

## Studies on snout-beetles fauna (Coleoptera, Curculionoidea) from "Cheile Turului", district of Cluj-Romania

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### Rezumat

#### Cercetări privind fauna de curculionide (Coleoptera: Curculionoidea) din "Cheile Turului", județul Cluj-România

Materialul biologic a fost colectat în 1993 and 1995 din șase tipuri de ecosisteme, în cadrul zonei "Cheile Turului", zonă în care nu s-au mai efectuat până acum cercetări privind curculionidele. Am colectat un număr de 1447 indivizi, aparținând la 110 specii, din 58 genuri, 18 subsfamilii and trei familii de Curculionoidea (tab. 1). Dominante în Cheile Turului au fost: *Phyllobius (Mataphylobius) pomaceus* GYL. (32,13%) and *Nedyus quadrimaculatus* (L.) (12,19%), iar codominante: *Protaetia schoenherri* (BOH.) (4,83%), *Otiorhynchus (Arammicinus) ligustici* (L.) (3,13%), *Rhynchaenus (Isochnus) populicola* SILFVERBERG (3,13%), *Gymnetron (Rhinusa) bipustulatum* (ROSSI) (3,13%), *Polydrusus (Tylodrusus) pterrygomalis* (BOH.) (3,04%) and *Otiorhynchus (Dorymerus) gemmatus* (SCOP.) (2,69%). Patru dintre speciile semnalate de noi în Cheile Turului: *Otiorhynchus (Dorymerus) lutosus* STIERLIN, *Foucartia liturata* (STIERLIN), *Rhamphus subaeneus* ILLIGER and *Miarus (s. str.) ajugae* (HERBST) sunt noi pentru fauna României. Cinci specii: *Protaetia laevicole* (KIRBY), *Otiorhynchus (s. str.) porcatus* (HBST.), *Omias globulus* (BOH.), *Ceutorhynchus posthumus* (GERM.) and *Thamiocolus nubeculosus* (GYLL.), sunt semnalate de noi pentru prima dată în Transilvania. Dintre speciile rare menționăm pe: *Protaetia laevicole* (KIRBY), *Otiorhynchus (Tournieria) coarctatus* STIERLIN., *Otiorhynchus (Tournieria) ormay* STIERLIN and *Zacladus exiguis* (OLIVIER). Fauna de curculionide din Cheile Turului este bogată atât ca număr de specii cât and ca număr de indivizi.

**Keywords:** Curculionoidea, faunistics, "Cheile Turului" area.

### Introduction

The "Cheile Turului" floristical reserve represents a gorge area situated in the inferior basin of the "Arieș" river and crossed by "Racilor" brook, a tributary to this river (fig. 1). It is an interesting area both regarding geological, phytocoenological (CSURÖS-KAPTALEN 1962) and zoocoenological (RAKOSY & VIEHMANN 1991) aspects, offering various ecological niches.

Snout-beetles fauna from Arieș river's basin was less studied till recently. In an older paper (CSIKI, 1916) there are some references to some snout-beetles genera from Arieș river's area, without naming the species. PETRI (1912 and 1925/1926) has specified a single snout-beetle species in this area, collected at Turda. More recently (MARCU 1957; ENDRODI 1960, 1969, 1970; TEODOREANU 1986) some papers have been published, where about 23 species of snout-beetles

are mentioned in some localities from Arieș river basin.

In the last 10 years more serious researches had been undertaken on Arieș river's snout-beetles fauna (TEODOR 1993, TEODOR & CRĂȘAN 1996, Kocs and PODLUSSÁNY 1999) but no data on "Cheile Turului" snout-beetles have been published till the present paper.

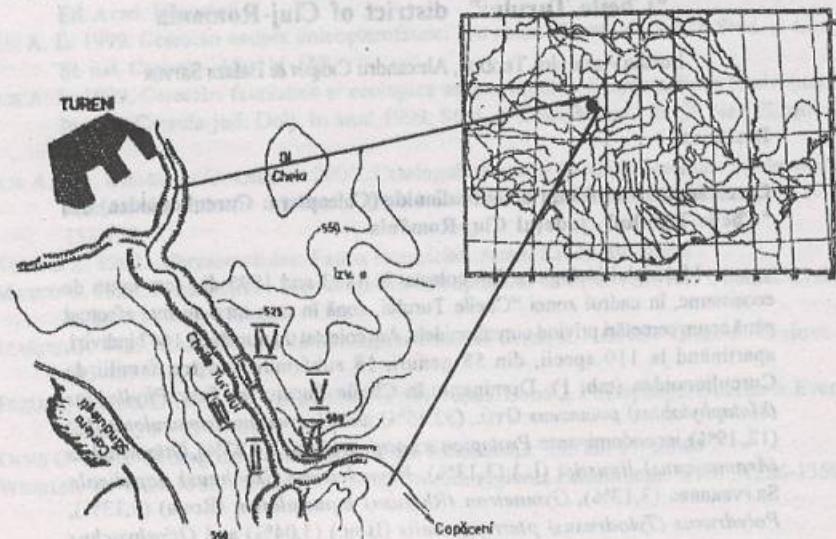


Fig. 1. Placement of the "Cheile Turului" (Tur Gorges) area (modified upon RAKOSY & VIEHMANN 1991)  
Localizarea zonei Cheile Turului (după RAKOSY & VIEHMANN 1991 modificat)

#### Material and methods

The "Racilor" brook has formed, in the soft chalk rocks of the tertiary age of "Tureni" depression, a gorge situated between Copăceni and Tureni villages. That was the area in which we undertook the present study on snout-beetles fauna, sampling the following 6 types of ecosystems:

- I. The valley bottom, the area neighbouring the "Racilor" brook, with wooden plant species of *Salix*, *Alnus* and *Populus*, and with a rich herbous vegetation;
- II. A foliaceous forest on the right side of the valley, with a Northern exposition, a forest dominated by *Carpinus betulus* and *Corylus avellana* species;
- III. A bushes area on the right side of the valley, with a Northern exposition having plant species as *Crataegus monogyna*, *Corylus avellana*, *Rosa canina* and so on;
- IV. A bushes area on the left side of the valley with a Southern exposition;
- V. A lawn on the left side of the valley, strongly xerophylous and intensely grazed;
- VI. A rocky area on the left side of the gorges.

The study refers to the snout-beetles samplings made in May-June 1993 in the area of the valley bottom and in May-August 1995 in different ecosystems both in the valley bottom and the two valley sides.

Samplings were made by sweeping the vegetation with an entomological net (100 sweeps/sample) and by shaking trees and bushes using the entomological umbrella for catching the

insects. Other snout-beetles were caught by "Barber" traps or by hand from their feeding plants. Insect's identification was made in the laboratory using specific literature (FREUDE, HARDE & LOHSE 1981, 1983; ENDRODI 1961; DIECKMANN 1974, 1977, 1980, 1983, 1986, 1988; LOHSE & LUCHT 1993; ALONSO-ZARAZAGA 1989, 1990; ABAZI & OSSELLA 1992; COLONNELLI 1994; LAWRENCE and NEWTON 1996; PODLUSSÁNY 1996).

### Results and discussions

In the all catching periods we captured 1447 snout-beetle individuals in which we identified 110 species from 58 genera and 18 subfamilies of three families of Curculionoidea (tab. 1).

Referring to the number of species, the best represented subfamilies were: Apioninae (21 species), Otiorhynchinae (17 species), Brachyderinae (13 species) and Ceutorhynchinae (12 species) and the least ones were: Cryptorhynchinae, Zygopinae, Barinae, Acalyptinae and

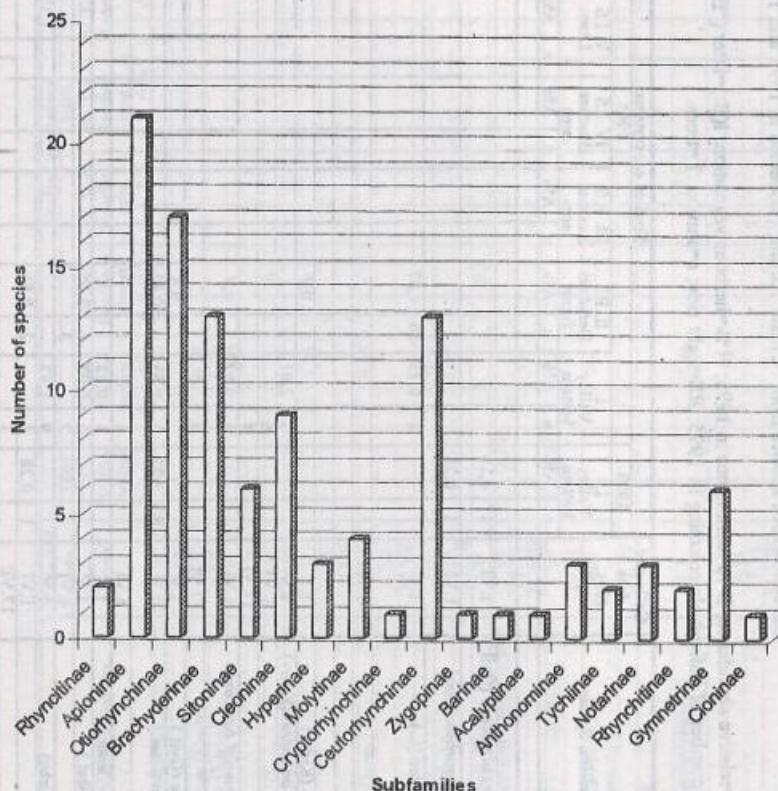


Fig. 2. Range of "Cheile Turului" Curculionoidea subfamilies under the number of species.  
Reprezentarea subfamilialilor de Curculionoidea după numărul de specii.

Cioninae, each of them with a single species (fig. 2).

The 110 snout-beetles species were spread differently in the ecosystems sampled by us

**Table 1**

### Cucujonoidea species from "Cheile Turului", collected in 1993 and 1995.

**Abbreviations:** A %=relative abundance; D % = dominance in 1995; H % = herbous vegetation; l(Bt)=litter ("Barber "traps); LS=left side; n=number of individuals; N=total number of individuals collecting in 1995; RS=right side; s=shrubs; T=trees.

Families, Subfamilies, Species	Collected date (day, month)	Studied ecosystems														Biotope	
		1993		1995		1993		1995		1993		1995		1993			
		I. Valley bottom		II. RS Deciduous forest		III. RS Bushes area		IV. LS Bushes area		V. LS Lawn		VI. LS Rocky area		N	D%		
		n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	n	A%		
<b>ATTELABIDAE</b>																	
Rhynchitinae																	
<i>Lasiorhynchites (s. str.) olivaceus</i> (Gyll.)	1.VI	1	0,28														
<i>Lasiorhynchites (Coccigorhynchites) sericeus</i> (Hbst.)	1.VI.	1	0,28														
<i>Deporaus (s. str.) betulae</i> (L.)	1.V			1	0,13	10	4,87								13	1,16	
	6.VI					2											
<b>APIONIDAE</b>																	
Apioninae																	
<i>Omphalapion hookeri</i> (Kirby)	1.V					1	0,4								1	0,09	
<i>Acanephodus (s. str.) onopordi</i> (Kirby)	1.V			1	2,01										15	1,34	
	6.VI			6													
	17.VI			8													
<i>Ceratapion (Echinostroma) basicorne</i> (Illiger)	6.VI			1	0,67	1	0,4								6	0,53	
	17.VI			4													
<i>Alocentron curvirostre</i> (Gyll.)	1.V					1	0,4								1	0,09	
<i>Taeniapion urticarium</i> (Hbst.)	1.V	8	2,22	3	0,53	1	0,81								6	0,53	
	6.VI			1		1											
<i>Exapion elongatum</i> (Desbr.)	1.V			1	0,13										1	0,09	
<i>Protaetia apiciana</i> (Hbst.)	1.V			5	0,93	6	3,65								16	1,43	
	6.VI			2		3											
<i>Protaetia filirostre</i> (Kirby)	1.V			9	1,47										14	1,25	
	1.VI	1	0,28	1		2	0,81										
	17.VII			1								1					



Families, Subfamilies, Species	Collected date (day, month)	Studied ecosystems														Biotope			
		1993		1995															
		I. Valley bottom		I. Valley bottom		II. RS Deciduous forest		III. R.S Busches area		IV. LS Busches area		V. LS Lawn		VI. LS Rocky area					
		n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	N	D%		
	6.VI							1										dioica, I(Bt)	
	25.VII						2			2									
Otiorhynchus (s. str.) multipunctatus (F.)	6.VI								3,57	1	6,66					2	0,18	H-Urtica	
	17.VI							1										dioica, I(CB)	
Otiorhynchus (s. str.) porcatus (Hbst.)	25.VII			1	0,13											1	0,09	H	
Otiorhynchus (s. str.) politus Boh.	6.VI	1	0,28					1	3,57							1	0,09	I(Bt)	
Otiorhynchus (s. str.) raucus (F.)	31.VIII			1	0,13														
Otiorhynchus (Dorymerus) gemmatus (Scop.)	I. V.			20	3,08		2,84									30	2,69	H-Urtica	
	22.V	4	1,94															dioica	
	1.VI	3																	
	6.VI			1		2													
	17.VI			2		5													
Otiorhynchus (Dorymerus) lulosus Stierl.	6.VI									1	6,66					1	0,09	I(Bt)	
Otiorhynchus (Tournieria) coarctatus Stierl.	6.VI							1	3,57							1	0,09	I(Bt)	
Otiorhynchus (Tournieria) ormayi Stierl.	17.VI									1	6,66					1	0,09	I(Bt)	
Otiorhynchus (Tournieria) ovatus (L.)	6.VI			1	0,4											4	0,36	H, I(Bt)	
	17.VI			2															
	25.VII											1							
Otiorhynchus (Aramnichnus) ligustici (L.)	1.V			1	3,34				17,86		6,66				57,16	35	3,13	H-Urtica	
	22.V	73	23,34															dioica, I(Bt)	
	1.VI	11																s-Crataegus	
	6.VI			17					3		1							monogina,	
	17.VI			7					1									Rosa	
	25.VII																		
	31.VIII								1										
Otiorhynchus (Aramnichnus) orbicularis (Hbst.)	22.V	1	0,28		0,13											1	0,09	H, I(Bt)	
	25.VII				1														
Omias globulus (Boh.)	22.V															1	0,09	H	
Phyllobius (Haplophylobius) pilicornis Desbr.	6.VI							1	0,4						1	14,28	1	0,09	H
Phyllobius (Metaphylobius) pomaceus	22.V	73	36,95		46,72					35,72						359	32,13	H-Urtica	

Families, Subfamilies, Species	Collected date (day, month)	Studied ecosystems														Biotope			
		1993				1995													
		I. Valley bottom		I. Valley bottom		II. RS Deciduous forest		III. RS Busches area		IV. LS Busches area		V. LS Lawn		VI. LS Rocky area					
		n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	N	D%		
Gyll.																			
	1.VI	60																	
	6.VI			264					5										
	17.VI			85					5										
<i>Phyllobius (Nemoicus) oblongus</i> (L.)	6.VI			2	0,26											2	0,18	H	
<b>Brachyderinae</b>																			
<i>Polydrusus (Tylodrusus) flavipes</i> (Deg.)	22.V	4	1,11													20	1,79	H	
	6.VI			13	2,67														
	17.VI			7															
<i>Polydrusus (Tylodrusus) impressifrons</i>	1.VI	13	3,61																
Gyll.																			
<i>Polydrusus (Tylodrusus) pterygomalis</i>	1.VI	1	0,28		0,13		12,6									34	3,04	H,T	
Boh.																			
	6.VI						18												
	17.VI			1			13												
<i>Polydrusus (Neodrosus) thalassinus</i>	6.VI						7	4,47								12	1,07	s-Corylus	
Gyll.																		avellana, H	
	17.VI						4												
<i>Polydrusus (Eudipnus) mollis</i> (Stroem)	6.VI			1	0,13	1	0,4									2	0,18	H,T	
<i>Polydrusus (s. str.) picus</i> (F.)	6.VI					9	4,06			1	13,34				13	1,16	T-		
	17.VI					1	0,13	1										<i>Crataegus</i>	
																		<i>monogyna</i> ,	
																		H	
<i>Liophloeus (s. str.) tessulatus</i> (O. F. Müller)	22.V	2	0,55															H	
<i>Sciaphobus (Neosciaphobus) squalidus</i>	1.V			1	0,53	1	0,81									14,28	4	0,63	H,T
Gyll.																			
	1.VI			1															
	6.VI					1													
	17.VI			2															
<i>Eusomus ovulum</i> Germ.	6.VI			13	3,34										4	9,48			
	17.VI			12											3				
<i>Eusomus beckeri</i> Tourn.	17.VI														2	2,72			
<i>Scaphilus asperatus</i> (Bonsd.)	22.V	1	0,28		0,26										2	0,18	H		



Families, Subfamilies, Species	Collected date (day, month)	Studied ecosystems														Biotope	
		1993		1995													
		I. Valley bottom		I. Valley bottom		II. RS Deciduous forest		III. R.S Busches area		IV. LS Busches area		V. LS Lawn		VI. LS Rocky area			
		n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	n	A%		
	22.V	2	0,55														
	6.VI			4													
<i>Alophus triguttatus</i> (F.)	22.V	1	0,28		0,13											1 0,09 H	
	6.VI			1													
<i>Molytinae</i>																	
<i>Lepyrus palustris</i> (Scop.)	1.V			1,11	1 0,67							20,02				8 0,72 H	
	22.V	1															
	1.VI			3													
	6.VI			4													
	17.VI											3					
<i>Hylobitellus</i> (= <i>Hylobius</i> )	6.VI			1	0,13											1 0,09 H-Lathyrus	
<i>transversovittatus</i> (Goeze)																	
<i>Plinthus sturmii</i> (Germ.)	6.VI			1	0,13			2	7,14							3 0,27 H, l(Bt)	
<i>Plinthus squallidus parrevssi</i> Boh.	31.VIII			1	0,13											1 0,09 H	
<i>Cryptorhynchinae</i>																	
<i>Acalles camelus</i> (F.)	17.VI			1	0,13											1 0,09 l(Bt)	
<i>Ceurorhynchinae</i>																	
<i>Ceutorhynchus chlorophanus</i> Rouget	17.VI											1 1,37				1 0,09 H	
<i>Ceutorhynchus coarctatus</i> Gyll.	6.VI					1	0,4									1 0,09 H	
<i>Ceutorhynchus erysimi</i> (F.)	6.VI			2	0,4	10	4,47			13,34						16 1,15 H	
	17.VI			1		1				2							
<i>Ceutorhynchus ignitus</i> Germ.	17.VI			1	0,13											1 0,09 H	
<i>Ceutorhynchus nanus</i> Gyll.	1.VI	1	0,28													H	
<i>Ceutorhynchus pleurostigma</i> (Marsh.)	1.V			1	0,4							1,37				4 0,36 H	
	17.VI			2								1					
<i>Ceutorhynchus posthumus</i> (Germ.)	1.V			11	1,6											12 1,07 H	
	6.VI			1													
<i>Ceutorhynchus rapae</i> Gyll.	1.V			2	0,26	1	0,4									3 0,27 H	
<i>Nedyus quadrimaculatus</i> (L.)	1.V		3,05	33	5,76		37,8									136 12,19 H-Urtica dioica	
	22.V	3															
	1.VI	8															
	6.VI			2		49											
	17.VI			6		44											
	25.VII			2													
<i>Mogulones asperifoliarum</i> (Germ.)	1.V			1	0,13		0,4									2 0,18 H	
	1.VI					1											



Families, Subfamilies, Species	Collected date (day, month)	Studied ecosystems														Biotope		
		1993		1995														
		I. Valley bottom		I. Valley bottom		II. RS Deciduous forest		III. RS Busches area		IV. LS Busches area		V. LS Lawn		VI. LS Rocky area		N	D%	
		n	A%	n	A%	n	A%	n	A%	n	A%	n	A%	n	A%			
<i>Rhamphus subaeneus</i> Illig.	1.VI	50																
	6.VI			15														
	17.VI			18														
<i>Gymnetrinae</i>	1.VI	1	0,28														<i>s-Crataegus monogyna</i>	
<i>Mecinus pyraster</i> (Hbst.)	1.V			1	0,13											1	0,09	H
<i>Miarus (s. str.) angiae</i> (Hbst.)	6.VI		0,28	2	0,4	3	1,22					1	1,37			7	0,63	H
	17.VI			1														
<i>Miarus (Miaromimus) longirostris</i> (Gyll.)	6.VI			4	0,8							6	8,13			12	1,07	H
	17.VI			1														
	25.VII			1														
<i>Gymnetron (Rhinusa) asellus</i> (Grav.)	6.VI			1	0,13							2	2,72			3	0,27	H- <i>Verbascum</i>
<i>Gymnetron (Rhinusa) bipustulatum</i> (Rossi)	6.VI					5	2,03					15	41,54			35	3,13	H- <i>Verbascum</i>
	17.VI											14						
	25.VII											1						
<i>Gymnetron (Rhinusa) tetrum</i> (F.)	6.VI											6	8,13			6	0,54	H
<i>Cioninae</i>	25.VII											1	1,37			1	0,09	H
<i>Cionus olivieri</i> Rosenchöld																		
Total number of individuals		360		747		246		28		15		74		7		111		
Total number of species				29		79		31		10		10		21		4		163
Total number of genera				22		44		22		6		6		12		3		54

in the "Turului" gorges area (tab. 1, fig. 3). The valley bottom (I) had the largest number of species (87 species in all; 79 species caught in 1995 and 29 species caught in 1993, from which 7 species were not caught in 1995). The most abundant species in the valley bottom were: *Phyllobius (Metaphyllum) pomaceus* GYLLENHAL, 1834 ( $A=36.95\%$  in 1993,  $46.72\%$  in 1995), *Otiorhynchus (Arammichnus) ligustuci* (LINNÉ, 1758) ( $A=23.34\%$  in 1993,  $3.34\%$  in 1995), *Rhynchaenus (Isochnus) populicola* SILVERBERG, 1977 ( $A=17.78\%$  in 1993,  $4.46\%$  in 1995), *Nedyus quadrimaculatus* (LINNÉ, 1758) ( $A=3.05\%$  in 1993,  $5.76\%$  in 1995), *Protaetia schoenherri* (BOHEMAN, 1839) ( $A=1.11\%$  in 1993,  $3.75\%$  in 1995), *Otiorhynchus (Dorymerus) gemmatus* (SCOPOLI, 1763) ( $A=1.94\%$  in 1993,  $3.08\%$  in 1995) and *Eusomus ovulum* GERMAR, 1824 ( $A=3.34\%$  in 1995).

The second better represented ecosystem in snout-beetles fauna was the forest on the right side of the valley (II) with 31 species, followed by the lawn on the left side of the valley (V) with 21 species.

In the forest *Polydrusus* GERMAR, 1817 species were abundant, occupying ecological niches in the crowns of the trees.

*Polydrusus (Tylodrusus) pterygomalis* BOHEMAN, 1840, with 12.60% and *Deporaus (s.str.) betulae* (LINNÉ) with 4.87% were more abundant.

In the forest ecosystem but on herbs were registered an even greater abundance as: 37.80% for *Nedyus quadrimaculatus* (L.) on *Urtica dioica*, 10.57% for *Protaetia schoenherri* (BOH.) and 3.65% for *Protaetia apricans* (HERBST, 1797) on different fabaceans.

In the lawn on the left side of the valley were abundant: *Gymnetron (Rhynusa) bipustulatum* (Rossi, 1794) (8.13%), *Eusomus ovulum* (GERM.) (9.48%) and *Larinus (Larinodontus) obtusus* GYLLENHAL, 1836 (4.07%), all xerophylic species which found favourable conditions in the grazed vegetation of the Southern exposed slopes of that valley side.

In the rest of each sampled ecosystems a few snout-beetle species were registered. So, in the bushes of the right valley side (III) 10 species were registered, also 10 species in the bushes of the left valley side (IV) and only 4 species in the rocky area of the left valley side (VI). The number of caught snout-beetles individuals was also less in the last three mentioned ecosystems (tab. 1, fig. 3).

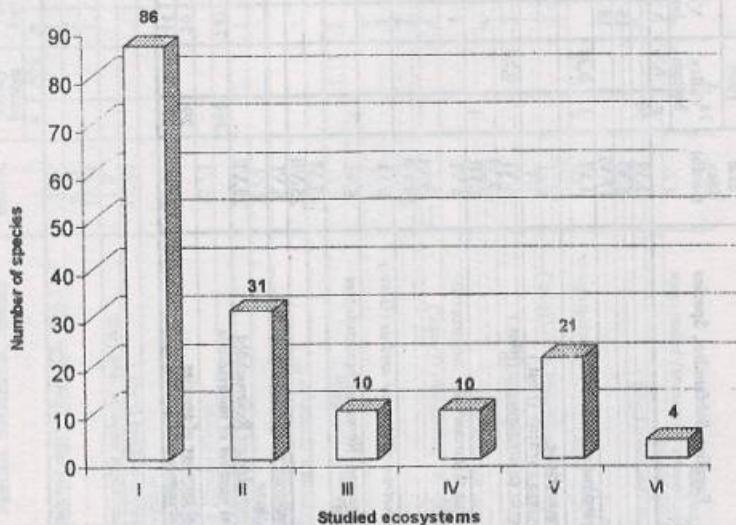


Fig. 1. Numerical spread of Curculionoidea species in "Tur Gorges" (I-VI type of ecosystems)  
- Distribuția numerică a speciilor de Curculionoidea în Cheile Turului (I-VI tipuri de ecosisteme)

Statistics indicate that *Phyllobius (Mataphylobius) pomaceus* GYL. (32,13%) and *Nedyus quadrimaculatus* (L.) (12, 19%) were the dominant species of the whole in the area and *Protaetia schoenherri* (Boh.) (4,83%), *Otiorhynchus (Aramnicinus) ligustici* (L.) (3,13%), *Rhynchaenus (Isochnus) populicola* SIEFVERBERG (3,13%), *Gymnetron (Rhinusa) bipustulatum* (Rossi) (3,13%), *Polydrusus (Tylodrusus) pterrygomalis* (Boh.) (3,04%) and *Otiorhynchus (Dorymerus) gemmatus* (Scop.) (2,69%) were codominant.

From the 110 caught species, 58 are stenotopic and stenobiont, being captured in a single ecosystem (42 species only in the valley bottom, 7 in the forest on the right valley side, 2 in the bushes on the left valley side and a single species in the bushes on the right valley side in the rocky area (tab. 1).

Four of the signaled snout-beetle in the "Turului Gorges" area are new species for the Romanian fauna: *Otiorhynchus (Dorymerus) lutosus* STIERLIN, 1858, *Foucartia liturata* (STIERLIN, 1884), *Rhamphus subaeneus* ILLIGER, 1807 and *Miarus (s. str.) ajugae* (HERBST, 1795) and 5 species: *Protaetia laevicole* (KIRBY, 1811), *Otiorhynchus (s. str.) porcatus* (HERBST, 1795), *Orias globulus* (BOHEMAN, 1843), *Ceutorhynchus posthumus* (GERMAR, 1824) and *Thamiocolus nubeculosus* GYLLENHAL, 1837 are new for Transylvania.

We have also remarked some rare species as: *Protaetia laevicole* (KIRBY), *Otiorhynchus (Tournieria) coarctatus* STIERLIN, 1861., *Otiorhynchus (Tournieria) ormay* STIERLIN and *Zacladus exiguus* (OLIVIER, 1807).

So, we conclude that snout-beetle fauna of "Turului Gorges" is rich both in the number of species and individuals and occupies different biotops as argument that in favour of floristical and faunistical complexity hosted by this reserve.

#### REFERENCES

- ABBAZZI P., OSELLA G. 1992. Elenco sistematico-faunistico degli Anthribidae, Rhinomaceridae, Attelabidae, Apionidae, Brentidae, Curculionidae Italiani (Insecta, Coleoptera, Curculionoidea) I parte. REDIA, 75(2): 267-414.
- ALONSO-ZARAZAGA M.A. 1989. Revision of the supraspecific taxa in the Palaearctic Apionidae Schoenher, 1823. 1. Introduction and subfamily Nanophyinae Seidlitz, 1891 (Coleoptera, Curculionoidea). Fragm. Entomol. Roma, 21(2): 205-262.
- ALONSO-ZARAZAGA M.A. 1990. Revision of the subgenera *Ceratapion* s.str. and *Echinostroma* nov. of the genus *Ceratapion* Schilsky, 1901 (Coleoptera, Apionidae), Fragm. Entomol. Roma, 22(2):399-528.
- COLONNELLI E. 1994. Neotype and lectotype designations for Curculionidae Ceutorhynchinae, with new synonymies and new combinations (Coleoptera), Fragm. Entomol., Roma, 26(1): 179-221.
- CSEKI E. 1916. Kirandulas az Aranyos-vágybe. Rav. Lap. 23(9-12): 149-156.
- CsURÓS-KAPТАLAN M. 1962. Aspekte din vegetația Cheii Turului. Studia Univ. "Babeș-Bolyai". biol. 1: 17-31.
- DIECKMANN L. 1974. Beiträge zur Insektenfauna der DDR: Coleoptera-Curculionidae (*Rhinomacerinae*, *Rhynchitinae*, *Attelabinae*, *Apoderinae*), Beitr. Ent., 24(1/4): 5-54.
- DIECKMANN L. 1977. Beiträge zur Insektenfauna der DDR: Coleoptera-Curculionidae (*Apioninae*), Beitr. Ent., 27(1): 7-143.
- DIECKMANN L. 1980. Beitrag zur Insekten der DDR: Coleoptera Curculionidae *Brachycerinae*, *Otiorhynchinae*, *Brachyderinae*), Beitr. Ent., Berlin, 30(1): 145-310.
- DIECKMANN L. 1983. Beiträge zur Insektenfauna der DDR: Coleoptera-Curculionidae (*Tanimecinae*, *Leptopininae*, *Cleoninae*, *Tanyrhynchinae*, *Cossoninae*, *Raymondi-onyminae*, *Bagoinae*, *Tanysphyrinae*), Beitr. Ent., Berlin, 33(2): 257-381.

- DIECKMANN L. 1986. Beiträge zur Insectenfauna der DDR: Coleoptera-Curculionidae (Erihinae)-Beitr. Ent, Berlin, 36(1): 119-181.
- DIECKMANN L. 1988. Beiträge zur Insektenfauna der DDR: Curculionidae (*Curculioninae*: *Ellescini*, *Acalyptini*, *Tychiini*, *Anthonomini*, *Curculionini*), Beitr. Ent. Berlin, 38(2): 365-468.
- ENDRÓDI S. 1960. Az ormányosbogarac (Curculionidae) kárpátmedencei lelőhelyadatai II.-Fundortsangaben über die Rüsselkäfer(Curculionidae) des Karpatenbeckens II.-Folia Entomologica Hungarica, Budapest, 13(1/2): 11-56.
- ENDRÓDI S. 1961. Bestimmungstabelle der *Otiorrhynchus*-Arten des Karpaten-Bekens (Coleoptera-Curculionidae). Krajské Nakladatelství Vostrave.
- ENDRÓDI S. 1969. Az ormányosbogarac (Curculionidae) kárpátmedencei lelőhelyadatai IV.-Fundortsangaben über die Rüsselkäfer(Curculionidae) des Karpatenbeckens IV.-Folia Entomologica Hungarica, Budapest, 22(13): 311-348.
- ENDRÓDI S. 1970. Az ormányosbogarac (Curculionidae) kárpátmedencei lelőhelyadatai V.-Fundortsangaben über die Rüsselkäfer(Curculionidae) des Karpatenbeckens V.-Folia Entomologica Hungarica, Budapest, 23(18): 349-400.
- FREUDE H., HARDE K.W., LOHSE G.A. 1981 (Eds.). Die Käfer Mitteleuropas. 10. Goecke & Evers. Krefeld.
- FREUDE H., HARDE K.W., LOHSE G.A. 1983 (Eds.). Die Käfer Mitteleuropas. 11. Goecke & Evers. Krefeld.
- KOCΣ I., PODLUSSÁNY A. 1999. Adatok Torockó és környékének ormányosalkatú bogárfaunájához (Coleoptera: Curculionoidea), ACTA, 1: 83-87.
- LAWRENCE J. F., NEWTON J. 1995. Families and subfamilies of Coleoptera, pp.779-1006. In: Pakaluk J., Slipinski S. A. (Eds.): Biology, Phylogeny and Classification of Coleoptera, Museum i Instytut Zoologii PAN, Warszawa.
- LOHSE G. A., LUCHT W. H. 1993. Die Käfer Mitteleuropas, Katalogteil zum, 3. Supplementband, Krefeld: 343-378.
- MARCU O. 1957. Contribuții la cunoașterea faunei coleopterelor Transilvaniei: în Buletinul Univ."V.Babeș and Bolyai" ser. Șt. naturii, 1, 1-2: 527-544.
- PETRI K. 1912. Siebenbürgens Käferfauna auf Grund ihrer Erforschung bis Jahre 1911. Jos Drotleff, Hermannstadt.
- PETRI K. 1925/1926. Ergänzungen und Berichtigungen zur Käferfauna Siebenbürgens 1912. Verh. Mittl. Siebenb. Ver. Naturw. Hermannstadt, 75(76): 165-206.
- PODLUSSÁNY A. 1996. Magyarszág ormányosalkatú bogarainak fajlistája (Coleoptera: Curculionoidea), Folia Entomologica Hungarica, Rovartani Kázlemények, 57: 197-225.
- RAKOSY L., VIEHMANN I. 1991. Argumente în favoarea unei rezervații naturale în Cheile Turului. Ocrot. nat. med. inconj., 35(1-2): 15-25.
- TEODOR L. 1993. Contribuții la studiul curculionidelor (Coleoptera: Curculionidae) din Cheile Turzii. Bul. inf. Soc. lepid. rom., 4(4): 215-222.
- TEODOR L. A., CRĂSAN A. 1996. Contributions to the knowledge of snout beetles (Coleoptera, Curculionidae) from "Scărăt-Belioara" Botanical Reservation (Romania). Bul.inf.Soc. lepid. rom., 7(1-2): 151-156.
- TEODOREANU M. 1986. Coleoptere edafice and epigee de pe Valea Ampoiului-Zlatna and Muncel-Baia de Arieș, Studia Univ. "Babeș-Bolyai", Biologia, 31(2): 35-39.

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