

BIODIVERSITY OF CHRYSOMELID BEETLES (*COLEOPTERA*,  
*CHRYSOMELIDAE*) OF WET BIOTOPES OF THE "LASZ JANOWSKIE"  
LANDSCAPE PARK

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**Abstract:** In the years 1996-2000 chrysomelid beetles were collected at 28 stations marked out in plant communities of high and transitional bogs, moist meadows, low bogs and rushes of the "Lasy Janowskie" Landscape Park area. In general 2600 individuals representing 98 species were found in those biotopes. Among them 48% were the indicator species of wet habitats (hydro- and hygrophiles). They were dominants in the investigated biotopes and they reached high values of the fidelity index. Chrysomelid communities of studied plant communities also obtained the high values of the species richness index.

**Key words:** leaf beetles, *Chrysomelidae*, faunistics, Lasy Janowskie, SE Poland

#### INTRODUCTION

Chrysomelids are phytophagous beetles of which only a few species from the subfamily *Donaciinae* can be considered as hydrophilous [5]. This family, however, contained a considerable number of hygrophilous species which are closely associated with plants occurring in communities with high humidity. In most cases they are considered as bioindicators of wet biotopes because decreasing of humidity and simultaneous plant cover transformation can eliminate them from these habitats [4, 6].

The "Lasy Janowskie" Landscape Park was established in 1984 and it is characteristic of a large differentiation of forest and bog plant associations [3]. In general wet habitats cover ca 10% of the area. The chrysomelids fauna of the park has not been hitherto investigated and the data about hydro- and hygrophilous species from The Sandomierska Basin are incomplete and scattered in the literature. The

Catalogue of the Polish Fauna [1, 2] recorded only 150 species from the region and that placed it in 14th position (of 20 regions in Poland) in the district, in relation to the number of described species [10].

In the park area leaf beetles were collected at 28 stations in three types of open plant communities: high and transitional bogs, moist meadows and low bogs and rushes. Most of the stations (21) were selected in moist meadows and low bogs.

In high and transitional bog communities the chrysomelid fauna was investigated in 4 plant associations: *Ledo-Sphagnetum magellanicum*, *Sphagnetum magellanicum*, *Carici-Agrostietum caninae* and *Caricetum rostratae*. In moist meadows and low bogs in 8 associations: *Filipendulo-Geranietaetum*, *Junco-Molinietum*, *Scirpetum sylvaticum*, *Epilobio-Juncetum effusum*, *Deschampsietum caespitosum*, *Caricetum elatae*, *C. gracilis* and *C. vesicariae*. Most of the plant associations (11) were researched in rush communities. These were: *Scirpetum lacustris*, *Sparganietum erectum*, *Typhetum angustifoliae*, *Sagittario-Sparganietum emersi*, *Eleocharietum palustris*, *Equisetum limosum*, *Phragmitetum communis*, *Typhetum latifoliae*, *Acoretum calami*, *Iridetum pseudacori* and *Nupharo-Nymphaeetum albae*.

#### MATERIAL AND METHODS

In general 2600 individuals representing 98 species were found in the years 1996-2000 in the studied wet biotopes of the park.

The main method of collecting insects was catching them in an entomological sweep-net. 100 sweeps (4×25) were required to collect one sample. Furthermore a small number of beetles were collected using qualitative methods.

Quantitative investigations were carried out regularly in the years 1996-2000. Once a month (from April till October) in the years 1996-97 and twice a month in the years 1998-2000 at 13 permanent (no. 1-4, 6, 8-10, 14, 17, 26-28) and 15 periodical stations (no. 5, 7, 11-13, 15-16, 18-25) – Fig. 1, where the samples were collected rarely and less regularly. The systematic catches at 13 permanent stations included minimum 3 and usually 4 vegetation seasons.

In the protected areas leaf beetles were collected in three present (“Imielty Ług”, “Szklarnia” “Łasy Janowskie”) and two planned reserves (“Łęka” and “Bagno Rakowskie”).

In the quantitative analysis the number of species (L) and the dominance (D) were included (Tab. 1). Simpson's species richness index (d) of investigated chrysomelid communities [7] and the fidelity index of the species assemblages (W) were also calculated.

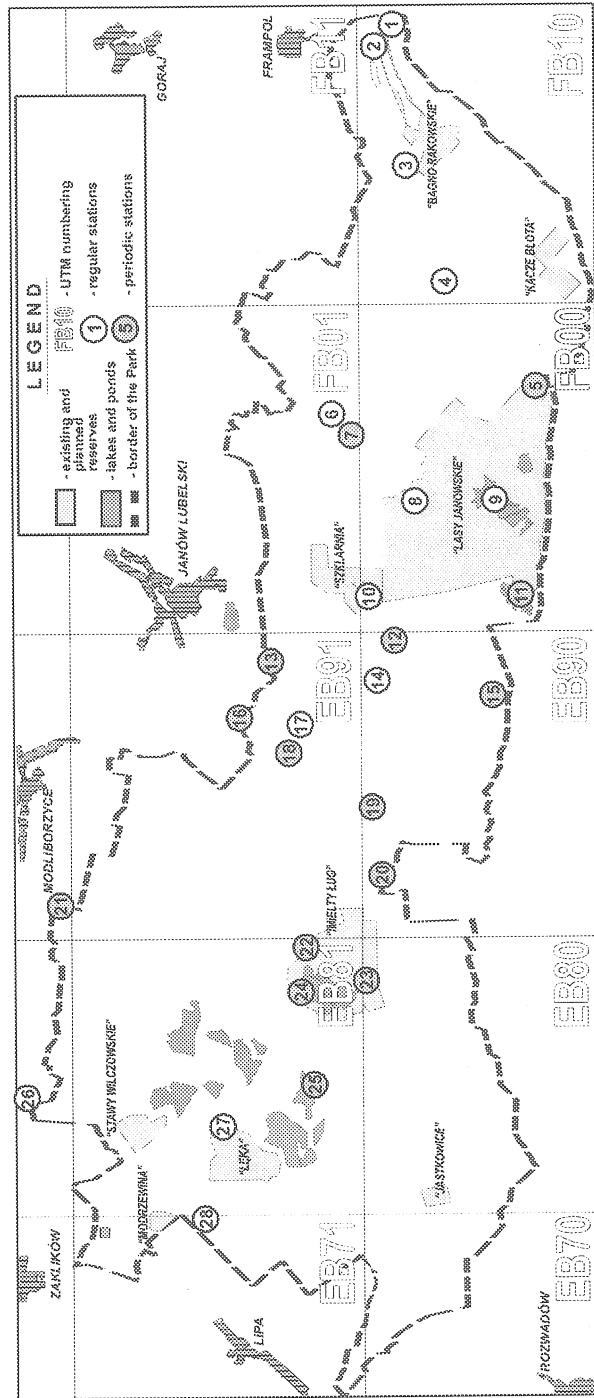


Fig. 1. Study area – The „Lasy Janowskie” Landscape Park – distribution of stations: 1. Kolonia Sokołówka, 2. Kolonia Sokołówka, „Bagno Rakowskie” planned reserve, 3. Boreczki, „Bagno Rakowskie” planned reserve, 4. Władysławów-Dychy, 5. Szewce, 6. Flisy, 7. Porytowe Wzgórze-Flisy road, 8. Porytowe Wzgórze, „Lasy Janowskie” reserve, 9. „Lasy Janowskie” reserve – ponds, 10. Szklarnia, „Szklarnia” reserve, 11. Momoty Górze, 12. Szklarnia, 13. Kruczek, 14. Góra Kowalikowa/Góry Tułowe, 15. Momoty Dolne, 16. Kobyła Góra/Ionaki, 17. Gierflachy, 18. Pikule, 19. Łązek Ordynacki-Góry Świerszczowe road, 20. Łązek Ordynacki, 21. Modliborzycze, 22. „Pogorzelec” pond, 23. Dębowiec, „Imielty Ług” reserve, 24. Gwizdów, „Imielty Ług” reserve, 25. Kochany, „Kmicic” pond, 26. Łysaków, 27. Bania, „Łęka” planned reserve, 28. Gielnia

**Table 1.** The number of individuals (L) and the dominance structure (D%) of chrysomelids of wet biotopes of the „Łasy Janowskie” Landscape Park; I – high and transitional bogs, II – moist meadows and low bogs, III – rush communities. Hydro- and higrofilous are given in bold, \* species also collected in the qualitative samples

No.	Species	L I	D%	L II	D%	L III	D%
1	<i>Donacia aquatica</i> (LINNAEUS, 1758)	2	0.44	1	0.07	-	-
2	<i>D. cinerea</i> HERBST, 1784	6*	-	4	0.27	1	0.23
3	<i>D. dentata</i> HOPPE, 1795	5*	-	-	-	4*	0.69
4	<i>D. impressa</i> PAYKULL, 1799	-	-	-	-	1	0.23
5	<i>D. marginata</i> HOPPE, 1795	-	-	1	0.07	-	-
6	<i>D. semicuprea</i> PANZER, 1796	1*	-	11	0.75	7*	0.46
7	<i>D. thalassina</i> GERMAR, 1811	-	-	-	-	2*	-
8	<i>D. versicolorea</i> (BRAHM, 1790)	1	0.22	-	-	-	-
9	<i>D. vulgaris</i> ZSCHACH, 1788	1*	-	-	-	2*	-
10	<i>Plateumaris consimilis</i> (SCHRANK, 1781)	7	1.53	42	2.85	-	-
11	<i>P. rustica</i> (KUNZE, 1818)	7	1.53	-	-	-	-
12	<i>P. sericea</i> (LINNAEUS, 1761)	113*	20.74	18	1.22	-	-
13	<i>Lema cyanella</i> (LINNAEUS, 1758)	-	-	10	0.68	-	-
14	<i>Oulema gallaeciana</i> HAYDEN, 1870	6*	0.87	41	2.79	5*	0.46
15	<i>O. melanopus</i> (LINNAEUS, 1758)	11*	1.31	63	4.28	3*	0.23
16	<i>Cryptocephalus biguttatus</i> (SCOPOLI, 1763)	3*	0.22	-	-	1	0.23
17	<i>C. decemmaculatus</i> (LINNAEUS, 1758)	3	0.66	-	-	-	-
18	<i>C. janthinus</i> GERMAR, 1824	17	3.71	5	0.34	14*	2.53
19	<i>C. labiatus</i> (LINNAEUS, 1761)	1	0.22	1	0.07	-	-
20	<i>C. moraei</i> (LINNAEUS, 1758)	-	-	6	0.41	-	-
21	<i>C. parvulus</i> MÜLLER, 1776	-	-	-	-	1	0.23
22	<i>Leptinotarsa decemlineata</i> (SAY, 1824)	-	-	1	0.07	1	0.23
23	<i>Chrysolina herbacea</i> (DUFTSCHMIDT, 1825)	-	-	1	0.07	-	-
24	<i>C. fastuosa</i> (SCOPOLI, 1763)	-	-	50	2.65	-	-
25	<i>C. polita</i> (LINNAEUS, 1758)	-	-	33*	2.17	12*	2.53
26	<i>C. staphylaea</i> (LINNAEUS, 1758)	-	-	13	0.88	-	-
27	<i>C. varians</i> (SCHALLER, 1783)	-	-	53	3.60	-	-
28	<i>Gastrophysa polygoni</i> (LINNAEUS, 1758)	-	-	6	0.41	3*	0.46
29	<i>G. viridula</i> (DE GEER, 1775)	-	-	17	1.15	4	0.92
30	<i>Phaedon armoraciae</i> (LINNAEUS, 1758)	-	-	1	0.07	-	-
31	<i>P. cochleariae</i> (FABRICIUS, 1792)	-	-	1	0.07	-	-
32	<i>Hydrothassa glabra</i> (HERBST, 1783)	-	-	2	0.14	-	-
33	<i>H. hannoveriana</i> (FABRICIUS, 1775)	-	-	5	0.34	-	-
34	<i>H. marginella</i> (LINNAEUS, 1758)	-	-	21*	1.36	-	-
35	<i>Prasocuris phellandrii</i> (LINNAEUS, 1758)	-	-	4	0.27	1*	-
36	<i>Plagioderia versicolora</i> (LAICHARTING, 1781)	-	-	4*	0.20	-	-
37	<i>Chrysomela cuprea</i> FABRICIUS, 1775	1*	-	-	-	-	-
38	<i>Linnaeidea aenea</i> (LINNAEUS, 1758)	1	0.22	10	0.68	-	-
39	<i>Phratora vitellinae</i> (LINNAEUS, 1758)	-	-	4	0.27	3	0.69
40	<i>Galerucella grisescens</i> (JOANIS, 1866)	51*	10.48	119*	8.02	36*	8.06
41	<i>G. nymphaeae</i> (LINNAEUS, 1758)	-	-	-	-	3	0.69
42	<i>G. aquatica</i> (GEOFFROY, 1785)	-	-	-	-	4	0.92
43	<i>G. calvariensis</i> (LINNAEUS, 1767)	3	0.66	3	0.20	59	13.59
44	<i>G. lineola</i> (FABRICIUS, 1781)	2	0.44	29*	1.29	10*	0.23
45	<i>G. pusilla</i> (DUFTSCHMIDT, 1825)	-	-	3	0.20	2	0.46
46	<i>G. tenella</i> (LINNAEUS, 1761)	54	11.79	163*	10.46	133	30.65

Table 1. Continuation

No.	Species	L I	D%	L II	D%	L III	D%
47	<i>Lochmaea capreae</i> (LINNAEUS, 1758)	24*	3.49	5	0.34	1	0.23
48	<i>L. suturalis</i> (THOMSON, 1866)	64*	3.93	-	-	-	-
49	<i>Galeruca tanacetii</i> (LINNAEUS, 1758)	-	-	2	0.14	-	-
50	<i>Agelastica alni</i> (LINNAEUS, 1767)	-	-	4	0.27	-	-
51	<i>Phyllobrotica quadrimaculata</i> (LINNAEUS, 1758)	-	-	12	0.82	1	0.23
52	<i>Phyllotreta astrachanica</i> LOPATIN, 1977	-	-	2	0.14	-	-
53	<i>P. atra</i> (FABRICIUS, 1775)	-	-	1	0.07	-	-
54	<i>P. exclamationis</i> (THUNBERG, 1784)	-	-	4	0.27	-	-
55	<i>P. nemorum</i> (LINNAEUS, 1758)	3*	0.44	66	4.48	-	-
56	<i>P. striolata</i> (FABRICIUS, 1803)	-	-	5	0.34	1	0.23
57	<i>P. undulata</i> (KUTSCHERA, 1860)	2	0.44	12	0.82	1	0.23
58	<i>P. vittula</i> (REDTENBACHER, 1849)	12	2.62	41	2.79	2	-
59	<i>Aphthona euphorbiae</i> (SCHRANK, 1781)	1	0.22	-	-	-	0.46
60	<i>A. lutescens</i> (GYLLENHAL, 1813)	20	4.37	33	2.24	10	2.30
61	<i>A. nonstriata</i> (GOEZE, 1777)	11*	2.18	100	6.79	82	18.89
62	<i>A. pallida</i> (BACH, 1856)	-	-	1	0.07	-	-
63	<i>Longitarsus fulgens</i> (FOUDRAS, 1860)	-	-	-	-	1*	-
64	<i>L. luridus</i> (SCOPOLI, 1763)	-	-	1	0.07	-	-
65	<i>L. nasturtii</i> (FABRICIUS, 1792)	-	-	1	0.07	1	0.23
66	<i>L. parvulus</i> (PAYKULL, 1799)	3*	0.22	2	0.14	-	-
67	<i>L. anchusae</i> (PAYKULL, 1799)	-	-	-	-	7	1.61
68	<i>Altica aenescens</i> (WEISE, 1888)	-	-	1	0.07	-	-
69	<i>A. lythri</i> AUBÉ, 1843	1	0.22	-	-	-	-
70	<i>A. oleracea</i> (LINNAEUS, 1758)	1	0.22	6	0.41	3	0.69
71	<i>A. quercetorum</i> FOU DRAS, 1860	2	0.44	-	-	-	-
-	<i>Altica n. det.</i> (females)	2	-	7	-	1	-
72	<i>Batophila rubi</i> (PAYKULL, 1799)	-	-	3	0.20	-	-
73	<i>Lythraia salicariae</i> (PAYKULL, 1800)	92	20.09	287*	19.43	28	6.45
74	<i>Asiolestia ferruginea</i> (SCOPOLI, 1763)	-	-	18	1.22	3	0.69
75	<i>A. transversa</i> (MARSHAM, 1802)	-	-	11	0.75	-	-
76	<i>Hippuriphila modeeri</i> (LINNAEUS, 1761)	-	-	10	0.68	-	-
77	<i>Crepidodera aurata</i> (MARSHAM, 1802)	-	-	1	0.07	-	-
78	<i>Epitrix pubescens</i> (KOCH, 1803)	-	-	-	-	22*	0.69
79	<i>Chaetocnema aridula</i> (GYLLENHAL, 1827)	-	-	4	0.27	1	0.23
80	<i>Ch. hortensis</i> (GEOFFROY, 1785)	9	1.97	3	0.20	-	-
81	<i>Ch. mannerheimii</i> (GYLLENHAL, 1827)	-	-	1	0.07	1	0.23
82	<i>Ch. sahlbergii</i> (GYLLENHAL, 1827)	25*	0.44	-	-	-	-
83	<i>Ch. subcoerulea</i> (KUTSCHERA, 1864)	5	1.09	3	0.20	-	-
84	<i>Ch. laevicollis</i> (THOMSON, 1866)	12*	2.40	46	3.13	-	-
-	<i>Ch. concinna/laevicollis</i> (females)	-	-	10	-	-	-
85	<i>Psylliodes affinis</i> (PAYKULL, 1799)	-	-	3	0.20	-	-
86	<i>P. attenuata</i> (KOCH, 1803)	-	-	3	0.20	-	-
87	<i>P. dulcamarae</i> (KOCH, 1803)	-	-	2	0.14	1*	-
88	<i>P. picina</i> (MARSHAM, 1802)	-	-	9	0.61	-	-
89	<i>Cassida denticollis</i> SUFFRIAN, 1844	-	-	2	0.14	1	0.23
90	<i>C. flaveola</i> THUNBERG, 1794	-	-	29	1.97	-	-
91	<i>C. nebulosa</i> LINNAEUS, 1758	-	-	8	0.54	-	-
92	<i>C. prasina</i> ILLIGER, 1798	-	-	1	0.07	1	0.23
93	<i>C. rubiginosa</i> MÜLLER, 1776	-	-	7	0.48	5	1.15

Table 1. Continuation

No.	Species	L I	D%	L II	D%	L III	D%
94	<i>C. vibex</i> LINNAEUS, 1767	-	-	3	0.20	-	-
95	<i>C. vittata</i> VILLERS, 1789	3*	0.22	4	0.27	-	-
96	<i>C. viridis</i> LINNAEUS, 1758	-	-	3	0.20	1	0.23
97	<i>C. haemisphaerica</i> HERBST, 1799	-	-	1	0.07	-	-
98	<i>Hypocassida subferruginea</i> (SCHRANK, 1776)	1*	-	-	-	-	-
Total		589		1524		487	

## RESULTS AND DISCUSSION

Among all of the species collected in the park area – 47 composed hydrophiles and hygrophiles (48%) (Tab. 1). The hydrophiles belong mainly to *Donaciinae* and only a few species to *Galerucinae* subfamilies. The subfamily *Galerucinae* and some representatives of *Donaciinae*, *Cryptocephalinae*, *Chrysomelinae* and *Alticinae* were the major part of the hygrophilous species.

In the investigated area the chrysomelids occurred the most numerous in the moist meadow and low bog communities (1524 indiv. – 58.65%, respectively), high and transitional bogs (589 indiv. – 22.65%) and rushes (487 indiv. – 18.73%).

The chrysomelid community of high and transitional bogs (stations 2-3, 5, 10, 14, 19, 23-24, 27 – Fig.1) numbered 40 species and 589 individuals. In the quantitative samples 460 individuals (34 species) were obtained while in the qualitative samples 129 individuals (19 species). In the last group 6 species absent in the quantitative samples were found: *Donacia cinerea*, *D. dentata*, *D. semicuprea*, *D. vulgaris*, *Chrysomela cuprea* and *Hypocassida subferruginea*. In the quantitative analysis 458 specimens were used.

The structure of dominance was presented as follows – eudominants: *Plateumaris sericea* (20.74%), *Lythraia salicariae* (20.09%), *Galerucella tenella* (11.79%), *G. grisescens* (10.48%), dominants: – none, subdominants: *Aphthona lutescens* (4.37%), *Lochmaea suturalis* (3.93%), *Cryptocephalus janthinus* (3.71%), *Lochmaea capreae* (3.49%), *Phyllotreta vittula* (2.62%), *Chaetocnema laevicollis* (2.40%), *Aphthona nonstriata* (2.18%), recedents – 5 and subrecedents – 18 species.

In high and transitional bog communities the characteristic species (occurring only in that type of habitat or similar) were hygrophiles – *Plateumaris rustica* (W = 100%) and *Plateumaris sericea* (W = 83.70%). The other 5 characteristic but not numerous hydro- and hygrophilous species are also closely related with plants of wet habitats. In the park area there were the species representing the mainly widely distributed Euro-Siberian zoogeographical element: *Donacia ver-*

*sicolorea* (W = 100%), *Altica lythri* (W = 100%), *Cryptocephalus biguttatus* (W = 60%), *C. decemmaculatus* (W = 60%) and *Donacia aquatica* (W = 50%) [9].

The chrysomelid community of moist meadows and low bogs (stations 1, 4-10, 12-13, 15-22, 25, 27-28) was represented by 1524 individuals (77 species). 1489 specimens (77 species) were contained in the quantitative samples whereas there were 35 specimens (8 species) in the qualitative samples. The quantitative samples contained all species from the qualitative samples. In the quantitative analysis 1472 specimens were used.

The structure of dominance was presented as follows – eudominants: *Lythreria salicariae* (19.43%), *Galerucella tenella* (10.46%), dominants: *Galerucella grisescens* (8.02%), *Aphthona nonstriata* (6.79%), subdominants: *Phyllotreta nemorum* (4.48%), *Oulema melanopus* (4.28%), *Chrysolina varians* (3.60%), *Chaetocnema laevicollis* (3.13%), *Plateumaris consimilis* (2.85%), reccedents – 2 and subreccedents – 31 species.

In moist meadow and low bogs communities the highest number of characteristic species (26) was noted. The only one characteristic species – *Lema cyanella* (W = 100%) was collected only in that type of habitat. The other species had lower values of the fidelity index. The hygrophilous species feeding on *Lythrum salicaria* or *Lysimachia vulgaris* (Primulaceae) were there: *Psylliodes picina* (W = 90%), *Lythreria salicariae* (W = 63.78%), *Aphthona lutescens* (W = 50.77%) and *Galerucella grisescens* (W = 50%). *Hydrothassa hannoveriana* (W = 83.33%), related with *Caltha palustris* and *H. marginella* (W = 72.41%) feeding on plants from *Ranunculus* genus also obtained high fidelity. Furthermore *Chrysolina staphylaea* (W = 81.25%) and *Chrysolina herbacea* (W = 50%), collected only in not numerous individuals, occurred here on plants from *Mentha* genus [9]

A few species recorded in those communities in the Park were earlier described by Gräf and Koch [4] as bioindicators of wet habitats. There were: *Phyllobrotica quadrimaculata* (W = 85.71%) feeding on *Scutellaria galericulata*, *Hippuriphila modeeri* (W = 71.43%) related with *Equisetum palustre* and *Cassida vibex* (W = 50%) feeding on plants from *Carduus* and *Cirsium* genus [2].

Other entomologists in many parts of Poland in the similar wet habitats also collected the characteristic species noted in the Park: *Donacia marginata* (W = 100%), *Psylliodes affinis* (W = 100%) and *Plateumaris consimilis* (W = 80.77%), *Donacia semicuprea* (W = 57.89%), and *Psylliodes dulcamarae* (W = 66.67%) [9].

The chrysomelid community of rushes (stations 8-11, 24-26, 28) numbered 487 individuals (40 species) collected in the quantitative samples while there were

52 individuals (15 species) in the qualitative samples. In the last group 5 species absent in the quantitative samples were found: *Donacia thalassina*, *D. vulgaris*, *Prasocuris phellandrii*, *Longitarsus fulgens*, and *Psylliodes dulcamarae*. In the quantitative analysis 434 specimens were used.

The structure of dominance was presented as follows – eudominants: *Galerucella tenella* (30.65%), *Aphthona nonstriata* (18.89%), *Galerucella cal-mariensis* (13.59%), dominants: *Galerucella griseescens* (8.06%), *Lythriaria salicariae* (6.45%), subdominants: *Cryptocephalus janthinus* (2.53%), *Chrysolina polita* (2.53%), recedents – 2 and subrecedents – 31 species.

In rush communities there were the hygrophilous species which occurred only in that habitat: *Epithrix pubescens* (W = 88%) and *Galerucella cal-mariensis* (W = 86.76). Furthermore, the other characteristic but not numerous species were: *Donacia aquatica* (W = 100%), *D. impressa* (W = 100%), *D. thalassina* (W = 100%), *Galerucella nymphaeae* (W = 100%), *Longitarsus fulgens* (W = 100%), *Donacia vulgaris* (W = 66.67%), *Cryptocephalus parvulus* (W = 50%) and *Chaetocnema mannerheimii* (W = 50%) [9].

The majority of hydro- and hygrophilous species collected in the Park showed the attributes of the bioindicator species of wet biotopes for the whole of their distribution ranges. The earlier results of the investigations carried on by German entomologists on the area of Rhine Province clearly testified the fact showed above [4].

Among the studied areas of our country the higher number of hydrophilous species has been described only in the Poleski National Park so far [8].

In the investigated biotopes of the park the highest value of the species richness index were obtained for the chrysomelid community of moist meadows and low bogs (23.91%) [9]. The essential influence on the value of that index was connected with the considerable differentiation of plant associations and the large number of host plants. The species feeding on monocotyledones and dicotyledones found favourable conditions for development in those communities. Two remaining types of communities showed a slightly lower value of the species richness index. For chrysomelid communities of high/transitional bogs and rushes it respectively amounted to 14.09% and 16.38%. All of the mentioned plant communities of the park were highly natural with results in the small quantitative share of ubiquitous species of chrysomelids. Wet biotopes are also the refugium for the boreal species like: *Hydrothassa marginella*, *Chrysomela cuprea* and *Galerucella griseescens*.



## CONCLUSION

The obtained results showed explicitly that a large number of hydro- and hygrophilous species occurred in wet biotopes of the park. This particularly referred to the protected areas. This fact confirmed the correctness of choice and the usefulness of the protection of these communities and their high naturality.

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BIORÓŻNORODNOŚĆ STONKOWATYCH (*COLEOPTERA*,  
*CHRYSOMELIDAE*) WILGOTNYCH BIOTOPÓW PARKU  
KRAJOBRAZOWEGO „LASY JANOWSKIE”

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**Streszczenie.** W latach 1996-2000 na obszarze Parku Krajobrazowego „Lasy Janowskie” dokonywano odłowów chrząszczy stonkowatych na 28 stanowiskach wyznaczonych w zbiorowiskach torfowisk wysokich i przejściowych, wilgotnych łąk i torfowisk niskich oraz w szuwarowych. Ogółem w tych biotopach zebrano 2600 osobników należących do 98 gatunków. Spośród nich 48% stanowiły gatunki wskaźnikowe terenów wilgotnych (hydro- i higrofile). W badanych biotopach należały one do dominantów i cechowały się wysoką wartością wskaźnika wierności. Zgrupowania stonkowatych badanych zbiorowisk posiadały również wysokie wartości wskaźnika zróżnicowania gatunkowego.

**Słowa kluczowe:** stonkowate, *Chrysomelidae*, faunistyka, Lasy Janowskie, SE Poland