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Studies on the leaf-beetle fauna (Coleoptera: Chrysomelidae) in "Someşului Cald Gorges" area, Romania

Alexandru CRIŞAN, Valentin POPA & Lucian TEODOR

Rezumat

Cercetări asupra faunei de crizomelide (Coleoptera:Chrysomelidae) din zona Cheile Someşului Cald, România

Continuând studiile începute în 1998 (CRIŞAN & colab. 1998), în 1999 am întreprins cercetări asupra grupului crizomelidelor în zona Cheilor Someşului Cald, context în care am semnalat prezenţa a 22 specii din 3 subfamilii, dominante fiind crizomelinele şi halticinele. Un număr de 10 specii sunt menţionate ca rare pentru zona noastră. Specia dominantă a fost *Minota carpathica*, prezentă în toate punctele de colectare, specie tipic montană.

Keywords: Leaf-beetles, faunistics, Someşului Cald Gorges

This work has been undertaken in order to complete the information given by us about the leaf-beetle fauna in an area neighboring the "Someşului Cald Gorges" (CRIŞAN & all. 1998). In 1999, we took samples in the area of the "Someşului Cald Gorges", a protected zone of about 7 km. in length, beginning with the river springs.

No previous information about leaf-beetle in this area was found in the specific literature (GRUEV & all. 1993, HURMUZACHI 1904, KASZAB 1962, KONNERT-IONESCU 1963, MARCU 1957, PETRI 1912, ROŞCA 1973, 1974, ROZNER 1996, SEIDLITZ 1891).

Material and methods

The "Someşului Cald Gorges" area is situated in the spruce zone, *Picea abies* being the most spread tree species, constituting a relatively dense forest with small clearings and glades dominated by herbaceous vegetation and rare bushes. Even though the spruce forest landscape is relatively uniform, we are able to identify some stations with particular characteristics:

1. The area of the river springs, with small clearings in the spruce forest, dominated by *Calamagrostis arundinacea* in the herbal layer.
2. The station "Cetăţile Rădesei" a larger, but very inclined glade at the entrance of a cave, with hygrophilous vegetation.
3. The station "Poiana Rădesei", also a large glade with herbaceous vegetation mixed with some bushes like: *Salix caprea, Betula verrucosa, Sorbus aucuparia* and small spruce trees.
4. Three stations, downstream the "Poiana Rădesei" with small clearings in the spruce forest, at least 50 m. away from the river banks, the herbal layer being composed of *Calamagrostis* mixed with

mezophylous dicotiledonates.

5. The "Belvedere" station, a small clearing at a high altitude in the proximity of the gorges, with mezophylous vegetation mixed with *Salix caprea* bushes.
6. A large glade downstream "Belvedere" station, a very inclined area with rich herbaceous vegetation mixed with some tree such as: *Salix caprea*, *Sorbus aucuparia*, *Acer pseudoplatanus*, *Fraxinus excelsior*, *Fagus sylvatica* and *Betula verrucosa*. Higher temperature and humidity, favored by the air current ascending from the gorge entrance characterize this area. In these stations, samples were taken from both herbaceous vegetation and trees with a 100 sweeps/samples, using an entomological net. Direct observations of leaf-beetles on vegetation were also made.

The collected insects were placed in 80 % alcohol, and than were kept to dry until the identification. The identification of the species was performed in the laboratory using specific literature (CALWER 1858, KASZAB 1962-1971, KIPPENBERG & DOBERL 1994, KUNT 1912, MOHR 1966, PANIN 1951, SCHAUFUSS 1915, WARCHALOWSKI 1993).

Results and discussion

In the "Someşului Cald Gorges" area, we collected 327 leaf-beetles individuals, from which we identified 22 species that belong to 3 subfamilies, as it is shown in Table 1.

Table 1.

Chrysomelidae species indentified in the Someşului Cald Gorges area

nr.	Subfamily/Species	collecting date	specimen nr.	Abundance %	Stations
	I. **Chrysomelinae**				
1	*Chrysolina(Colaphoptera) rufa* Duftschmidt, 1825 ssp.*diminuata* Beeyne, 1950	6/15/99	5	1.52	1
		6/15/99	2	0.61	2
		7/21/99	14	4.28	6
		7/21/99	1	0.30	2
		8/18/99	1	0.30	2
		8/18/99	10	3.05	6
		8/19/99	1	0.30	4
2	*Chrysomela lapidaria* Beeyne, 1950	7/22/99	1	0.30	2
3	*Oreina (Chrysochloa) cacaliae* (Schrank, 1785) ssp. *senecionis* (Schummel, 1843)	6/15/99	1	0.30	1
4	*Oreina (Intricatorina) intricata* (Germar, 1824)	8/19/99	1	0.30	6
5	*Oreina (Virgulatorina) virgulata* (Germar, 1824)	8/19/99	1	0.30	6
6	*Colaphus spohiae* (Schaller, 1783)	6/15/99	2	0.61	1
7	*Linaeidea aenea* (Linnaeus, 1758)	7/21/99	1	0.30	2
		8/19/99	1	0.30	6
8	*Timarcha (Metalotimarcha) gibba* (Hagenbach, 1821)	6/14/99	1	0.30	1
	II. **Galerucinae**				
9	*Luperus (Calomicrus) viridipenis* Germar, 1824	7/22/99	1	0.30	2
	III. **Halticinae**				
10	*Phyllotreta atra* (Fabricius, 1775)	7/22/99	1	0.30	6
11	Phyllotreta *flexuosa* (Illiger, 1794)	7/22/99	1	0.30	6
12	*Longitarsus membranaceus* (Foudras, 1860)	7/15/99	1	0.30	1
13	*Longitarsus brunnaeus* (Duftschmidt, 1825)	7/22/99	2	0.61	4
14	*Longitarsus obliteratus* (Rosenhauer, 1847)	8/18/99	2	0.61	2
		8/19/99	1	0.30	5
15	*Longitarsus rubellus* (Foudras, 1860)	8/19/99	3	0.92	6
16	*Altica oleracea* (Linnaeus, 1758)	7/21/99	1	0.30	2
17	*Asiorestia transsylvanica* (Fuss, 1864)	6/15/99	2	0.61	2

nr.	Subfamily/Species	collecting date	specimen nr.	Abundance %	Stations
		7/22/99	9	2.75	4
		7/22/99	25	7.64	6
		8/19/99	22	6.72	6
18	*Minota carpathica* Heikertinger, 1911	6/15/99	15	4.58	3
		7/21/99	7	2.14	2
		7/22/99	87	26.6	6
		7/22/99	5	1.52	3
		7/21/99	2	0.61	2
		7/22/99	47	14.37	6
		8/18/99	1	0.30	5
		8/19/99	22	6.72	6
		8/19/99	9	2.75	4
		8/19/99	9	2.75	4
		8/19/99	5	1.52	4
19	*Chaetocnema* (*Tlanoma*) *concinna* (Marsham, 1802)	7/22/99	1	0.30	1
		8/19/99	1	0.30	2
20	*Chaetocnema obessa* (Boildieu, 1859)	8/18/99	1	0.30	2
21	*Psylliodes chrysocephala* (Linnaeus, 1758)	7/21/99	1	0.30	2
22	*Psylliodes calcomera* (Illiger, 1807)	7/22/99	1	0.30	6

The fauna of leaf-beetles in this area is scarce, because of the colder climate, the excess of humidity and the relative uniformity of vegetation. Only in station 6 where the temperature is higher, had a richer leaf-beetles fauna, especially, both the number of species and individuals. The gorge leaf-beetles fauna is dominated by the Chrysomelinae subfamily, whose representatives are mainly hygrophilous species, and by Halticinae subfamily with the hygrophilous species.

Even more scarce comparing with other zones of our country (CRIŞAN 1993a, 1993b, 1994, 1995, CRIŞAN & BONEA 1995, FLECK 1905, GRUEV & all. 1993, HURMUZACHI 1904, IENIŞTEA 1968, 1974, IENIŞTEA & NEGRU 1975, KONNERT-IONESCU 1963, MARCU 1927, 1928, 1936, 1957, MONTANDON 1887, NEGRU 1968, NEGRU & ROŞCA 1967, PETRI 1922, ROŞCA 1973, 1974, 1976, SEIDLITZ 1891) and also with the area situated below the gorges (CRIŞAN & all. 1998), the "Someşului Cald Gorges"area has some rare species, typical for the mountain zones, best adapted to the restricitive conditions such as: *Chrysolina* (*Colaphoptera*) *rufa* DUFTSCHMIDT, 1825 ssp. *diminuata* BECHYNÉ, 1950, *Oreina* (*Intricatorina*) *intricata* (GERMAR, 1824), *Oreina* (*Virgulatorina*) *virgulata* (GERMAR, 1824) from Chrysomelinae subfamily and *Longitarsus membranaceus* (FAUDRAS, 1860), *Longitarsus brunneus* (DUFTSCHMIDT, 1825), *Longitarsus rubellus* (FAUDRAS, 1860), *Minota carpathica* HEIKERTINGER, 1911, *Chaetocnema obessa* (BOIELDIEU, 1859), *Psylliodes calcomera* (ILLIGER, 1807), from the Halticinae subfamily.

The most spread and abundant species was *Minota carpathica*, found in all the six sampled stations, especially in the station 6. It is an endemically species for the Carpathians. Also abundant species was *Chrysolina rufa* ssp. *diminuata*, found also, in the downstream gorges area (CRIŞAN & all., 1998).

These mentions, added to the situations of other animal groups and to the picturesque ness of the zone, make from the "Cheile Someşului Cald" an interesting area, requiring ecological protection.

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Alexandru CRIŞAN, Valentin POPA, Lucian TEODOR
"Babeş-Bolyai" University, Cluj-Napoca
Faculty of Biology, Department of Zoology
5-7, Clinicilor Str.
RO-3400, Cluj-Napoca, Romania.

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