Weevils (Curculionidae) on meadows in the Kragujevac basin

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Introduction

The freely estimated world fauna of weevils comprises more than 60, 000 described species (Caldara & O'Brien, 1995). The ecological importance of this phytophagous group is really large. In the countries where the weevil fauna has been intensively researched, their ecological surveys occupy an important place in the environmental and biodiversity studies (Majzlan & Holecova, 1986; Sprick, 1990; Holecova, 1991a,b, 1992, 1993a,b,c,d, 1994; Knutelski, 1993; Cholewicka-Wisniewska, 1994; Knutelski & Skalski, 1993; Simon & Winkelmann, 1993; Sprick & Winkelmann, 1993; Wanat, 1993; Mazur & Wanat, 1994).

The comparative analysis of weevils on meadows in the Kragujevac basin was undertaken to form a preliminary picture of their fauna in open habitats there.

According to Lopatin & Matvejev (1995) Kragujevac basin lies in the zonobiome of Sub-Mediterranean-Balkan forests. This primarly plant associations are mostly transformed by human activities. Only 35% of the surface of Kragujevac vicinity belongs to natural plant cover (23% are forests, 12% natural meadows, and insignificant % swamp wegetation) (Veljovic, 1967).

Meadows in the Kragujevac basin are secondary plant associations, intermediate between the xerothermic meadows in Eastern Serbia and the mesophilic ones in Western Serbia. The dominant plants are Fabaceae and Poaceae.

Depending of elevation above sea level and floristic composition, two groups of meadows, valley meadows and meadows of the upland type, are distinguished.

Valley meadows possessed habitats of cut-back *Querceto-Fraxinetum serbicum* Rud. and *Saliceto-Populetum* Raj. forest communities. They belong to three associations:

-the association *Trifolio-Agrostidetum albae* Veljovic occupies the dampest, completely flat terrains (flooded in spring and fall) of limited surface area in river valleys;

-the association *Trifolio-Cynosuretum cristati* Veljovic belongs to the category of damp valley meadows (it does not tolerate long stagnation of water, but frequent flooding suits it). This association inhabits damper river valleys, damp terrains along brooks, and little hollows in hilly regions. Because they yield two mowings annually, meadows where the given association is found are economically very significant;

-the association *Agropyreto-Festucetum pratensis* Veljovic manifests characteristics of drier valley meadows. It grows in the former habitats of *Querceto-Fraxinetum serbicum* Rud. forests. Of 79 species of plants, 17 belong to the family Fabaceae and 11 to the Poaceae. This association is also of great economic significance. However, it is usually mowed only once a year because habitats formed by these meadows are fairly dry after the first mowing.

Upland meadows possessed the western, southwestern, and southern parts of the Kragujevac basin. They are on habitats of cut-back upland forests, primarily of the climatogenic community *Quercetum confertae-cerris* Rud.. They belong to two associations:

-the association *Trifolio-Chrysopogonetum grylli* Veljovic is a community with steppe characteristics, developed on gentle slopes with southern exposure in regions of rolling ground and low hills (180-300 m). This is the most stable and floristically the richest type of meadow (with 98 plant species, of which 19 belong to the family Fabaceae and 12 to the Poaceae). The species *Chrysopogon gryllus* is absolutely dominant. It achieves deep penetration with its powerful root (the active part of the root extends over a depth of 2.5-5 m), while the expansive bushes cover the soil, protecting it from drying and thereby making possible the appearance of other plants in the community. The optimal phase of the community is maintained only through regular mowing, without which these meadows undergo degradation and pass over into forests of a climatogenic community. Their economic significance is great, although the yield is lower than that of valley meadows. Meadows of this community are frequently plowed under, since they represent terrains suitable for agriculture;

-at elevations greater than 300 m (regions of high hills and low mountains), meadows of the preceding association pass over into the community *Agrostido-Andropogonetum ischaemi* Veljovic. This is a xerothermic meadow association that occupies warm and dry habitats with soils of the lowest quality (shallow, skeletal, acidic), often eroded. The community is also formed on plowed fields that have been abandoned. Meadows of this community are frequently plowed under and the plowed land watered, so that their floristic composition from stand to stand is variable. The greatest significance of these meadows is in the prevention of erosion.

Material and methods

For the present study, adult weevils in the Kragujevac basin were collected primarily during the period 1987-1995 on valley meadows, damp meadows, swampy meadows, upland meadows, artificial meadows, meadows with shrubs, uncultivated land, and ruderal vegetation.

Valley meadows (mainly *Agropyreto-Festucetum pratensis* Veljovic) are the most frequent form of natural meadow biotopes in the Kragujevac basin. From this reason material for the present study was collected from the greatest number of points on such meadows: Shumarice (at a number of places), Erdech, Divostin, Dracha, Vinjishte, Petrovac, Desimirovac, Beloshevac, Zhdraljica, and Zhezhelj.

The damp meadows (essentially the associations *Trifolio-Agrostidetum albae* Veljovic and *Trifolio-Cynosuretum cristati* Veljovic) lie near water courses or lakes. Collecting was done at the Shumarice, Dracha, Groshnica, environs of the Groshnica Reservoir, and Grbice. These meadows are mowed too.

The swampy meadows analyzed here are in direct contact with the lake in Shumarice and the Groshnica Reservoir. Phytocenologically, they are *Caricetum vulpinae-ripariae* (drier meadows in transition to meadows of the damp type) and *Agrostideto-Juncetum effusi* (periodically flooded).

Upland meadows are drier and at greater elevations. They contain steppe elements (like the association *Chrysopogonetum-Festucetum vallesiacae* Veljovic). For purposes of the present study, such meadows were investigated at a number of localities: Gornje Komarice, Adzhine Livade, Grbice, Besnjaja, Zhezhelj, and dry slopes flanking the Groshnica Reservoir.

Meadows with shrubs are a transitional form of habitat occurring mainly on the edges of forests. They were investigated at the localities Shumarice and Zhezhelj.

Artificial meadows are man-made communities of cultivated fodder plants formed on plowed ground. In the Kragujevac basin, this for the most part means *Trifolium*, *Medicago*, *Lotus*, and *Lathyrus*. These meadows are mowed as many as three times a year. Weevil colonies on such meadows were examined at the Shumarice, Stanovo, Erdech, Groshnica, Dragobracha, and Grbice.

Uncultivated land (abandoned plough-field) was examined only in Shumarice.

Ruderal vegetation, i.e., roadside plants, constitute a interesting habitat for weevils. For purposes of the present study, adults were collected from them at virtually all localities: Shumarice, the racetrack, Erdoglija, the city, Stanovo, Erdech, Grbice, Dracha, Groshnica, the Groshnica Reservoir, Treshnjevak, Adzhine Livade, Bresnica, Zhdraljica, Zhezhelj, Desimirovac, Bukurovac, Beshnjaja, and Gornje Komarice.

Adult weevils were captured for the most part using the technique of mowing, but often they were procured by carefully searching plants or the surface of the ground around them.

Following taxonomic analysis, detailed ecological analysis was performed from a number of aspects:

-establishment of the status of each weevil species in regard to frequency, dominance, and typicality by biotopes (characteristicness);

-elaboration of the picture of diversity of recorded weevil assemblies in terms of life forms I (phanerognaths (Ph) - with a long snout, and adelognaths (A) - with a short snout) and II (thamnobionts (T) - linked with arboreal plants, and hortobionts (H) - linked with herbaceous plants) and the spectrum of nutrition (M-monophages, O-oligophages, P-polyphages); For some species the literatural data about their life form II and feeding were absent;

-comparative analysis of the biodiversity of weevil colonies (assemblies) by biotopes through the general diversity index of Shannon and Weaver and Simpson's diversity formula (Schwerdtfeger, 1975);

-analysis of similarity of the recorded weevil assemblies using the Sorensen and Jaccard formulas.

The formulas and definitions used were discussed in detail in previous paper of the author (Peić, 1997).

Results and discussion

Overall during the indicated period, there were 1453 weevil finds containing 3061 specimens (including 1457 males) in 180 registrations on different meadows, uncultivated land, and ruderal vegetation in the Kragujevac basin. Two hundred and seventy-eight species belonging to the families Attelabidae, Apionidae, and Curculionidae were identified.

The faunistic list of weevil species found constitutes the basis of the entire investigation.

Table 1 presents a survey of the number of registrations, finds, and recorded species and specimens (by sex as well) by types of investigated biotopes and habitats. In connection with the

conspicuously smaller number of registrations on swampy and upland meadows, it should be noted that this is not the result of subjective error on the part of the investigator, but rather represents the actual proportion of occurrence of these biotopes in the vicinity of Kragujevac. The second reason is the state of these biotopes. Quantitative superiority of weevil assemblies in valley and damp meadows is entirely to be expected, on account of the wealth of their phytocenoses and greater yield of plant mass.

Tab. 1. Survey of the number of registrations, finds, species, specimens, males and females, and index of biodiversity by biotopes / habitats

	biotope / habitat	nr. reg.	nr. finds	nr.species	nr.specim.	nr. mal.
1.	valley meadows	59	571	171	1220	572
2.	damp meadows	24	254	115	535	280
3.	swampy meadows	4	15	13	31	15
4.	upland meadows	8	81	52	175	84
5.	meadows with shrubs	20	86	58	169	71
6.	artificial meadows	16	140	63	315	151

Tables 2-9 give detailed surveys of weevil assemblies recorded on meadows in the Kragujevac basin. The assembly of weevils of valley meadows (Tab. 2) is qualitatively and quantitatively the richest (1220 specimens belonging to 171 species) and most stable assembly (Tab. 1).

Tab. 2. Assembly of weevils on valley meadows

	VALLEY MEADOWS	nr.males	nr.fem.	nr.ind.	omin. (	frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Attel.	**Rhynchitinae**											
	Deporaus (s.str.) mannerheimi	0	1	1	SR	Ac	2%	P	10%	Ph	T	O
	Neocoenorhynus germanicus	1	1	2	SR	Ac	3%	P	38%	Ph	T	P
	Nanophyinae											
	Nanophyes brevis	8	5	13	R	Ac	7%	P	10%	Ph	H	M
	Nanophyes marmoratus	29	27	56	SD	Ac	12%	P	19%	Ph	H	O
	Nanomimus anulatus	2	2	4	SR	Ac	5%	P	10%	Ph	H	O
	Dieckmannielus helveticus	6	7	13	R	Ac	7%	P	14%	Ph	H	O
	Apioninae											
	Ceratapion onopordi	1	5	6	SR	Ac	8%	P	29%	Ph	H	O
	Diplapion stolidum	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
	Aspidapion radiolus	0	2	2	SR	Ac	2%	P	33%	Ph	H	O
	Alocentron curvirostre	1	0	1	SR	Ac	2%	P	38%	Ph	H	O
	Squamapion flavimanum	1	0	1	SR	Ac	2%	P	10%	Ph	H	O
	Taeniapion urticarium	4	5	9	SR	Ac	8%	P	19%	Ph	H	O
	Rhopalapion longirostre	1	0	1	SR	Ac	2%	P	14%	Ph	H	M
	Trichopterapion holosericeum	0	1	1	SR	Ac	2%	P	48%	Ph	T	O
	Protapion apricans	42	26	68	D	As	34%	I	67%	Ph	H	O
	Protapion dentipes	1	0	1	SR	Ac	2%	P	24%	Ph		
	Protapion filirostre	0	1	1	SR	Ac	2%	P	29%	Ph	H	O
	Protapion fulvipes	13	21	34	SD	Ac	24%	I	71%	Ph	H	O
	Protapion interjectum	0	2	2	SR	Ac	3%	P	14%	Ph	H	M
	Protapion nigritarse	21	35	56	SD	As	27%	I	71%	Ph	H	O
	Protapion ononicola	4	6	10	SR	Ac	8%	P	48%	Ph	H	O
Apionidae	Protapion schonherri	0	3	3	SR	Ac	3%	P	10%	Ph	H	O
	Protapion varipes	6	8	14	R	Ac	12%	P	38%	Ph	H	O
	Perapion affine	0	1	1	SR	Ac	2%	P	14%	Ph	H	M
	Perapion violaceum	3	4	7	SR	Ac	10%	P	19%	Ph	H	O
	Apion cruentatum	3	1	4	SR	Ac	7%	Ch	5%	Ph	H	O
	Apion frumentarium	1	4	5	SR	Ac	5%	P	24%	Ph	H	O
	Catapion jaffense	8	9	17	R	Ac	14%	P	33%	Ph	H	O
	Catapion pubescens	2	3	5	SR	Ac	5%	P	33%	Ph	H	O
	Catapion seniculus	3	10	13	R	Ac	15%	I	57%	Ph	H	O
	Stenopterapion tenue	0	2	2	SR	Ac	3%	P	29%	Ph	H	O
	Iscnopterapion loti	8	11	19	R	Ac	15%	P	33%	Ph	H	O
	Ischnopterapion virens	6	8	14	R	Ac	15%	P	24%	Ph	H	O
	Holotrichapion oblongum	1	0	1	SR	Ac	2%	P	10%	Ph	H	M
	Holotrichapion ononis	2	0	2	SR	Ac	2%	Ch	5%	Ph	H	O
	Holotrichapion pisi	3	5	8	SR	Ac	8%	P	29%	Ph	H	P
	Hemitrichapion pavidum	2	0	2	SR	Ac	3%	P	19%	Ph	H	O
	Cyanapion afer	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	M
	Cyanapion columbinum	0	3	3	SR	Ac	5%	P	38%	Ph	H	O
	Cyanapion gyllenhali	0	4	4	SR	Ac	3%	P	14%	Ph	H	O
	Oxystoma cerdo	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
	Oxystoma craccae	3	2	5	SR	Ac	7%	I	52%	Ph	H	O
	Oxystoma dimidiatum	0	1	1	SR	Ac	2%	P	29%	Ph	H	O
	Oxystoma pomonae	2	2	4	SR	Ac	3%	P	24%	Ph	H	O
	Oxystoma subulatum	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
	Eutrichapion ervi	4	4	8	SR	Ac	7%	P	24%	Ph	H	O
	Eutrichapion melancholicum	2	0	2	SR	Ac	3%	Ch	5%	Ph	H	O
	Eutrichapion punctigerum	6	9	15	R	Ac	19%	P	46%	Ph	H	O
	Eutrichapion viciae	2	2	4	SR	Ac	3%	P	38%	Ph	H	O

Tab. 2. Assembly of weevils on valley meadows (continuation 1).

	Holotrichapion aestimatum	3	2	5	SR	Ac	3%	P	19%	Ph	H	P
	Polydrosinae											
	Otiorhynchus (Arammichnus) ligustici	1	2	3	SR	Ac	5%	P	10%	A		P
	Trachyphloeus alternans	0	2	2	SR	Ac	2%	Ch	5%	A	H	M
	Phyllobius (Ustavenus) betulae	5	7	12	SR	Ac	10%	I	62%	A	T	O
	Phyllobius (Ustavenus) longipilis	1	0	1	SR	Ac	2%	Ch	5%	A		
	Phyllobius (Ustavenus) scutellaris	5	4	9	SR	Ac	5%	P	14%	A	H	O
	Phyllobius (Nemoicus) oblongus	3	1	4	SR	Ac	3%	I	52%	A	T	P
	Polydrusus (Metallites) impar	0	1	1	SR	Ac	2%	P	10%	A	T	O
	Polydrusus (Tylodrusus) pterygomalis	2	1	3	SR	Ac	2%	Ch	5%	A	T	P
	Polydrusus (Tylodrusus) corruscus	1	1	2	SR	Ac	3%	P	14%	A	T	O
	Polydrusus (s.str.) picus	1	0	1	SR	Ac	2%	P	38%	A	T	P
	Polydrusus (Neodrosus) thalassinus	0	1	1	SR	Ac	2%	P	29%	A	T	O
	Eusomus ovulum	0	13	13	R	Ac	12%	P	38%	A	H	P
	Sciaphilus asperatus	1	0	1	SR	Ac	2%	P	14%	A	H	P
	Foucartia liturata	1	0	1	SR	Ac	2%	P	14%	A		P
	Sciaphobus barbatulus	1	1	2	SR	Ac	2%	P	14%	A		
	Sciaphobus caesius	12	4	16	R	Ac	7%	P	29%	A		
	Mesagroicus obscurus	0	3	3	SR	Ac	5%	Ch	5%	A	H	O
	Sitona bosnicus	1	0	1	SR	Ac	2%	Ch	5%	A		
	Sitona cylindricollis	0	1	1	SR	Ac	2%	P	10%	A	H	O
	Sitona hispidulus	9	7	16	R	Ac	15%	P	43%	A	H	O
	Sitona humeralis	4	8	12	SR	Ac	10%	P	33%	A	H	P
	Sitona inops	1	0	1	SR	Ac	2%	P	19%	A	H	M
	Sitona languidus	1	3	4	SR	Ac	5%	Ch	5%	A	H	M
	Sitona lepidus	2	2	4	SR	Ac	2%	Ch	5%	A	H	O
	Sitona lineatus	9	2	11	SR	Ac	8%	P	19%	A	H	P
	Sitona macularius	0	2	2	SR	Ac	3%	P	10%	A	H	P
	Sitona ononidis	1	0	1	SR	Ac	2%	Ch	5%	A	H	P
	Sitona puncticollis	0	2	2	SR	Ac	3%	P	29%	A	H	O
	Sitona sulcifrons	26	29	55	SD	As	31%	P	43%	A	H	O
	Sitona suturalis	3	2	5	SR	Ac	5%	P	19%	A	H	O
	Sitona waterhousei	6	15	21	R	Ac	15%	P	14%	A	H	O
	Cleoninae											
	Lixus (Eulixus) iridis	3	1	4	SR	Ac	3%	P	10%	Ph	H	P
	Lixus (Dilixellus) algirus	0	2	2	SR	Ac	2%	P	10%	Ph	H	P
	Lixus (Lixochelus) cardui	1	1	2	SR	Ac	2%	Ch	5%	Ph	H	O
	Lixus (Lixochelus) filiformis	1	2	3	SR	Ac	2%	P	19%	Ph	H	O
	Larinus (Larinodontes) jaceae	2	3	5	SR	Ac	3%	P	10%	Ph	H	O
	Larinus (Larinodontes) planus	1	0	1	SR	Ac	2%	Ch	5%	Ph	H	O
	Larinus (Larinodontes) turbinatus	0	4	4	SR	Ac	3%	P	19%	Ph	H	O
	Molytinae											
	Hypera adspersa	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
	Hypera elongata	1	0	1	SR	Ac	2%	P	10%	Ph	H	O
	Hypera meles	0	4	4	SR	Ac	5%	Ch	5%	Ph	H	O
	Hypera nigrirostris	1	0	1	SR	Ac	2%	P	14%	Ph	H	O
	Hypera pedestris	3	3	6	SR	Ac	5%	P	14%	Ph	H	O
	Hypera plantaginis	3	3	6	SR	Ac	10%	P	10%	Ph	H	O
	Hypera postica	6	4	10	SR	Ac	12%	P	29%	Ph	H	O
	Hypera trilineata	1	7	8	SR	Ac	8%	P	14%	Ph	H	O
	Hypera viciae	2	3	5	SR	Ac	3%	Ch	5%	Ph	H	O
	Hypera zoilus	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
	Alophus kaufmanni	1	0	1	SR	Ac	2%	P	14%	Ph		
	Ceutorhynchinae											
	Rhinoncus pericarpius	1	0	1	SR	Ac	2%	P	19%	Ph	H	O
	Neophytobius quadrinodosus	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
	Amalus scortillum	2	1	3	SR	Ac	5%	P	10%	Ph	H	O
	Ceutorhynchus assimilis	0	1	1	SR	Ac	2%	P	19%	Ph	H	O
	Ceutorhynchus atomus	5	0	5	SR	Ac	7%	P	14%	Ph	H	O
	Ceutorhynchus barbareae	0	2	2	SR	Ac	2%	P	14%	Ph	H	O
	Ceutorhynchus contractus	3	13	16	R	Ac	12%	P	24%	Ph	H	P
C	Ceutorhynchus erysimi	2	1	3	SR	Ac	3%	P	24%	Ph	H	O
u	Ceutorhynchus floralis	90	72	162	ED	Ac	24%	P	48%	Ph	H	P
r	Ceutorhynchus fulvitarsis	0	1	1	SR	Ac	2%	Ch	5%	Ph		
c	Ceutorhynchus griseus	0	1	1	SR	Ac	2%	P	10%	Ph		O
u	Ceutorhynchus hirtulus	0	2	2	SR	Ac	3%	P	14%	Ph	H	O
l	Ceutorhynchus obstrictus	0	1	1	SR	Ac	2%	P	10%	Ph	H	P
i	Ceutorhynchus roberti	4	2	6	SR	Ac	5%	P	19%	Ph	H	M
o	Ceutorhynchus scapularis	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
n	Glocianus distinctus	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
i	Glocianus pilosellus	1	1	2	SR	Ac	3%	Ch	5%	Ph	H	O
d	Glocianus punctiger	2	5	7	SR	Ac	12%	P	24%	Ph	H	M
a	Paretelhelcus pollinarius	0	2	2	SR	Ac	2%	Ch	5%	Ph	H	M
e	Coeliastes lamii	1	0	1	SR	Ac	2%	P	10%	Ph	H	O

Tab. 2. Assembly of weevils on valley meadows (continuation 2).

Nedyus quadrimaculatus	5	14	19	R	Ac	3%	P	14%	Ph	H	M
Datonychus melanostictus	2	0	2	SR	Ac	3%	P	19%	Ph	H	O
Mogulones abbreviatulus	0	1	1	SR	Ac	2%	P	14%	Ph	H	O
Mogulones euphorbiae	0	1	1	SR	Ac	2%	P	14%	Ph	H	O
Mogulones larvatus	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
Mogulones symphyti	3	2	5	SR	Ac	7%	P	14%	Ph	H	M
Trichosirocalus troglodytes	2	3	5	SR	Ac	5%	P	24%	Ph	H	M
Zacladus exiguus	3	4	7	SR	Ac	5%	P	10%	Ph	H	O
Baridinae											
Baris angusta	2	0	2	SR	Ac	3%	P	10%	Ph	H	O
Limnobaris dolorosa	3	0	3	SR	Ac	5%	P	14%	Ph	H	O
Curculioninae											
Anthonomus (s.str.) rubi	2	2	4	SR	Ac	5%	P	38%	Ph	H	O
Bradybatus seriesetosus	1	0	1	SR	Ac	2%	P	14%	Ph	T	O
Bradybatus tomentosus	0	1	1	SR	Ac	2%	P	19%	Ph		
Curculio (s.str.) glandium	2	2	4	SR	Ac	2%	P	24%	Ph	T	O
Curculio (Balanobius) pyrrhoceras	1	1	2	SR	Ac	3%	P	14%	Ph	T	O
Curculio (Balanobius) salicivorus	1	0	1	SR	Ac	2%	Ch	5%	Ph	T	O
Tychiinae											
Lignyodes enucleator	0	2	2	SR	Ac	3%	Ch	5%	Ph	T	O
Lignyodes muerlei	1	0	1	SR	Ac	2%	Ch	5%	Ph	T	O
Tychius aureolus	1	0	1	SR	Ac	2%	Ch	5%	Ph	H	O
Tychius cuprifer	3	2	5	SR	Ac	7%	P	43%	Ph	H	O
Tychius junceus	1	3	4	SR	Ac	5%	P	24%	Ph	H	P
Tychius kulzeri	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
Tychius medicaginis	2	3	5	SR	Ac	7%	P	24%	Ph	H	O
Tychius picirostris	4	2	6	SR	Ac	5%	P	29%	Ph	H	O
Tychius quinquepunctatus	7	6	13	R	Ac	10%	P	38%	Ph	H	O
Tychius squamulatus	0	2	2	SR	Ac	2%	P	29%	Ph	H	M
Tychius stephensi	1	1	2	SR	Ac	3%	P	24%	Ph	H	O
Sibinia pellucens	8	5	13	R	Ac	3%	P	14%	Ph	H	O
Sibinia phalerata	0	1	1	SR	Ac	2%	Ch	5%	Ph	H	O
Sibinia viscariae	3	1	4	SR	Ac	5%	P	10%	Ph	H	O
Notarinae											
Dorytomus (Olamus) puberulus	1	0	1	SR	Ac	2%	Ch	5%	Ph	T	O
Orthochaetes setiger	0	2	2	SR	Ac	2%	Ch	5%	Ph	H	P
Smicronyx brevicornis	1	1	2	SR	Ac	3%	P	24%	Ph	H	O
Smicronyx pygmaeus	1	0	1	SR	Ac	2%	P	10%	Ph	H	O
Smicronyx jungermanniae	11	7	18	R	Ac	14%	P	38%	Ph	H	O
Bagoinae											
Bagous (s.str.) tempestivus	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
Rhynchaeninae											
Rhamphus oxyacanthae	1	4	5	SR	Ac	5%	P	33%	Ph	T	O
Rhamphus pulicarius	0	1	1	SR	Ac	2%	P	19%	Ph	T	P
Pseudorchestes pratensis	1	0	1	SR	Ac	2%	Ch	5%	Ph	H	O
Gymnetrinae											
Mecinus janthinus	2	0	2	SR	Ac	3%	P	10%	Ph	H	O
Miarus (s.str.) fennicus	1	3	4	SR	Ac	3%	P	10%	Ph	H	O
Gymnetron (s.str.) labile	1	1	2	SR	Ac	2%	P	14%	Ph	H	M
Gymnetron (s.str.) pascuorum	10	10	20	R	Ac	8%	P	38%	Ph	H	M
Gymnetron (s.str.) rostellum	2	0	2	SR	Ac	3%	P	10%	Ph	H	O
Gymnetron (s.str.) stimulosum	2	0	2	SR	Ac	3%	P	14%	Ph	H	O
Gymnetron (s.str.) veronicae	0	1	1	SR	Ac	2%	P	10%	Ph	H	O
Gymnetron (Rhinusa) linariae	6	2	8	SR	Ac	7%	P	19%	Ph	H	O
Gymnetron (Rhinusa) tetrum	2	0	2	SR	Ac	3%	P	14%	Ph	H	O
Cionus thapsus	0	1	1	SR	Ac	2%	P	14%	Ph	H	O
Cionus tuberculosus	1	0	1	SR	Ac	2%	P	14%	Ph	H	O
Stereonychus fraxini	10	12	22	R	Ac	17%	P	48%	Ph	T	O

Only *Ceutorhynchus floralis* is eudominant weevil species on valley meadows. The presence of all other species is accidental, except for two species that are accessory.

Thirty-two species (18.8%) are characteristic (exclusively occurred on this type of biotopes) and only 4.7% (eight species) indifferent (founded in the more than half of the investigated biotopes / habitats), which also confirms stability of the assembly.

Thirty-one species (18.1%) are adelognaths. Thamnobionts make up 11.7%, i.e., they number 20 species. Eighteen species (10.5%) are monophagous, while 22 (12.8%) are polyphagous.

Assemblies most similar to this one are registered on ruderal vegetation (0.5236; 0.3547) and damp meadows (0.5035; 0.3364) (Tab. 10).

The assembly of weevils of damp meadows ranks second in terms of size and stability (Tab. 1).

Tab. 3. Assembly of weevils on damp meadows

	DAMP MEADOWS	nr.males	nr.fem.	nr.ind.	domin. (D)		frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Attel.	**Rhynchitinae**												
	Pselaphorhynchites tomentosus	1	0	1	SR	0%	Ac	4%	P	10%	Ph	T	O
	Neocoenorrhinus germanicus	2	0	2	SR	0%	Ac	8%	P	38%	Ph	T	P
	Neocoenorrhinus pauxillus	1	1	2	SR	0%	Ac	4%	P	24%	Ph	T	P
Apionidae	**Nanophyinae**												
	Nanophyes brevis	1	2	3	SR	1%	Ac	8%	P	10%	Ph	H	M
	Nanophyes marmoratus	32	26	58	ED	11%	As	25%	P	19%	Ph	H	O
	Nanomimus anulatus	5	0	5	SR	1%	Ac	17%	P	10%	Ph	H	O
	Dieckmanniellus helveticus	34	22	56	ED	10%	Ac	13%	P	14%	Ph	H	O
	Apioninae												
	Ceratapion onopordi	4	2	6	R	1%	Ac	13%	P	29%	Ph	H	O
	Alocentron curvirostre	0	1	1	SR	0%	Ac	4%	P	38%	Ph	H	O
	Melanapion minimum	1	2	3	SR	1%	Ac	8%	P	14%	Ph	T	O
	Squamapion atomarium	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Squamapion flavimanum	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Squamapion vicinum	0	1	1	SR	0%	Ac	4%	P	14%	Ph	H	O
	Taeniapion urticarium	2	11	13	SD	2%	Ac	17%	P	19%	Ph	H	O
	Pseudapion fulvirostre	2	0	2	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Pseudapion rufirostre	0	2	2	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Malvapion malvae	0	1	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Trichopterapion holosericeum	1	0	1	SR	0%	Ac	4%	P	48%	Ph	T	O
	Protapion apricans	11	9	20	SD	4%	As	38%	I	67%	Ph	H	O
	Protapion dentipes	0	2	2	SR	0%	Ac	8%	P	24%	Ph		
	Protapion filirostre	0	2	2	SR	0%	Ac	8%	P	29%	Ph	H	O
	Protapion fulvipes	5	4	9	R	2%	Ac	17%	I	71%	Ph	H	O
	Protapion interjectum	1	0	1	SR	0%	Ac	4%	P	14%	Ph	H	M
	Protapion nigritarse	2	4	6	R	1%	Ac	21%	I	71%	Ph	H	O
	Protapion ononicola	3	2	5	SR	1%	Ac	17%	P	48%	Ph	H	O
	Protapion trifolii	19	9	28	D	5%	As	25%	I	57%	Ph	H	O
	Protapion varipes	7	2	9	R	2%	As	25%	P	38%	Ph	H	O
	Perapion lemoroi	0	1	1	SR	0%	Ac	4%	Ch	5%	Ph	H	M
	Perapion violaceum	0	4	4	SR	1%	Ac	13%	P	19%	Ph	H	O
	Apion frumentarium	1	0	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Apion frumentarium	1	1	2	SR	0%	Ac	8%	P	24%	Ph	H	O
	Catapion pubescens	0	1	1	SR	0%	Ac	4%	P	33%	Ph	H	O
	Catapion seniculus	1	2	3	SR	1%	Ac	4%	I	57%	Ph	H	O
	Stenopterapion tenue	1	0	1	SR	0%	Ac	4%	P	29%	Ph	H	O
	Ischnopterapion loti	2	1	3	SR	1%	Ac	8%	P	33%	Ph	H	O
	Ischnopterapion virens	1	2	3	SR	1%	Ac	13%	P	24%	Ph	H	O
	Holotrichapion aestimatum	1	0	1	SR	0%	Ac	4%	P	19%	Ph	H	P
	Holotrichapion pisi	1	1	2	SR	0%	Ac	8%	P	29%	Ph	H	P
	Mesotrichapion punctirostre	1	1	2	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Cyanapion columbinum	0	1	1	SR	0%	Ac	4%	P	38%	Ph	H	O
	Cyanapion gyllenhali	0	1	1	SR	0%	Ac	4%	P	14%	Ph	H	O
	Cyanapion platalea	0	2	2	SR	0%	Ac	8%	P	14%	Ph	H	O
	Oxystoma craccae	0	1	1	SR	0%	Ac	4%	I	52%	Ph	H	O
	Eutrichapion ervi	0	1	1	SR	0%	Ac	4%	P	24%	Ph	H	O
	Eutrichapion gribodoi	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	M
	Eutrichapion punctigerum	6	4	10	R	2%	Ac	21%	P	48%	Ph	H	O
	Eutrichapion viciae	2	2	4	SR	1%	Ac	8%	P	38%	Ph	H	O
	Polydrosinae												
	Otiorhynchus (Dodecastichus) geniculatus	0	1	1	SR	0%	Ac	4%	P	10%	A		
	Phyllobius (s.str.) incanus	0	1	1	SR	0%	Ac	4%	P	10%	A	T	P
	Phyllobius (s.str.) urticae	2	2	4	SR	1%	Ac	8%	Ch	5%	A		P
	Phyllobius (s.str.) pyri	1	2	3	SR	1%	Ac	8%	P	29%	A	T	P
	Phyllobius (Ustavenus) betulae	5	3	8	R	1%	Ac	21%	I	62%	A	T	O
	Phyllobius (Ustavenus) scutellaris	0	1	1	SR	0%	Ac	4%	P	14%	A	H	O
	Phyllobius (Nemoicus) oblongus	2	2	4	SR	1%	Ac	8%	I	52%	A	T	P
	Polydrusus (Tylodrusus) corruscus	1	0	1	SR	0%	Ac	4%	P	14%	A	T	O
	Polydrusus (s.str.) picus	0	1	1	SR	0%	Ac	4%	P	38%	A	T	P
	Eusomus ovulum	0	1	1	SR	0%	Ac	4%	P	38%	A	H	P
	Sciaphilus asperatus	0	2	2	SR	0%	Ac	4%	P	14%	A	H	P
	Sitona cylindricollis	0	1	1	SR	0%	Ac	4%	P	10%	A	H	O
	Sitona hispidulus	2	4	6	R	1%	As	25%	P	43%	A	H	O
	Sitona lineatus	8	2	10	R	2%	Ac	17%	P	19%	A	H	P
	Sitona sulcifrons	5	4	9	R	2%	As	25%	P	43%	A	H	O
	Sitona suturalis	3	4	7	R	1%	Ac	8%	P	19%	A	H	O
	Tanymecinae												
	Tanymecus palliatus	1	0	1	SR	0%	Ac	4%	P	19%	A	H	P
	Molytinae												
	Hypera elongata	1	0	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Hypera plantaginis	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Hypera postica	0	2	2	SR	0%	Ac	8%	P	29%	Ph	H	O
	Donus viennensis	0	1	1	SR	0%	Ac	4%	Ch	5%	Ph		
	Limobius borealis	1	1	2	SR	0%	Ac	4%	Ch	5%	Ph	H	O

Tab. 3. Assembly of weevils on damp meadows (continuation 1)

Curculionidae	**Ceutorhynchinae**											
	Rhinoncus pericarpius	0	1	1	SR	0%	Ac	4%	P	19%	Ph	H	O
	Rhinoncus perpendicularis	2	1	3	SR	1%	Ac	13%	P	14%	Ph	H	O
	Pelenomus comari	3	2	5	SR	1%	Ac	13%	P	10%	Ph	H	O
	Ceutorhynchus atomus	2	0	2	SR	0%	Ac	8%	P	14%	Ph	H	O
	Ceutorhynchus chalybaeus	1	1	2	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Ceutorhynchus constrictus	1	1	2	SR	0%	Ac	8%	P	10%	Ph	H	M
	Ceutorhynchus contractus	2	3	5	SR	1%	Ac	8%	P	24%	Ph	H	P
	Ceutorhynchus erysimi	7	9	16	SD	3%	Ac	13%	P	24%	Ph	H	O
	Ceutorhynchus floralis	5	8	13	SD	2%	Ac	17%	P	48%	Ph	H	P
	Ceutorhynchus roberti	1	4	5	SR	1%	Ac	8%	P	19%	Ph	H	M
	Oprohinus suturalis	0	2	2	SR	0%	Ac	8%	P	10%	Ph	H	O
	Glocianus punctiger	1	0	1	SR	0%	Ac	4%	P	24%	Ph	H	M
	Nedyus quadrimaculatus	11	15	26	SD	5%	As	33%	P	14%	Ph	H	M
	Datonychus melanostictus	6	5	11	SD	2%	Ac	8%	P	19%	Ph	H	O
	Mogulones asperifoliarium	1	1	2	SR	0%	Ac	4%	P	14%	Ph	H	P
	Mogulones pallidicornis	10	4	14	SD	3%	Ac	13%	P	10%	Ph	H	O
	Mogulones symphyti	5	8	13	SD	2%	Ac	13%	P	14%	Ph	H	M
	Thamiocolus kraatzi	0	1	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Thamiocolus signatus	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Trichosirocalus troglodytes	0	1	1	SR	0%	Ac	4%	P	24%	Ph	H	M
	Zacladus exiguus	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Zygopinae												
	Coryssomerus capucinus	1	0	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Baridinae												
	Baris angusta	4	0	4	SR	1%	Ac	8%	P	10%	Ph	H	O
	Baris lepidii	5	1	6	R	1%	Ac	4%	P	14%	Ph	H	O
	Limnobaris dolorosa	2	2	4	SR	1%	Ac	13%	P	14%	Ph	H	O
	Curculioninae												
	Curculio (Balanobius) crux	1	1	2	SR	0%	Ac	8%	P	10%	Ph	T	O
	Tychiinae												
	Tychius meliloti	1	0	1	SR	0%	Ac	4%	P	14%	Ph	H	O
	Tychius quinquepunctatus	3	1	4	SR	1%	Ac	8%	P	38%	Ph	H	O
	Tychius tibialis	1	0	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Notarinae												
	Borytomus (Euolamus) ictor	2	1	3	SR	1%	Ac	4%	P	10%	Ph	T	O
	Smicronyx jungermanniae	1	0	1	SR	0%	Ac	4%	P	38%	Ph	H	O
	Bagoinae												
	Bagous (s.str.) tempestivus	1	1	2	SR	0%	Ac	8%	P	10%	Ph	H	O
	Rhynchaeninae												
	Rhynchaenus (Isochnus) saliceti	1	1	2	SR	0%	Ac	8%	Ch	5%	Ph	T	O
	Gymnetrinae												
	Miarus ajugae	1	1	2	SR	0%	Ac	8%	P	14%	Ph	H	O
	Miarus fennicus	0	1	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Gymnetron (s.str.) beccabungae	1	1	2	SR	0%	Ac	8%	Ch	5%	Ph	H	O
	Gymnetron (s.str.) pascuorum	1	1	2	SR	0%	Ac	8%	P	38%	Ph	H	M
	Gymnetron (s.str.) veronicae	1	1	2	SR	0%	Ac	8%	P	10%	Ph	H	O
	Gymnetron (s.str.) villosulum	1	0	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Gymnetron (Rhinusa) bipustulatum	1	0	1	SR	0%	Ac	4%	Ch	5%	Ph	H	O
	Gymnetron (Rhinusa) collinum	0	1	1	SR	0%	Ac	4%	P	14%	Ph	H	O
	Gymnetron (Rhinusa) linariae	2	0	2	SR	0%	Ac	8%	P	19%	Ph	H	O
	Cionus alauda	1	0	1	SR	0%	Ac	4%	P	10%	Ph	H	O
	Cionus tuberculosus	1	0	1	SR	0%	Ac	4%	P	14%	Ph	H	O
	Stereonychus fraxini	4	2	6	R	1%	Ac	13%	P	48%	Ph	T	O
	Cleopus solani	1	0	1	SR	0%	Ac	4%	P	10%	Ph	H	O

Linked with plants of the genus *Lythrum*, only *Nanophyes marmoratus* and *Nanomimus helveticus* are eudominant, while only *Protapion trifolii* is dominant.

In regard to occurrence, 108 species (93.9%) are accidental. The rest are accessory.

Seventeen species (14.8%) are characteristic, while eight species (six species of the *Apionidae* and two thamnobionts of the genus *Phyllobius*) are indifferent.

Seventeen species are adelognaths.

Hortobionts (87%) clearly predominate, as on other meadows. Eleven species (9.5%) are monophagous, and 16 species are polyphagous.

The weevil assembly of damp meadows coincides to an exceptionally great extent with that recorded on valley meadows (0.5035; 0.3364), while similarity with other assemblies is far less pronounced, the closest being the assembly of ruderal vegetation (0.4475; 0.2882), followed by that of uncultivated land (0.4111; 0.2587) (Tab. 10).

Tab. 4. Assembly of weevils on swampy meadows

SWAMPY MEADOWS	nr.males	nr.fem.	nr.ind.	domin. (D)		frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Apioninae												
Melanapion minimum	1	0	1	SD	3%	As	25%	P	14%	Ph	T	O
Taeniapion urticarium	0	1	1	SD	3%	As	25%	P	19%	Ph	H	O
Protapion fulvipes	2	1	3	D	10%	K	50%	I	71%	Ph	H	O
Protapion ononicola	0	1	1	SD	3%	As	25%	P	48%	Ph	H	O
Protapion trifolii	2	1	3	D	10%	As	25%	I	57%	Ph	H	O
Ischnopterapion loti	0	1	1	SD	3%	As	25%	P	33%	Ph	H	O
Molytinae												
Hypera suspiciosa	0	1	1	SD	3%	As	25%	P	14%	Ph	H	O
Ceutorhynchinae												
Pelenomus comari	1	0	1	SD	3%	As	25%	P	10%	Ph	H	O
Mogulones abbreviatulus	3	0	3	D	10%	As	25%	P	14%	Ph	H	O
Mogulones raphani	4	5	9	ED	29%	K	50%	P	14%	Ph	H	M
Tychiinae												
Tychius cuprifer	0	1	1	SD	3%	As	25%	P	43%	Ph	H	O
Notarinae												
Notaris scirpi	1	4	5	ED	16%	As	25%	Ch	5%	Ph	H	O
Gymnetrinae												
Stereonychus fraxini	1	0	1	SD	3%	As	25%	P	48%	Ph	T	O

The weevil assembly of swampy meadows is the smallest (only 13 species with 31 specimens) and least stable of all meadow assemblies (Tab.1).

Two species (15.4%) are eudominant: *Mogulones raphani*, a monophagous species linked with the plant *Symphytum officinalis*; and *Notaris scirpi*, which is linked with *Carex* and *Scirpus*. The first species is constant, the second the only characteristic one.

Two indifferent species of the Apionidae and *Mogulones abbreviatulus* (which is for the most part linked with *Symphytum officinalis*) are dominant.

All species found on swampy meadows are phanerognaths.

Two species are thamnobionts whose development and nutrition are linked with valley willow groves or ash forests (*Stereonychus fraxini*), fragments of which intrude into swampy meadows.

With respect to nutrition, all species are oligophagous, with the exception of the already mentioned monophagous form *Mogulones raphani*.

The similarity of this assembly to other assemblies is low. The greatest similarity is with artificial meadows (only 0.1316; 0.0704) (Tab. 10).

The numbers of founded weevil species and specimens on upland meadows and meadows with shrubs are rather similar.

Eusomus ovulum (parthenogenetic, polyphagous species), *Larinus minutus* (connected with *Centaurea*) and *Tychius breviusculus* (oligophagous on different *Melilotus*) are dominant weevils. *Eusomus ovulum* is the constant too, together with *Gymnetron tetrum*.

A basic feature of the assembly of weevils in upland meadows is the highest characteristicness (21.1% of species), while only 7.6% are indifferent.

Just two (3.8%) weevil species on upland meadows are thamnobionts (*Otiorhynchus fullo*, linked with *Quercus*, *Crataegus*, *Prunus spinosa*, and *Syringa vulgaris*; and *Rhynchaenus fagi*, whose development is linked exclusively with *Fagus sylvatica*, but whose feeding is linked with *Quercus* and *Crataegus* as well). It is the smallest thamnobionts presence registered on all examined meadows.

Only 5.8% (three species) are polyphagous on upland meadows. This the smallest value in comparison with other examined meadows shows the higher level of nutrition specialization in this weevil assembly.

The most similar to this assembly are the assemblies of artificial meadows (0.3692, i.e. 0.2234) and ruderal vegetation (0.3590 or 0.2188).

According the index of biodiversity (Tab. 1), this is a very sensitive assembly.

The assembly of weevils on meadows with shrubs is the mixture of all other assemblies registered in Kragujevac basin. It is illustrated by similar values of its indexes of similarity with others (Tab. 10)

Tab. 5. Assembly of weevils on upland meadows

Apioninae												
Ceratapion carduorum	0	1	1	SR	1%	Ac	13%	P	14%	Ph	H	O
Squamapion hoffmanni	0	4	4	SD	2%	Ac	13%	Ch	5%	Ph	H	O
Protapion apricans	3	1	4	SD	2%	As	25%	I	67%	Ph	H	O
Protapion dissimile	1	0	1	SR	1%	Ac	13%	Ch	5%	Ph	H	M
Protapion filirostre	0	1	1	SR	1%	Ac	13%	P	29%	Ph	H	O
Protapion nigritarse	2	3	5	SD	3%	As	38%	I	71%	Ph	H	O
Protapion ononicola	0	3	3	R	2%	As	25%	P	48%	Ph	H	O
Protapion trifolii	2	0	2	R	1%	As	25%	I	57%	Ph	H	O
Pseudoperapion brevirostre	1	2	3	R	2%	Ac	13%	P	10%	Ph	H	O
Pseudostenapion simum	0	1	1	SR	1%	Ac	13%	Ch	5%	Ph	H	O
Perapion violaceum	1	0	1	SR	1%	Ac	13%	P	19%	Ph	H	O
Catapion jaffense	1	0	1	SR	1%	Ac	13%	P	33%	Ph	H	O
Catapion pubescens	1	0	1	SR	1%	Ac	13%	P	33%	Ph	H	O
Catapion seniculus	3	5	8	SD	5%	As	38%	I	57%	Ph	H	O
Ischnopterapion loti	1	4	5	SD	3%	As	25%	P	33%	Ph	H	O
Hemitrichapion pavidum	4	0	4	SD	2%	As	25%	P	19%	Ph	H	O
Eutrichapion punctigerum	0	1	1	SR	1%	Ac	13%	P	48%	Ph	H	O
Polydrosinae												
Otiorhynchus (Tournieria) fullo	0	1	1	SR	1%	Ac	13%	P	14%	A	T	O
Eusomus ovulum	0	9	9	D	5%	K	50%	P	38%	A	H	P
Sciaphobus caesius	0	1	1	SR	1%	Ac	13%	P	29%	A		
Sitona humeralis	1	1	2	R	1%	Ac	13%	P	33%	A	H	P
Sitona inops	1	0	1	SR	1%	Ac	13%	P	19%	A	H	M
Sitona puncticollis	1	0	1	SR	1%	Ac	13%	P	29%	A	H	O
Sitona sulcifrons	0	1	1	SR	1%	Ac	13%	P	43%	A	H	O
Cleoninae												
Cyphocleonus trisulcatus	0	1	1	SR	1%	Ac	13%	Ch	5%	Ph	H	O
Lixus (Lixochelus) filiformis	1	0	1	SR	1%	Ac	13%	P	19%	Ph	H	O
Lixus (Lixochelus) scolopax	0	1	1	SR	1%	Ac	13%	Ch	5%	Ph	H	O
Larinus (Larinodontes) turbinatus	0	1	1	SR	1%	Ac	13%	P	19%	Ph	H	O
Larinus (Larinomesius) canescens	0	1	1	SR	1%	Ac	13%	Ch	5%	Ph	H	M
Larinus (Larinomesius) minutus	5	6	11	D	6%	As	38%	Ch	5%	Ph	H	O
Larinus (Larinomesius) obtusus	0	5	5	SD	3%	As	25%	P	10%	Ph	H	O
Ceutorhynchinae												
Glocianus punctiger	0	1	1	SR	1%	Ac	13%	P	24%	Ph	H	M
Curculioninae												
Anthonomus (s.str.) rubi	1	0	1	SR	1%	Ac	13%	P	38%	Ph	H	O
Tychiinae												
Tychius breviusculus	9	6	15	D	9%	Ac	13%	Ch	5%	Ph	H	O
Tychius cuprifer	1	0	1	SR	1%	Ac	13%	P	43%	Ph	H	O
Tychius junceus	1	1	2	R	1%	Ac	13%	P	24%	Ph	H	P
Tychius kulzeri	1	1	2	R	1%	As	25%	P	10%	Ph	H	O
Tychius lineatulus	1	0	1	SR	1%	Ac	13%	Ch	5%	Ph	H	O
Tychius medicaginis	3	2	5	SD	3%	As	25%	P	24%	Ph	H	O
Tychius meliloti	6	2	8	SD	5%	As	25%	P	14%	Ph	H	O
Tychius quinquepunctatus	1	0	1	SR	1%	Ac	13%	P	38%	Ph	H	O
Tychius squamulatus	2	4	6	SD	3%	As	25%	P	29%	Ph	H	M
Tychius stephensi	1	2	3	R	2%	Ac	13%	P	24%	Ph	H	O
Notarinae												
Pachytychius sparsutus	1	1	2	R	1%	Ac	13%	Ch	5%	Ph	H	O
Smicronyx jungermanniae	1	1	2	R	1%	Ac	13%	P	38%	Ph	H	O
Smicronyx nebulosus	1	0	1	SR	1%	Ac	13%	P	10%	Ph	H	O
Smicronyx reichi	1	0	1	SR	1%	Ac	13%	Ch	5%	Ph	H	O
Rhynchaeninae												
Rhynchaenus (Euthoron) fagi	1	0	1	SR	1%	Ac	13%	P	14%	Ph	T	O
Gymnetrinae												
Gymnetron (s.str.) pascuorum	4	2	6	SD	3%	As	38%	P	38%	Ph	H	M
Gymnetron (Rhinusa) tetrum	12	9	21	ED	12%	K	50%	P	14%	Ph	H	O
Cionus thapsus	5	2	7	SD	4%	As	25%	P	14%	Ph	H	O
Cleopus solani	2	3	5	SD	3%	Ac	13%	P	10%	Ph	H	O

Tab. 6. Assembly of weevils on meadows with shrubs

MEADOWS WITH SHRUBS	nr.males	nr.fem.	nr.ind.	domin. (D)	frequ. (F)	charakter.	l.form.l	l.form.ll	nutrition
Rhynchitinae									
Neocoenorrhinus aequatus	3	4	7	SD 4%	Ac 15%	P 19%	Ph	T	O
Neocoenorrhinus germanicus	1	1	2	R 1%	Ac 10%	P 38%	Ph	T	P
Neocoenorrhinus pauxillus	1	0	1	SR 1%	Ac 5%	P 24%	Ph	T	P
Apioninae									
Alocentron curvirostre	1	0	1	SR 1%	Ac 5%	P 38%	Ph	H	O
Exapion corniculatum	0	2	2	R 1%	Ac 10%	P 10%	Ph	H	O
Protapion apricans	1	4	5	SD 3%	Ac 15%	I 67%	Ph	H	O
Protapion fulvipes	1	1	2	R 1%	Ac 10%	I 71%	Ph	H	O
Protapion nigritarse	0	1	1	SR 1%	Ac 5%	I 71%	Ph	H	O
Protapion ononicola	0	3	3	R 2%	Ac 10%	P 48%	Ph	H	O
Protapion varipes	1	1	2	R 1%	Ac 10%	P 38%	Ph	H	O
Perapion affine	0	1	1	SR 1%	Ac 5%	P 14%	Ph	H	M
Perapion marchicum	1	0	1	SR 1%	Ac 5%	Ch 5%	Ph	H	M
Apion frumentarium	0	1	1	SR 1%	Ac 5%	P 24%	Ph	H	O
Catapion jaffense	0	1	1	SR 1%	Ac 5%	P 33%	Ph	H	O
Stenopterapion tenue	2	0	2	R 1%	Ac 5%	P 29%	Ph	H	O
Holotrichapion pisi	3	1	4	SD 2%	Ac 15%	P 29%	Ph	H	P
Eutrichapion punctigerum	1	0	1	SR 1%	Ac 5%	P 48%	Ph	H	O
Polydrosinae									
Otiorhynchus (Dodecastichus) inflatus	1	0	1	SR 1%	Ac 5%	P 14%	A	T	O
Otiorhynchus (s.str.) bisulcatus	1	2	3	R 2%	Ac 5%	P 19%	A	T	O
Phyllobius (s.str.) pyri	0	1	1	SR 1%	Ac 5%	P 29%	A	T	P
Phyllobius (Ustavenus) betulae	1	3	4	SD 2%	Ac 15%	I 62%	A	T	O
Phyllobius (Ustavenus) seladonius	0	2	2	R 1%	Ac 5%	P 29%	A	T	P
Phyllobius (Nemoicus) oblongus	1	7	8	SD 5%	Ac 15%	I 52%	A	T	P
Polydrusus (s.str.) picus	9	5	14	D 8%	Ac 5%	P 38%	A	T	P
Polydrusus (Neodrosus) thalassinus	0	1	1	SR 1%	Ac 5%	P 29%	A	T	O
Eusomus ovulum	0	9	9	D 5%	Ac 10%	P 38%	A	H	P
Sciaphobus caesius	3	8	11	D 7%	Ac 5%	P 29%	A		
Foucartia liturata	0	1	1	SR 1%	Ac 5%	P 14%	A		P
Sitona hispidulus	2	0	2	R 1%	Ac 5%	P 43%	A	H	O
Sitona humeralis	1	0	1	SR 1%	Ac 5%	P 33%	A	H	P
Sitona puncticollis	0	1	1	SR 1%	Ac 5%	P 29%	A	H	O
Sitona sulcifrons	2	3	5	SD 3%	Ac 15%	P 43%	A	H	O
Sitona waterhousei	0	1	1	SR 1%	Ac 5%	P 14%	A	H	O
Molytinae									
Hypera postica	2	0	2	R 1%	Ac 10%	P 29%	Ph	H	O
Hypera rogenhoferi	1	0	1	SR 1%	Ac 5%	Ch 5%	Ph	H	M
Lepyrus capucinus	0	1	1	SR 1%	Ac 5%	P 14%	Ph		P
Ceutorhynchinae									
Amalus scortillum	1	0	1	SR 1%	Ac 5%	P 10%	Ph	H	O
Ceutorhynchus floralis	2	4	6	SD 4%	Ac 5%	P 48%	Ph	H	P
Ceutorhynchus griseus	1	0	1	SR 1%	Ac 5%	P 10%	Ph		O
Ceutorhynchus hirtulus	0	1	1	SR 1%	Ac 5%	P 14%	Ph	H	O
Ceutorhynchus sulcicollis	0	1	1	SR 1%	Ac 5%	P 14%	Ph	H	P
Mogulones asperifoliarium	1	0	1	SR 1%	Ac 5%	P 14%	Ph	H	P
Mogulones euphorbiae	1	3	4	SD 2%	Ac 10%	P 14%	Ph	H	O
Trichosirocalus troglodytes	0	1	1	SR 1%	Ac 5%	P 24%	Ph	H	M
Curculioninae									
Anthonomus (s.str.) bituberculatus	1	0	1	SR 1%	Ac 5%	Ch 5%	Ph	T	O
Anthonomus (s.str.) pedicularius	1	1	2	R 1%	Ac 5%	P 14%	Ph	T	O
Anthonomus (s.str.) rubi	1	0	1	SR 1%	Ac 5%	P 38%	Ph	H	O
Anthonomus (Anthonomidius) rubripes	1	1	2	R 1%	Ac 10%	P 10%	Ph	H	M
Curculio (s.str.) glandium	2	0	2	R 1%	Ac 5%	P 24%	Ph	T	O
Tychiinae									
Tychius cuprifer	1	2	3	R 2%	Ac 10%	P 43%	Ph	H	O
Tychius medicaginis	2	3	5	SD 3%	Ac 5%	P 24%	Ph	H	O
Tychius picirostris	0	2	2	R 1%	Ac 10%	P 29%	Ph	H	O
Tychius quinquepunctatus	1	0	1	SR 1%	Ac 5%	P 38%	Ph	H	O
Tychius squamulatus	3	4	7	SD 4%	Ac 15%	P 29%	Ph	H	M
Tychius stephensi	1	1	2	R 1%	Ac 5%	P 24%	Ph	H	O
Notarinae									
Smicronyx jungermanniae	0	2	2	R 1%	Ac 5%	P 38%	Ph	H	O
Rhynchaeninae									
Rhamphus oxyacanthae	7	6	13	D 8%	Ac 10%	P 33%	Ph	T	O
Gymnetrinae									
Gymnetron (s.str.) pascuorum	4	0	4	SD 2%	Ac 10%	P 38%	Ph	H	M

Tab. 7. Assembly of weevils on artificial meadows

ARTIFICIAL MEADOWS	nr.males	nr.fem.	nr.ind.	domin. (D)		frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Nanophyinae												
Nanophyes marmoratus	1	0	1	SR	0%	Ac	6%	P	19%	Ph	H	O
Apioninae												
Alocentron curvirostre	1	0	1	SR	0%	Ac	6%	P	38%	Ph	H	O
Trichopterapion holosericeum	0	1	1	SR	0%	Ac	6%	P	48%	Ph	T	O
Exapion difficile	1	0	1	SR	0%	Ac	6%	Ch	5%	Ph	H	O
Protapion apricans	7	8	15	SD	5%	As	44%	I	67%	Ph	H	O
Protapion assimile	0	1	1	SR	0%	Ac	6%	P	10%	Ph	H	O
Protapion fulvipes	4	2	6	R	2%	As	25%	I	71%	Ph	H	O
Protapion nigritarse	0	2	2	SR	1%	Ac	13%	I	71%	Ph	H	O
Protapion trifolii	8	6	14	SD	4%	As	25%	I	57%	Ph	H	O
Protapion varipes	2	1	3	SR	1%	Ac	19%	P	38%	Ph	H	O
Catapion jaffense	1	0	1	SR	0%	Ac	6%	P	33%	Ph	H	O
Catapion seniculus	4	3	7	SD	2%	As	25%	I	57%	Ph	H	O
Stenopterapion meliloti	1	0	1	SR	0%	Ac	6%	Ch	5%	Ph	H	O
Stenopterapion tenue	1	2	3	SR	1%	Ac	13%	P	29%	Ph	H	O
Ischnopterapion loti	8	9	17	D	5%	Ac	19%	P	33%	Ph	H	O
Ischnopterapion virens	0	2	2	SR	1%	Ac	13%	P	24%	Ph	H	O
Holotrichapion pisi	1	1	2	SR	1%	Ac	6%	P	29%	Ph	H	P
Eutrichapion punctigerum	3	2	5	R	2%	As	25%	P	48%	Ph	H	O
Polydrosinae												
Phyllobius (Ustavenus) betulae	0	3	3	SR	1%	Ac	13%	I	62%	A	T	O
Phyllobius (s.str.) pyri	0	1	1	SR	0%	Ac	6%	P	29%	A	T	P
Eusomus ovulum	0	6	6	R	2%	Ac	19%	P	38%	A	H	P
Strophosoma melanogrammum	0	1	1	SR	0%	Ac	6%	Ch	5%	A	T	P
Sitona cinerascens	0	1	1	SR	0%	Ac	6%	Ch	5%	A	H	O
Sitona hispidulus	7	8	15	SD	5%	K	56%	P	43%	A	H	O
Sitona humeralis	4	7	11	SD	3%	K	50%	P	33%	A	H	P
Sitona inops	2	1	3	SR	1%	Ac	19%	P	19%	A	H	M
Sitona puncticollis	12	8	20	D	6%	Ac	6%	P	29%	A	H	O
Sitona sulcifrons	11	17	28	D	9%	K	56%	P	43%	A	H	O
Sitona suturalis	0	1	1	SR	0%	Ac	6%	P	19%	A	H	O
Sitona waterhousei	2	14	16	D	5%	As	31%	P	14%	A	H	O
Tanymecinae												
Tanymecus palliatus	3	1	4	R	1%	Ac	13%	P	19%	A	H	P
Molytinae												
Hypera nigrirostris	2	0	2	SR	1%	Ac	6%	P	14%	Ph	H	O
Hypera pedestris	0	1	1	SR	0%	Ac	6%	P	14%	Ph	H	O
Hypera postica	10	3	13	SD	4%	As	25%	P	29%	Ph	H	O
Hypera trilineata	1	0	1	SR	0%	Ac	6%	P	14%	Ph	H	O
Ceutorhynchinae												
Rhinoncus pericarpius	0	1	1	SR	0%	Ac	6%	P	19%	Ph	H	O
Pelenomus canaliculatus	1	0	1	SR	0%	Ac	6%	Ch	5%	Ph	H	M
Ceutorhynchus erysimi	0	1	1	SR	0%	Ac	6%	P	24%	Ph	H	O
Ceutorhynchus floralis	10	12	22	D	7%	As	44%	P	48%	Ph	H	P
Ceutorhynchus obstrictus	1	0	1	SR	0%	Ac	6%	P	10%	Ph	H	P
Ceutorhynchus turbatus	3	1	4	R	1%	Ac	13%	Ch	5%	Ph	H	O
Glocianus punctiger	1	1	2	SR	1%	Ac	6%	P	24%	Ph	H	M
Stenocarus cardui	0	1	1	SR	0%	Ac	6%	Ch	5%	Ph	H	O
Datonychus melanostictus	1	0	1	SR	0%	Ac	6%	P	19%	Ph	H	O
Trichosirocalus troglodytes	0	1	1	SR	0%	Ac	6%	P	24%	Ph	H	M
Baridinae												
Baris lepidii	1	1	2	SR	1%	Ac	6%	P	14%	Ph	H	O
Tychiinae												
Tychius junceus	1	0	1	SR	0%	Ac	6%	P	24%	Ph	H	P
Tychius medicaginis	0	1	1	SR	0%	Ac	6%	P	24%	Ph	H	O
Tychius quinquepunctatus	4	2	6	R	2%	Ac	13%	P	38%	Ph	H	O
Tychius squamulatus	1	2	3	SR	1%	Ac	13%	P	29%	Ph	H	M
Tychius stephensi	1	0	1	SR	0%	Ac	6%	P	24%	Ph	H	O
Sibinia pellucens	1	1	2	SR	1%	Ac	6%	P	14%	Ph	H	O
Notarinae												
Smicronyx brevicornis	4	5	9	SD	3%	Ac	6%	P	24%	Ph	H	O
Smicronyx pygmaeus	2	2	4	R	1%	Ac	13%	P	10%	Ph	H	O
Smicronyx jungermanniae	13	8	21	D	7%	Ac	13%	P	38%	Ph	H	O
Smicronyx nebulosus	2	0	2	SR	1%	Ac	13%	P	10%	Ph	H	O
Smicronyx smreczynskii	0	1	1	SR	0%	Ac	6%	Ch	5%	Ph	H	M
Gymnetrinae												
Mecinus pyraster	1	0	1	SR	0%	Ac	6%	Ch	5%	Ph	H	O
Gymnetron (s.str.) pascuorum	0	3	3	SR	1%	Ac	13%	P	38%	Ph	H	M
Gymnetron (s.str.) stimulosum	1	0	1	SR	0%	Ac	6%	P	14%	Ph	H	O
Gymnetron (Rhinusa) antirrhini	0	1	1	SR	0%	Ac	6%	P	10%	Ph	H	O
Gymnetron (Rhinusa) netum	5	4	9	SD	3%	Ac	6%	P	14%	Ph	H	O
Stereonychus fraxini	0	2	2	SR	1%	Ac	13%	P	48%	Ph	T	O

Tab. 8. Assembly of weevils on uncultivated land

UNCULTIVATED LAND	nr.males	nr.fem.	nr.ind.	domin. (D)		frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Rhynchitinae												
Neocoenorrhinus germanicus	1	0	1	SR	1%	Ac	10%	P	38%	Ph	T	P
Apioninae												
Ceratapion onopordi	1	1	2	R	1%	Ac	10%	P	29%	Ph	H	O
Squamapion vicinum	0	2	2	R	1%	Ac	20%	P	14%	Ph	H	O
Trichopterapion holosericeum	0	1	1	SR	1%	Ac	10%	P	48%	Ph	T	O
Protapion apricans	3	3	6	SD	4%	As	30%	I	67%	Ph	H	O
Protapion dentipes	0	1	1	SR	1%	Ac	10%	P	24%	Ph		
Protapion filirostre	1	0	1	SR	1%	Ac	10%	P	29%	Ph	H	O
Protapion fulvipes	1	0	1	SR	1%	Ac	10%	I	71%	Ph	H	O
Protapion nigritarse	2	4	6	SD	4%	As	30%	I	71%	Ph	H	O
Protapion ononicola	0	1	1	SR	1%	Ac	10%	P	48%	Ph	H	O
Protapion trifolii	2	4	6	SD	4%	As	30%	I	57%	Ph	H	O
Protapion varipes	0	2	2	R	1%	Ac	20%	P	38%	Ph	H	O
Catapion jaffense	0	2	2	R	1%	Ac	20%	P	33%	Ph	H	O
Catapion pubescens	0	1	1	SR	1%	Ac	10%	P	33%	Ph	H	O
Catapion seniculus	0	2	2	R	1%	Ac	10%	I	57%	Ph	H	O
Ischnopterapion loti	0	1	1	SR	1%	Ac	10%	P	33%	Ph	H	O
Ischnopterapion virens	2	0	2	R	1%	Ac	20%	P	24%	Ph	H	O
Holotrichapion aestimatum	0	1	1	SR	1%	Ac	10%	P	19%	Ph	H	P
Holotrichapion oblongum	0	1	1	SR	1%	Ac	10%	P	10%	Ph	H	M
Oxystoma cerdo	0	1	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Oxystoma craccae	1	4	5	SD	3%	As	30%	I	52%	Ph	H	O
Oxystoma dimidiatum	0	1	1	SR	1%	Ac	10%	P	29%	Ph	H	O
Eutrichapion punctigerum	5	2	7	SD	4%	As	40%	P	48%	Ph	H	O
Polydrosinae												
Phyllobius (Ustavenus) betulae	1	2	3	R	2%	As	30%	I	62%	A	T	O
Phyllobius (Nemoicus) oblongus	0	1	1	SR	1%	Ac	10%	I	52%	A	T	P
Eusomus ovulum	0	9	9	D	5%	Ac	20%	P	38%	A	H	P
Sitona hispidulus	3	3	6	SD	4%	As	40%	P	43%	A	H	O
Sitona humeralis	2	1	3	R	2%	Ac	10%	P	33%	A	H	P
Sitona inops	1	0	1	SR	1%	Ac	10%	P	19%	A	H	M
Sitona lineatus	1	2	3	R	2%	As	30%	P	19%	A	H	P
Sitona macularius	1	0	1	SR	1%	Ac	10%	P	10%	A	H	P
Sitona puncticollis	1	0	1	SR	1%	Ac	10%	P	29%	A	H	O
Sitona sulcifrons	7	4	11	D	7%	K	50%	P	43%	A	H	O
Cleoninae												
Lachnaeus crinitus	0	1	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Molytinae												
Hypera striata	1	0	1	SR	1%	Ac	10%	Ch	5%	Ph	H	O
Ceutorhynchinae												
Neophytobius quadrinodosus	0	1	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Ceutorhynchus assimilis	1	6	7	SD	4%	Ac	10%	P	19%	Ph	H	O
Ceutorhynchus atomus	0	1	1	SR	1%	Ac	10%	P	14%	Ph	H	O
Ceutorhynchus barbareae	2	4	6	SD	4%	Ac	20%	P	14%	Ph	H	O
Ceutorhynchus contractus	0	5	5	SD	3%	As	30%	P	24%	Ph	H	P
Ceutorhynchus floralis	4	9	13	D	8%	K	50%	P	48%	Ph	H	P
Ceutorhynchus posthumus	0	1	1	SR	1%	Ac	10%	Ch	5%	Ph	H	O
Ceutorhynchus roberti	2	0	2	R	1%	Ac	20%	P	19%	Ph	H	M
Ceutorhynchus sulcicollis	0	2	2	R	1%	Ac	10%	P	14%	Ph	H	P
Oprohinus consputus	1	0	1	SR	1%	Ac	10%	Ch	5%	Ph	H	O
Datonychus melanostictus	1	0	1	SR	1%	Ac	10%	P	19%	Ph	H	O
Mogulones asperifoliarium	1	0	1	SR	1%	Ac	10%	P	14%	Ph	H	P
Mogulones euphorbiae	2	1	3	R	2%	Ac	20%	P	14%	Ph	H	O
Mogulones pallidicornis	0	1	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Trichosirocalus troglodytes	0	1	1	SR	1%	Ac	10%	P	24%	Ph	H	M
Baridinae												
Baris analis	2	1	3	R	2%	As	30%	Ch	5%	Ph	H	M
Baris coerulescens	1	0	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Curculioninae												
Anthonomus (s.str.) pedicularius	2	2	4	SD	2%	Ac	10%	P	14%	Ph	T	O
Tychiinae												
Tychius cuprifer	2	1	3	R	2%	Ac	10%	P	43%	Ph	H	O
Tychius picirostris	0	2	2	R	1%	Ac	10%	P	29%	Ph	H	O
Tychius squamulatus	1	0	1	SR	1%	Ac	10%	P	29%	Ph	H	M
Notarinae												
Smicronyx brevicornis	0	1	1	SR	1%	Ac	10%	P	24%	Ph	H	O
Gymnetrinae												
Mecinus janthinus	1	0	1	SR	1%	Ac	10%	P	10%	Ph	H	O
Miarus ajugae	3	0	3	R	2%	Ac	20%	P	14%	Ph	H	O
Miarus campanulae	0	1	1	SR	1%	Ac	10%	Ch	5%	Ph	H	O
Gymnetron (s.str.) labile	2	0	2	R	1%	Ac	20%	P	14%	Ph	H	M
Gymnetron (s.str.) pascuorum	2	0	2	R	1%	Ac	10%	P	38%	Ph	H	M
Gymnetron (s.str.) stimulosum	0	1	1	SR	1%	Ac	10%	P	14%	Ph	H	O
Gymnetron (Rhinusa) collinum	0	1	1	SR	1%	Ac	10%	P	14%	Ph	H	O
Gymnetron (Rhinusa) linariae	1	0	1	SR	1%	Ac	10%	P	19%	Ph	H	O

Tab. 9. Assembly of weevils of ruderal vegetation

RUDERAL VEGETATION	nr.males	nr.fem.	nr.ind.	domin. (D)		frequ. (F)		charakter.		l.form.I	l.form.II	nutrition
Nanophyinae												
Nanophyes marmoratus	31	19	50	ED	11%	Ac	10%	P	19%	Ph	H	O
Dieckmanniellus helveticus	20	13	33	D	7%	Ac	8%	P	14%	Ph	H	O
Apioninae												
Omphalapion sorbi	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph	H	O
Ceratapion carduorum	0	3	3	SR	1%	Ac	3%	P	14%	Ph	H	O
Ceratapion onopordi	3	7	10	SD	2%	Ac	15%	P	29%	Ph	H	O
Diplapion stolidum	0	1	1	SR	0%	Ac	3%	P	10%	Ph	H	O
Aspidapion aeneum	0	1	1	SR	0%	Ac	3%	P	10%	Ph	H	O
Aspidapion radiolus	2	0	2	SR	0%	Ac	5%	P	33%	Ph	H	O
Alocentron curvirostre	2	1	3	SR	1%	Ac	3%	P	38%	Ph	H	O
Taeniapion urticarium	0	3	3	SR	1%	Ac	8%	P	19%	Ph	H	O
Metapion breiti	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph		
Rhopalapion longirostre	3	1	4	SR	1%	Ac	3%	P	14%	Ph	H	M
Trichopterapion holosericeum	1	0	1	SR	0%	Ac	3%	P	48%	Ph	T	O
Protapion apricans	3	3	6	R	1%	Ac	10%	I	67%	Ph	H	O
Protapion dentipes	1	1	2	SR	0%	Ac	3%	P	24%	Ph		
Protapion filirostre	0	1	1	SR	0%	Ac	3%	P	29%	Ph	H	O
Protapion fulvipes	2	1	3	SR	1%	Ac	5%	I	71%	Ph	H	O
Protapion nigritarse	0	2	2	SR	0%	Ac	3%	I	71%	Ph	H	O
Protapion ononicola	0	3	3	SR	1%	Ac	3%	P	48%	Ph	H	O
Protapion trifolii	1	1	2	SR	0%	Ac	5%	I	57%	Ph	H	O
Perapion affine	2	1	3	SR	1%	Ac	3%	P	14%	Ph	H	M
Perapion violaceum	0	1	1	SR	0%	Ac	3%	P	19%	Ph	H	O
Apion frumentarium	0	2	2	SR	0%	Ac	5%	P	24%	Ph	H	O
Catapion jaffense	0	1	1	SR	0%	Ac	3%	P	33%	Ph	H	O
Catapion pubescens	1	0	1	SR	0%	Ac	3%	P	33%	Ph	H	O
Catapion seniculus	1	0	1	SR	0%	Ac	3%	I	57%	Ph	H	O
Stenopterapion tenue	2	1	3	SR	1%	Ac	8%	P	29%	Ph	H	O
Holotrichapion aestimatum	1	0	1	SR	0%	Ac	3%	P	19%	Ph	H	P
Hemitrichapion pavidum	0	1	1	SR	0%	Ac	3%	P	19%	Ph	H	O
Cyanapion columbinum	1	1	2	SR	0%	Ac	5%	P	38%	Ph	H	O
Eutrichapion ervi	0	1	1	SR	0%	Ac	3%	P	24%	Ph	H	O
Eutrichapion punctigerum	1	0	1	SR	0%	Ac	3%	P	48%	Ph	H	O
Eutrichapion viciae	1	0	1	SR	0%	Ac	3%	P	38%	Ph	H	O
Polydrosinae												
Otiorhynchus (s.str.) bisulcatus	1	0	1	SR	0%	Ac	3%	P	19%	A	T	O
Otiorhynchus (s.str.) rugosostriatus	1	1	2	SR	0%	Ac	5%	P	24%	A		P
Stomodes gyrosicollis	0	1	1	SR	0%	Ac	3%	Ch	5%	A	H	O
Phyllobius (Ustavenus) betulae	1	5	6	R	1%	Ac	3%	I	62%	A	T	O
Phyllobius (Nemoicus) oblongus	1	2	3	SR	1%	Ac	3%	I	52%	A	T	P
Eusomus ovulum	0	3	3	SR	1%	Ac	5%	P	38%	A	H	P
Sciaphobus caesius	4	6	10	SD	2%	Ac	5%	P	29%	A		
Foucartia liturata	0	1	1	SR	0%	Ac	3%	P	14%	A		P
Sitona hispidulus	2	1	3	SR	1%	Ac	5%	P	43%	A	H	O
Sitona lineatus	1	1	2	SR	0%	Ac	5%	P	19%	A	H	P
Sitona puncticollis	0	1	1	SR	0%	Ac	3%	P	29%	A	H	O
Sitona sulcifrons	2	1	3	SR	1%	Ac	8%	P	43%	A	H	O
Tanymecinae												
Tanymecus palliatus	0	2	2	SR	0%	Ac	5%	P	19%	A	H	P
Cleoninae												
Lixus (Eulixus) iridis	0	1	1	SR	0%	Ac	3%	P	10%	Ph	H	P
Lixus (Eulixus) brevipes	0	1	1	SR	0%	Ac	3%	Ch	5%	Ph	H	O
Lixus (Dilixellus) algirus	0	1	1	SR	0%	Ac	3%	P	10%	Ph	H	P
Lixus (Lixochelus) filiformis	3	0	3	SR	1%	Ac	8%	P	19%	Ph	H	O
Larinus (Larinodontes) jaceae	1	0	1	SR	0%	Ac	3%	P	10%	Ph	H	O
Larinus (Larinodontes) turbinatus	2	2	4	SR	1%	Ac	5%	P	19%	Ph	H	O
Larinus (Larinomesius) obtusus	4	0	4	SR	1%	Ac	3%	P	10%	Ph	H	O
Lachnaeus crinitus	5	1	6	R	1%	Ac	3%	P	10%	Ph	H	O
Rhinocyllus conicus	2	0	2	SR	0%	Ac	3%	Ch	5%	Ph	H	O
Molytinae												
Hypera nigrirostris	2	0	2	SR	0%	Ac	5%	P	14%	Ph	H	O
Hypera postica	1	0	1	SR	0%	Ac	3%	P	29%	Ph	H	O
Hypera zoilus	0	1	1	SR	0%	Ac	3%	P	10%	Ph	H	O
Alophus Chufmanni	0	1	1	SR	0%	Ac	3%	P	14%	Ph		
Ceutorhynchinae												
Rhinoncus pericarpius	1	1	2	SR	0%	Ac	5%	P	19%	Ph	H	O
Rhinoncus perpendicularis	1	0	1	SR	0%	Ac	3%	P	14%	Ph	H	O
Ceutorhynchus assimilis	2	4	6	R	1%	Ac	8%	P	19%	Ph	H	O
Ceutorhynchus barbareae	1	2	3	SR	1%	Ac	3%	P	14%	Ph	H	O
Ceutorhynchus constrictus	0	2	2	SR	0%	Ac	3%	P	10%	Ph	H	M
Ceutorhynchus contractus	1	7	8	R	2%	Ac	13%	P	24%	Ph	H	P
Ceutorhynchus erysimi	4	7	11	SD	2%	Ac	13%	P	24%	Ph	H	O
Ceutorhynchus floralis	8	7	15	SD	3%	Ac	15%	P	48%	Ph	H	P
Ceutorhynchus pallidactylus	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph	H	O
Ceutorhynchus roberti	1	0	1	SR	0%	Ac	3%	P	19%	Ph	H	M
Ceutorhynchus sulcicollis	2	4	6	R	1%	Ac	13%	P	14%	Ph	H	P
Oprohinus suturalis	1	0	1	SR	0%	Ac	3%	P	10%	Ph	H	O
Glocianus punctiger	2	0	2	SR	0%	Ac	5%	P	24%	Ph	H	M
Nedyus quadrimaculatus	2	4	6	R	1%	Ac	8%	P	14%	Ph	H	M
Mogulones korbi	0	3	3	SR	1%	Ac	3%	Ch	5%	Ph	H	O
Thamiocolus pubicollis	0	1	1	SR	0%	Ac	3%	Ch	5%	Ph	H	O

Tab. 9. Assembly of weevils of ruderal vegetation (continuation 1)

Baridinae												
Baris atramentaria	1	1	2	SR	0%	Ac	5%	Ch	5%	Ph	H	O
Baris coerulescens	2	0	2	SR	0%	Ac	5%	P	10%	Ph	H	O
Baris lepidii	10	4	14	SD	3%	Ac	15%	P	14%	Ph	H	O
Baris timida	0	1	1	SR	0%	Ac	3%	Ch	5%	Ph	H	O
Limnobaris dolorosa	1	0	1	SR	0%	Ac	3%	P	14%	Ph	H	O
Curculioninae												
Anthonomus (s.str.) rubi	3	3	6	R	1%	Ac	10%	P	38%	Ph	H	O
Tychiinae												
Tychius junceus	1	2	3	SR	1%	Ac	5%	P	24%	Ph	H	P
Tychius medicaginis	0	1	1	SR	0%	Ac	3%	P	24%	Ph	H	O
Tychius picirostris	0	1	1	SR	0%	Ac	3%	P	29%	Ph	H	O
Tychius squamulatus	0	1	1	SR	0%	Ac	3%	P	29%	Ph	H	M
Tychius stephensi	2	1	3	SR	1%	Ac	5%	P	24%	Ph	H	O
Sibinia abdominalis	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph	H	M
Sibinia pellucens	1	1	2	SR	0%	Ac	3%	P	14%	Ph	H	O
Sibinia viscariae	6	1	7	R	2%	Ac	3%	P	10%	Ph	H	O
Rhynchaeninae												
Rhamphus oxyacanthae	0	1	1	SR	0%	Ac	3%	P	33%	Ph	T	O
Pseudorchestes horioni	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph		
Gymnetrinae												
Mecinus circulatus	1	0	1	SR	0%	Ac	3%	Ch	5%	Ph	H	M
Miarus ajugae	1	0	1	SR	0%	Ac	3%	P	14%	Ph	H	O
Gymnetron (s.str.) labile	1	1	2	SR	0%	Ac	3%	P	14%	Ph	H	M
Gymnetron (s.str.) pascuorum	0	3	3	SR	1%	Ac	8%	P	38%	Ph	H	M
Gymnetron (Rhinusa) antirrhini	8	5	13	SD	3%	Ac	10%	P	10%	Ph	H	O
Gymnetron (Rhinusa) asellus	0	3	3	SR	1%	Ac	8%	Ch	5%	Ph	H	O
Gymnetron (Rhinusa) collinum	0	1	1	SR	0%	Ac	3%	P	14%	Ph	H	O
Gymnetron (Rhinusa) netum	5	3	8	R	2%	Ac	8%	P	14%	Ph	H	O
Gymnetron (Rhinusa) tetrum	27	46	73	ED	16%	Ac	13%	P	14%	Ph	H	O
Cionus alauda	2	0	2	SR	0%	Ac	3%	P	10%	Ph	H	O
Cionus thapsus	0	2	2	SR	0%	Ac	5%	P	14%	Ph	H	O
Cionus tuberculosus	0	5	5	R	1%	Ac	3%	P	14%	Ph	H	O
Stereonychus fraxini	1	0	1	SR	0%	Ac	3%	P	48%	Ph	T	O

The dominants are three adelognathic species from subfamily Brachyderinae and *Rhamphus oxyacanthae*. All species are accidental.

Only three (5.2%) species are characteristic: *Perapion marchicum* linked with *Rumex acetosella*; *Anthonomus bituberculatus* linked with *Prunus* and *Crataegus*; and *Hypera rogenhoferi* from *Daucus carota*.

The presence of adelognaths (27.6%) was like on other meadows.

As we expected, the bigest presence of thamnobiont forms (25.9% of species) is registered on this meadows.

The bigest presence of polyphagous weevils is registered here too (24.1% of species, 30.8% of specimens). But in the same time there live rather big number of monophagous species (12.1%). This fact puts this assembly close to assembly on uncultivated land.

In size of the weevil assembly, artificial meadows occupy third place among meadows. They are almost three times poorer than valley meadows and twice as poor as damp meadows (Tab. 1). The artificial, simplified structure of the plant association (made up mainly of fodder plants) has determined quality of the weevil assembly.

Six species (9.6%) are dominant, while three are constant. *Sitona sulcifrons*, which prefers clover, belongs to both categories. Among dominant species, *Smicronyx jungermanniae* is especially interesting because its way of life is linked with the parasitic plant genus *Cuscata*.

Nine species (14.3%) are characteristic. Only one specimen was found of each of them, with the exception of *Ceutorhynchus turbatus*, linked with the weed plants *Lepidium* and *Sinapis*.

Seven species (11.1%) are monophagous, while nine (14.3%) are polyphagous.

This assembly is most similar to the assembly of meadows with shrubs and that of valley meadows (Tab. 10).

The weevil assembly of uncultivated land is somewhat richer than the assembly on artificial meadows with respect to the number of species, but nearly twice as poor in regard to the number of specimens (Table 1). This is an interesting assembly of weevils that are linked for the most part with weed plants. Hence its greatest similarity with the weevil assembly of ruderal vegetation (0.4142; 0.2612) (Tab. 10).

Three species are dominant: *Ceutorhynchus floralis*, which is eudominant on valley meadows; *Sitona sulcifrons*, which is here, as in the the assembly of artificial meadows, also constant; and *Eusomus ovulum*, which is a constant element of the weevil assembly of upland meadows.

Five species (7.7%) are characteristic. Each of them is represented by only one specimen, except for *Baris analis* (three specimens), whose way of life is linked with *Inula dysenterica*.

Ten species (15.4%) are adelognathic.

Thamnobionts constitute 7.7% (five species).

Ten species (15.4%) are polyphagous. The presence of monophages is more pronounced (12.3% or eight species) than in other biotopes / habitats.

The extent of material collected in ruderal habitats (448 specimens belonging to 104 species) dictated segregation of this weevil colony into a separate assembly.

Eudominant are *Gymnetron tetrum*, which is linked with *Verbascum*, and *Nanophyes marmoratus*, which is linked with *Lythrum*, as is the only dominant species, *Nanomimus helveticus*.

All species with respect to their presence are accidental.

Fourteen species (13.4%) are characteristic, while seven species are indifferent. Among the characteristic forms are two monophagous species: *Sibinia abdominalis*, which is linked with *Silene vulgaris*, and *Mecinus circulatus*, which is linked with *Plantago lanceolata*.

Thirteen species (12.5%) are adelognaths.

Thamnobionts are few (six species or 5.8%).

There are 11 monophagous species and 13 (12.5%) polyphagous ones.

This assembly manifested greatest similarity to that of valley meadows of all assemblies recorded (0.5236; 0.3547). It is also fairly similar to the assemblies of damp meadows and uncultivated land (Tab. 10). The conclusion might therefore be drawn that it is unnecessary to isolate this assembly in a separate category. However, the solid percentage of characteristic species enables it to be treated as separate.

Tab. 10. Similarity of the weevil assemblies by Sorensen and Jaccard

Biotope	2	3	4	5	6	7	8
1	0.5035 0.3364	0.1087 0.0575	0.2960 0.1737	0.3755 0.2312	0.4017 0.2513	0.4322 0.2757	0.5236 0.3547
2		0.1406 0.0756	0.2156 0.1208	0.3006 0.1769	0.3708 0.2276	0.4111 0.2587	0.4475 0.2882
3			0.1231 0.0656	0.0845 0.0441	0.1316 0.0704	0.1282 0.0685	0.0855 0.0446
4				0.3273 0.1957	0.3652 0.2234	0.3077 0.1818	0.3590 0.2188
5					0.4298 0.2737	0.4065 0.2551	0.3580 0.2180
6						0.3906 0.2427	0.3952 0.2463
7							0.4142 0.2612

Legend:

1. valley meadows
2. damp meadows
3. swampy meadows
4. upland meadows
5. meadows with shrubs
6. artificial meadows
7. uncultivated land
8. ruderal vegetation

The last positions occupied by assemblies from swampy and upland meadows according the index of biodiversity warns of their unstable and threatened status.

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Summary

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