

Leaf beetles (Coleoptera: Chrysomelidae) from Poșaga de Sus, area, Belioara valley

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Rezumat

Crizomelide (Coleoptera: Chrysomelidae) din Posaga de Sus, Valea Belioara

În urma colectărilor entomologice efectuate în zona Poșaga de Sus, Valea Belioara (situată la aproape 50 km sud-est de municipiul Cluj-Napoca) au fost identificate 62 specii de Chrysomelidae (Coleoptera). Fauna bogată și variată, conținând o multitudine de specii rare motivează propunerea noastră pentru protejarea acestei zone.

Cuvinte cheie / Keywords: Chrysomelidae, faunistics, ecology, Poșaga de Sus area, Belioara Valley

This work represents a continuation of the ecofaunistic studies on the family Chrysomelidae (Coleoptera) started a few years ago (CRIŞAN 1993, 1994, 1995, CRIŞAN & BONEA 1995), in order to supplement the relatively few leaf beetle records known (HORMUZACHI 1904, IENIŞTEA 1968, 1971, 1975, MARCU 1927, 1928, 1936, 1957, PETRI 1912, ROŞCA 1974, 1976, SEIDLITZ 1891) from Rumania. The study can be compared to that made for the "Scărița-Belișoara Botanical Reserve" (CRIŞAN & TEODOR 1996), which is situated at the entrance to the Belișoara valley.

Material and methods

In order to undertake this ecofaunistic study of leaf beetles, we sampled the area over the period June-September 1997 (one sampling per month) in the Poșaga de Sus area, Belioara valley (about 50 km south-west of Cluj-Napoca, Romania) and in the neighbourhood. In this area we identified three biotopes, with edafic, microclimatic and fitocoenological different conditions: 1 - The valley bottom, with small glades having bushes of willows, osiers, hazel, alder etc, the vegetation being mostly mesohygrophilous to hygrophilous; 2 - The left side of the valley, slightly inclined and west-southwest exposed, mixed deciduous forest with wide glades ascending the hill ; 3 - The right side of the valley, with a vegetation of shrubs, in succession to the previously existing deciduous forest; previously existing glades are now used as pastures. The exposition is mostly east-southeast.

We sampled the three mentioned biotopes separately, each including about 15 m² of vegetation swept with an insect net. The samples were taken from both the woody and herbaceous vegetation in order to determine the exact distribution and range of variation of the group. The collected leaf beetles were killed by immersing in 70% ethanol and kept dry until the identification, made from various reference sources (CALWER 1858 (=1958?), FREUDE, HARDE & LOHSE 1966, KOSZAB 1962, KOSZAB 1962-1971, KUNT 1912, MOHR 1977, PANIN 1951, REITER 1914, SCHAUFUSS 1915).

Results and discussions

The table below lists the leaf beetles taken in the Poçaga area, with the date of capture, the number of individuals, abundance of each species and the biotopes where they were captured.

Of the 345 captured leaf beetles individuals we identified 62 species from 27 genera and 9 subfamilies (Tab. 1).

Table 1.

Taxonomical list of the leaf beetles species caught in Poșaga de Sus, Belioara Valley.

Abbreviations: table head: Nr.= individuals number, Abund. = relative abundance; **Abund:** vR= very rare, R= rare, rC= relative common, C= common, vC= very common; **Biotope:** r.s. = right side, l.s. = Left side, v. = valley, rk. = on the rocks, h. = on herbaceous plants, w. = wooden, B.tr.= Barber trap, mez. = mezophilous, xer. = mezophilous, mezoher. = mezoherophilous, mezohigr. = mesohigraphilous.

Subfamily/Species	Date of caught	Nr.	Abund. %	Biotop
Donaciinae				
<i>Plateumaris sericea</i>	16 VI	1	0,29	R v., h.
<i>Plateumaris (Juliusiana) braccata</i>	16 VI	1	0,29	R v., h.
Criocerinae				
<i>Lema melanopus</i>	16 VI	4	1,16	C r.s., h.mez.
	16 VI	2	0,58	I.s., h.mez.
	16 VI	2	0,58	v., h.mez.
	25 VII	1	0,29	r.s., h.mez.
	28 VIII	1	0,29	I.s., h.mez.
<i>Lema lichenis</i>	16 VI	1	0,29	R r.s., h.mez.
	16 VI	1	0,29	v., h.mez.
<i>Lema erichsoni</i>	16 VI	1	0,29	vR r.s., h.mez.
Clytrinae				
<i>Labidostomis lucida</i>	16 VI	1	0,29	vR r.s., h.mez.
<i>Labidostomis longimana</i>	27 VII	1	0,29	R r.s., h.mez.
<i>Gynandrophthalma flavigollis</i>	16 VI	1	0,29	vR r.s., w. mez.
<i>Gynandrophthalma cyanea</i>	16 VI	2	0,58	R I.s., w. mez.
<i>Coptocephala scopolina</i>	28 VIII	1	0,29	vR r.s., h.xer.
Lamprosominae				
<i>Lamprosoma concolor</i>	28 VIII	1	0,29	vR I.s., h.mez.
Cryptocephalinae				
<i>Pachybrachis hippophaeus</i>	25 VII	1	0,29	R v., w.mez.
<i>Cryptocephalus hippocoeridis</i>	16 VI	2	0,29	rC r.s., h.xer.
	25 VII	3	0,87	v., h.mez.
<i>Cryptocephalus sericeus</i>	16 VI	2	0,58	C r.s., h.mez.
	5 VII	1	0,29	rk.xer.
	25 VII	7	2,03	v., h.mez.
	25 VII	2	0,58	r.s., h.mez.
	25 VII	2	0,58	I.s., h.mez.
	28 VIII	1	0,29	I.s., h.mez.
<i>Cryptocephalus violaceus</i>	16 VI	1	0,29	rC r.s., h.mez. rk., xer.
	5 VII	1	0,29	v., h.mez.
	25 VII	1	0,29	
<i>Cryptocephalus bipunctatus</i>	16 VI	2	0,58	C r.s., mezoher.
	16 VI	1	0,29	I.s., h.mez.
	5 VII	3	0,87	rk., xer.
	25 VII	4	1,16	v., h.mez.
	25 VII	2	0,58	I.s., h.mez.
<i>Cryptocephalus quadriguttatus</i>	16 VI	3	0,87	rC r.s., h.mez.
	25 VII	1	0,29	I.s., h.mez.

Subfamily/Species	Date of caught	Nr.	Abund. %	Biotope
<i>Cryptocephalus flavipes</i>	5 VII	3	0,87	rC rk., xer.
	25 VII	1	0,29	v., h.mez.
<i>Cryptocephalus bilineatus</i>	5 VII	1	0,29	R rk., xer.
<i>Cryptocephalus strigosus</i>	25 VII	1	0,29	vR r.s., h.mezoxer.
<i>Cryptocephalus labiatus</i>	25 VII	2	0,58	R l.s., h.mez.
	25 VII	1	0,29	r.s., h.mezoxer.
<i>Cryptocephalus ocellatus</i>	25 VII	2	0,58	R r.s., h.mezoxer.
<i>Cryptocephalus quercti</i>	25 VII	2	0,58	rC r.s., w.mez.
	25 VII	2	0,58	l.s., w.mez.
Chrysomelinae				
<i>Chrysomela aurichalcea</i> ssp. <i>asclepiadis</i>	16 VI	1	0,29	vR r.s., h.mez.
<i>Chrysomela aurichalcea</i> ssp. <i>bohemica</i>	28 VIII	1	0,29	fR v., B.tr.
<i>Chrysomela coeruleans</i>	16 VII	1	0,29	C r.s., h.mez.
	16 VII	7	2,03	v., h. mezhigr.
	16 VII	1	0,29	l.s., h.mez.
	25 VII	2	0,58	v., h. mezhigr.
<i>Chrysomela varians</i>	16 VI	19	5,51	vC r.s., h.mez.
	16 VI	4	1,16	l.s., h.mez.
	16 VI	2	0,58	v., h.mez.
	25 VII	26	7,54	r.s., h.mez.
	25 VII	6	1,74	v., h.mez.
	2 IX	1	0,29	v., h.mez.
<i>Chrysomela herbacea</i> var. <i>menthastris</i>	16 VI	16	4,64	vC v., h. mezhigr.
	25 VII	12	3,48	-/-
	28 VIII	18	5,22	-/-
	2 IX	10	2,90	-/-
<i>Chrysomela herbacea</i>	16 VI	21	6,09	vC v., h. mezhigr.
	28 VIII	4	1,16	
<i>Chrysomela polita</i>	16 VI	6	1,74	C v., h. mezhigr.
	25 VII	6	1,74	-/-
	28 VIII	1	0,29	-/-
<i>Chrysomela coerulea</i>	25 VII	1	0,29	R r.s., h.mez.
<i>Chrysomela cuprina</i>	28 VIII	1	0,29	R v., h. mezhigr.
<i>Dlochrysa fastuosa</i>	28 VIII	1	0,29	R -/-
<i>Sclerophaedon carniolicus</i>	16 VI	1	0,29	vR r.s., h.mez.
<i>Melasoma populi</i>	16 VI	2	0,58	rC r.S., w.mez.
	25 VII	3	0,87	v., w.mez.
<i>Melasoma (Macrolina)</i> <i>vigintipunctata</i>	16 VI	8	2,32	C v., w.mez.
	16 VI	1	0,29	r.s., w.mez.
<i>Melasoma (Microdera) collaris</i>	25 VII	1	0,29	vR v., w. mezhigr.
<i>Phyllodecta vulgatissima</i>	25 VIII	1	0,29	R l.s., w.mez.
	2 IX	1	2,29	v., w. mezhigr.
<i>Phyllodecta vitellinae</i>	16 VI	3	0,87	C -/-
	25 VII	4	1,16	-/-
	25 VII	2	0,58	r.s., w.mez.
<i>Phyllodecta gangelbaueri</i>	16 VI	2	0,58	R -/-

Subfamily/Species	Date of caught	Nr.	Abund. %	Biotop
<i>Phyllodecta laticollis</i>	16 VI	5	1,45	C v., w. mezohigr. l.s., w.mez.
	16 VI	2	0,58	r.s., w.mez.
	16 VI	6	1,74	
<i>Phyllodecta tibialis</i>	16 VI	1	0,29	rC l.s., w.mez.
	25 VII	3	0,87	v., w. mezohigr.
<i>Metalloitimarcha metalica</i>	2 IX	1	0,29	R v., B.tr.
<i>Galerucinae</i> <i>Galerucella (Xanthogaleruca) luteola</i>	16 VI	3	0,87	rC r.s., w.mez.
<i>Galeruca tanaceti</i>	16 VI	6	1,74	rC r.s., w.mez.
	5 VII	1	0,29	rk., w.xer.
<i>Lochmaea capreae</i>	16 VI	2	0,58	rC l.s., w.mez.
	25 VII	5	1,45	r.s., w.mez.
<i>Phyllobrotica adusta</i>	16 VII	1	0,29	R -/-
	25 VII	1	0,29	-/-
<i>Luperus flavipes</i>	16 VI	1	0,29	R -/-
<i>Luperus (Calomicrus) pinicola</i>	16 VI	1	0,29	rC r.s., w.xer.
	5 VII	3	0,87	rk. w., xer.
<i>Halticinae</i> <i>Phyllocoptes ochripes</i>	16 VI	1	0,29	vR l.s., h.mez.
<i>Aphthona venustula</i>	2 IX	1	0,29	R v., h.mez.
<i>Aphthona herbigrada</i>	28 VIII	1	0,29	vR l.s. h.mez.
<i>Longitarsus nigrofasciatus</i>	16 VI	1	0,29	R -/-
<i>Haltica oleracea</i>	16 VI	6	1,74	rC r.s., h. mezoher.
<i>Crepidodera transversa</i>	16 VI	4	1,16	rC v., h.mez.
<i>Crepidodera ferruginea</i>	16 VI	1	0,29	rC -/-
	25 VII	4	1,16	-/-
<i>Hippuriphila moderi</i>	16 VI	3	0,87	R -/-
<i>Chalcoïdes aurata</i>	16 VI	2	0,58	R r.s., w.mez.
	25 VII	1	0,29	-/-
<i>Chalcoïdes aurea</i>	16 VI	1	0,29	R -/-
<i>Cassidinae</i> <i>Cassida lineola</i>	25 VII	1	0,29	vR l.s., h.mez.
<i>Cassida vibex</i>	16 VI	1	0,29	R v., h. mezohigr.
<i>Cassida nebulosa</i>	16 VI	1	0,29	R r.s., h.mez.

Consequently, the area has a rich and varied leaf beetle fauna, bearing in mind that 9 of the 12 subfamilies cited from Central Europe (FREUDE, HARDE & LOHSE 1966) are represented.

The leaf beetle biodiversity is well correlated with the richness of the ecological niches offered by the orography and the vegetation of the area, beginning with the inclined zone near the "Platoul Craiului", and continuing down the Belioara valley, to where it joins the Poșaga valley.

The better represented subfamilies were, as follows: Chrysomelinae, Cryptocephalinae and Halticinae (Fig. 1); these also correlated with the individual biotopes, the Belioara valley offering suitable conditions for Chrysomelinae, a subfamily with mesohygrophilous to hygrophilous affinities, while the two sides of the valley, which are exposed to the sun for the most part of the day, offered better conditions for the Cryptocephalinae and Halticinae, with many xerophilous and mesophilous species.

No distributional differences were correlated with herbaceous and woody vegetation, the Chrysomelidae species generally having a restricted trophic spectrum, or being oligophagous to monophagous.

The following species are considered to be sufficiently rare to justify a proposal for the area's protection: *Lema erichsoni* SUFF. (Criocerinae); *Labidostomis lucida* GERM., *Gynandrophthalma flavicollis* (CHARP.), *Coptocephala scopolina* (L.) (Clytrinae); *Cryptocephalus strigosus* (GERM.), *Cryptocephalus labiatus* L. (Cryptocephalinae); *Chrysomela aurichalcea* MANN, *Chrysomela cuprina* DUFT., *Sclerophaedon carniolicus* GERM., *Melasoma (Microdera) collaris* (L.) (Chrysomelinae); *Phyllobrotica adusta* CREUTZ. (Galerucinae); *Phyllotreta ochripes* CURT., *Hippuriphila moderi* (L.) (Halticinae); *Casida lineola* (CREUTZ.) (Cassidinae).

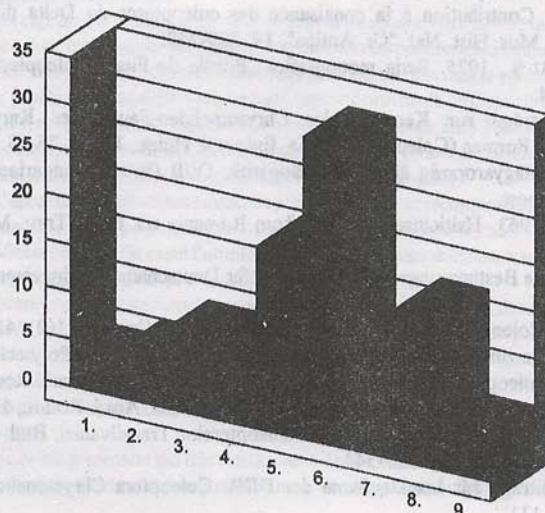


Fig. 1. Diagram of representation of leaf beetles subfamilies in Poșaga de Sus (Belioara Valley): 1 – Donaccinae 3,22%; 2 – Criocerinae 4,84%; 3 – Clytrinae 8,06%; 4 – Lamprosominae 1,61%; 5 – Cryptocephalinae 19,35%; 6 – Chrysomelinae 32,25%; 7 – Galerucinae 9,67%; 8 – Halticinae 16,22%; 9 – Cassidinae 4,84%.

Conclusions

Poșaga de Sus, Belioara valley, is an area rich in leaf beetle species, many of which are considered to be rare and which therefore justifies a proposal for the area's protection. In addition, as this area is close to the "Scărița Belioara Botanical Reserve" it could function as a buffer zone for this reserve.

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