	0,24	B-in forest
<i>Phyllotreta nigripes</i> (Fabricius, 1775)	16 VIII	1	0,24	V-lawn, E
<i>Phyllotreta vittula</i> (Redtenbacher, 1849)	16 VIII	1	0,24	V-in forest
<i>Aphthona semicyanea</i> Allard, 1859	6 VI	1	0,24	B-lawn, S
	6 VI	4	0,97	B-skirts
<i>Aphthona lacertosa</i> (Rosenhauer, 1847)	6 VI	3	0,72	B-skirts
	24 VI	1	0,24	V-lawn, S
	24 VI	2	0,48	V-skirts
	29 VII	2	0,48	V-skirts
	29 VII	2	0,48	V-lawn, S

Subfamily/Species	Collecting date	Nr. ind.	Abund. %	Capt. place /ecosystem
<i>Aphthona pygmaea</i> (Kutschera, 1861)	29 VII	1	0,24	V-skirts
<i>Longitarsus nigerrimus</i> (Gyllenhal, 1827)	7 VI	1	0,24	D-skirts
<i>Longitarsus lycopi</i> (Foudras, 1860)	24 VI	3	0,72	V-lawn, S
	24 VI	1	0,24	V-lawn, S-E
	15 VIII	18	4,40	V-lawn, E
	15 VIII	3	0,72	V-lawn S
<i>Longitarsus substriatus</i> (Kutschera, 1863)	24 VI	1	0,24	V-lawn, S-E
<i>Longitarsus ochroleucus</i> (Marsham, 1802)	29 VII	2	0,48	V-lawn, S
<i>Longitarsus obliteratus</i> (Rosenhauer, 1847)	29 VII	1	0,24	V-skirts
	29 VII	3	0,72	V-lawn, S
	29 VII	1	0,24	V-lawn, E
<i>Longitarsus pratensis</i> (Panzer, 1794)	29 VII	1	0,24	V-lawn, S
	15 VIII	1	0,24	B-skirts
	16 VIII	1	0,24	V-lawn, E
<i>Longitarsus pellucidus</i> (Foudras, 1860)	15 VIII	3	0,72	B-lawn/skirts
	16 VIII	2	0,48	V-in forest
<i>Longitarsus jacobeae</i> (Waterhouse, 1858)	15 VIII	1	0,24	B- in forest
	16 VIII	2	0,48	V-skirts
<i>Longitarsus rubellus</i> (Foudras, 1860)	15 VIII	1	0,24	B-in forest
<i>Longitarsus nigrofasciatus</i> (Goeze, 1777)	15 VIII	1	0,24	D-in forest
	16 VIII	1	0,24	V-in forest
<i>Longitarsus pulmonariae</i> Weise, 1893	16 VIII	1	0,24	V-skirts
<i>Asioresta ferruginea</i> (Scopoli, 1763)	24 VI	3	0,72	V-lawn, S
	7 VI	1	0,24	D-lawn, N-E
	29 VII	12	2,93	V-skirts
	15 VIII	3	0,72	D-lawn ,N-E
	16 VIII	19	4,64	V-lawn, E
<i>Asioresta transversa</i> (Marsham, 1802)	29 VII	1	0,24	V-skirts
	16 VIII	3	0,72	V-lawn, E
<i>Crepidodera aurata</i> (Marsham, 1802)	7 VI	5	1,22	D-skirts
<i>Chaetocnema obesa</i> (Boieldieu, 1859)	24 VI	2	0,48	V-lawn, S
	29 VII	4	0,97	V-lawn, S
<i>Chaetocnema (Tlanoma) heikertingeri</i> Ljubischev, 1963	29 VII	2	0,48	V-skirts
	16 VIII	1	0,24	V-lawn, S
<i>Chaetocnema arenacea</i> (Allard, 1860)	29 VII	1	0,24	V-lawn, S-E
	29 VII	1	0,24	V-skirts
	16 VIII	2	0,48	V-lawn, E
<i>Chaetocnema (Tlanoma) elorophana</i> (Duftschmid, 1825)	15 VIII	4	0,97	B-lawn, S
	15 VIII	1	0,24	B-in forest

Subfamily/Species	Collecting date	Nr. ind.	Abund. %	Capt. place /ecosystem
<i>Chaetocnema hortensis</i> (Geoffroy, 1785)	15 VIII	1	0,24	V-lawn, E
<i>Sphaeroderma rubidum</i> (Graells, 1858)	7 VI 16 VIII	1 1	0,24 0,24	D-skirts V-lawn, E
Cassidinae Gyllenhal, 1813				
<i>Cassida rubiginosa</i> Muller, 1776.	6 VI	1	0,24	B-lawn, S
<i>Cassida atrata</i> Fabricius, 1785	6 VI	1	0,24	B-lawn, S
<i>Cassida parmonica</i> Suffrian, 1844	24 VI 24 VI 7 VI	3 3 1	0,72 0,72 0,24	V-lawn, S V-lawn, S-E D-lawn, N-E
<i>Cassida (Odontionycha) viridis</i> Linnaeus, 1758	24 VI 24 VI 29 VII	1 2 1	0,24 0,48 0,24	V-skirts V-lawn, S V-skirts
<i>Cassida seladonia</i> (Gyllenhal, 1827)	24 VI 24 VI	2 4	0,48 0,97	V-lawn, S V-lawn, S-E
<i>Cassida (Pseudocassida) murraea</i> Linnaeus, 1767	24 VI	2	0,48	V-lawn, E
<i>Cassida vibex</i> Linnaeus, 1767	29 VII	1	0,24	V-skirts
<i>Cassida aurora</i> (Weise, 1907)	29 VII	1	0,24	V-lawn, E

Abbreviations: B= zone Bobâlna; D= zone Dăbâca; V= zone Vultureni; E., S., N-E., S-E = cardinal points of orientation of the slopes

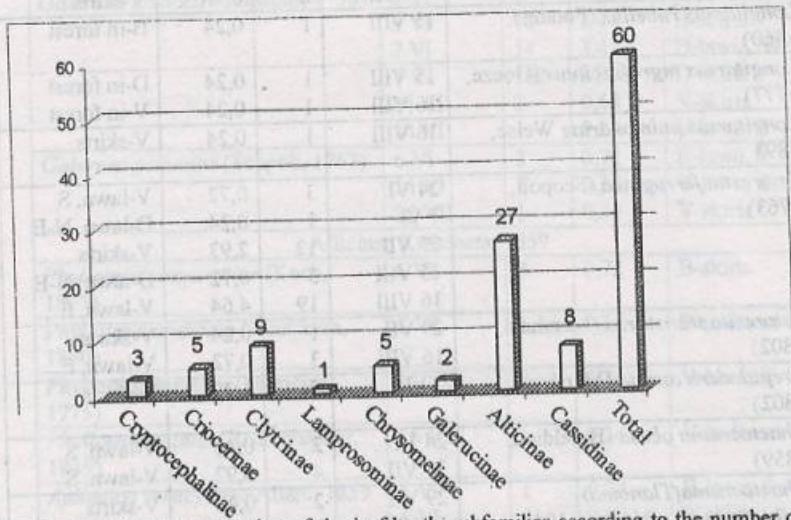


Fig. 1. Diagram of representation of the leaf-beetle subfamilies according to the number of species present in the three zones of "Podișul Someșan".

for Bobâlna and Vultureni 8 species (13,3 %), common for Dăbâca and Vultureni 6 species (10,0 %) and common for Bobâlna and Dăbâca 3 species (5 %). The number of species present in a single locality was: 10 species (16,7 %) for Bobâlna, 2 species (3,3 %) for Dăbâca and 27 species

(45,0 %) for Vultureni. This result indicates a greater ecological similarity for leaf-beetles, between Bobâlna and Vultureni, explained by the same orientations of the sampled slopes.

Among the 60 species signaled in the three sampled zones of "Podișul Someșan" we remark any rare ones as *Smaragdina xanthaspis* (Clytrinae); *Cryptocephalus aureolus* (Cryptocephalinae); *Chrysolina (Heliostola) schneideri* (Chrysomelinae); *Phylloreta armoraciae*, *Aphthona semicyanea*, *Aphthona pygmaea*, *Longitarsus nigerrimus*, *Longitarsus rubellus*, *Chaetocnema (Tlanoma) chlorophana*, *Sphaeroderma rubidum* (Alticinae); *Cassida atrata*, *Cassida seladonia* and *Cassida aurora* (Cassidinae).

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