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KATARZYNA CHOLEWICKA

CURCULIONIDS (*COLEOPTERA, CURCULIONIDAE*) OF WARSAW AND MAZOVIA

ABSTRACT

There are 458 curculionid species recorded from Warsaw and Mazovia. Within the administrative boundaries of Warsaw 346 species were recorded, including 292 species in the suburbs, 139 species in the parks, 48 species in the housing estates, and only 33 species in the centre of the town. In the town the proportion of species with large geographical ranges increased, such as cosmopolitan, Holarctic, and Palaearctic.

The curculionids of Warsaw and Mazovia are predominated by the species associated with meadows and pastures. Their proportions increased with rising urban pressure.

The species living in soil and in the herb layer find most suitable conditions in the town. The proportion of monophagous species dropped, while that of polyphagous species increased with urban pressure. The proportion of oligophagous species was maintained at similar level in all the habitats and at the same time, they were most abundant.

INTRODUCTION

This paper is one of the set of studies of the fauna of Warsaw [41]. It is concentrated upon the species composition of *Curculionidae* occurring in Warsaw and Mazovia, and upon the effect of urban pressure on this group.

No paper dealing exclusively with curculionids of Warsaw and Mazovia has appeared so far, some information being dispersed in papers by different authors working on this family. The earliest contribution on this subject was prepared by Osterloff [10], who recorded about 160 species from this area. The most comprehensive analysis of the *Curculionidae* of this region was prepared by Smreczyński [13], who described 391 species from the collection of Mączyński. In later papers, Tenenbaum [32—40], Smreczyński [12, 14—31], and Bartoszyński [3, 4] recorded several hundred species of *Curculionidae* from Warsaw and Mazovia.

In this paper, the data available so far on the *Curculionidae* of Warsaw and Mazovia are set up. A total of 458 species are known in Mazovia from the literature. This list has been supplemented with materials from the

collection of the Institute of Zoology PAS in Warsaw (identified by Smreczyński), and with the data obtained in 1974—1978 during the studies carried out at the Institute of Zoology PAS, and entitled "The effect of urban pressure on the fauna of Warsaw". Characteristics of the study sites and methods of material collecting have been described elsewhere [6, 9].

The check-list of 476 curculionids found in Mazovia is set up in Table 6. It does not include 9 species reported by Tenenbaum as occurring in Mazovia. These are *Apion seriatosetosulum* Wenck., *A. scalptum* Rey., *A. aenemicans* Wenck., *A. facetum* Gyll., *Tychius sorex* Gyll., *Acalles ptinoides* Mrsh., *Geuthorrhynchus molitor* Gyll., *Gymnaetron amictum* Germ., and *G. vestitum* Germ. These species are not considered since Smreczyński [24] suggest that either they were wrongly identified or some of them were present in Mazovia only casually. In turn, some species the occurrence of which in Mazovia can be put in question, are included. These are a few species reported exclusively by Osterloff and Tenenbaum, since Smreczyński generally calls in question the correctness of identification by these authors. Also two species quoted by Bartoszyński but not confirmed by Smreczyński are included in this group, as well as two species recorded by Smreczyński but with a note suggesting further verification of the data supplied [13, 25, 26, 28—31]. The 11 dubious species recorded by Osterloff are: *Apion aciculare, A. genistae, A. ulicis, A. brunipes, A. armatum, A. immune* (also recorded by Tenenbaum [40]), *A curtisi, A. punctigerum, A. opeticum, Polydrusus impar,* and *Strophosomus retusus*. Among those recorded by Tenenbaum, 3 species belong here: *Orthochaetes penicillus, Ceutorhynchus euphorbiae,* and *Gymnaetron meles*. In addition, the following species are included here: *Ceutorhynchus canaliculatus, Rhynchaenus rufitarsis* (recorded by Bartoszyński), and *Dorytomus salicinus* and *Cionus longicollis montanus* (recorded by Smreczyński). These 18 species have a question mark in the Table. They are not considered in the zoogeographical and ecological analysis.

In addition, there are also discrepancies between data in different papers by Smreczyński, e.g., between some data describing the collection of curculionids set up by Mączyński [13] and those contained in the subsequently prepared key to determination of *Curculionidae* [26, 27, 30, 31]. Smreczyński did not include to the key a part of the material that he identifie, available in the collection of the Institute of Zoology PAS. These are the following species: *Sciaphobus squalidus, Ceutorhynchus pubicollis, Miarus campanulae, Smicronyx smreczyński, Otiorhynchus fuscipes, Mylacus rotundatus, Polydrusus pilosus* (also recorded in the present study), *Tychius aureolis femoralis, Phytobius velaris, Ceutorhynchus rapae, Nanophyes globulus,* and *Gymnaetron collinum*. These species are considered in the further analysis.

The fauna of *Curculionidae* was analysed in non-urban habitats of Mazovia and in Warsaw. The latter terrain is subdivided into the suburbs

and urban green areas. Three types of urban green areas are characteristic of Warsaw: parks, green areas of housing estates with loosely built areas, and green areas of the centre of the town, closely built-up. All of them were under study. In table 6, containing the check-list of species, the materials collected in unknown habitats are set up in the column "others". In the column "suburban areas" the literature data from the following areas are presented: Pyry, Żerań, Wilanów, Marymont, Bielany, Gocław, Młociny, Pelcowizna, Wawer, and Natolin. At the time of material collection these districts did not belong to the town, but now they are within the administrative boundaries of Warsaw. The literature data on curculionids of urban areas were collected in the Łazienki park, Saxon Garden, Botanical Garden, and Zoological Garden.

The literature data have been supplemented by the results of the studies conducted in Warsaw and Mazovia in 1974—1976. Curculionids were captured from April to October each year, by means of the sweep-net method, Barber's pitfall traps, and Moericke's traps [6]. To compare the curculionids occurring in the town with those occupying natural habitats, materials were collected in the Kampinos Forest. Jaktorów Forest, Młochów and Mroków. The suburbs consist of the terrains located within the administrative boundaries of Warsaw with a small proportion of built areas. The samples were taken in such districts as Bielany, Jelonki, Ursynów, Rakowiec, and Białołęka Dworska. In urban areas, materials were collected from all main types of green areas. The following parks were under study: Łazienki, Praga park, Cemetery of Soviet Soldiers, Park of Culture and Leisure in Powiśle, and Saxon Garden; among the housing estates loosely built, Wierzbno, Stawki, and Nowolipki were under study; in the centre of the town, separate trees and lawns were examined in the streets Wilcza, Hoża, Piękna, Grójecka, Al. Niepodległości, Al. Żwirki i Wigury, Pl. Zbawiciela, Pl. Konstytucji, and Pl. na Rozdrożu.

Such an approach makes it possible to follow the changes in the species composition of *Curculionidae* subjected to urban pressure.

SPECIES COMPOSITION

In Warsaw and Mazovia 458 curculionid species were found, which accounts for 60% of all curculionids known from Poland, about 780 species being recorded from the whole country [25]. Out of these 458 species only 138 (30%) were recorded in recent studies[1]. This percentage is so low firstly because the study period was short (since 1974), and also because the fauna of curculionids is probably simplified as a result of man's activity.

[1] I wish to express my gratitude to Dr. B. Petryszak, who verified the identification of the materials to species.

There were 346 species occurring within the administrative boundaries of Warsaw, which accounts for 75.5% of all species in Mazovia. The remaining 112 species (24.5%) inhabited non-urban terrains. Among 346 species recorded from the town, 292 species occurred in suburban areas (63.6% of those in Mazovia and 84.4% of those in Warsaw), and 148 species inhabited green urban areas (32.3% of those in Mazovia and 42.8% of those in Warsaw). There were 149 species recorded for Warsaw, but without a specified site of collection (column "other sampling areas" in Table 6). Only 26 of them (5.7% of the fauna of Mazovia and 7.5% of the fauna of Warsaw) were not recorded in the urban green areas and in the suburbs concurrently. On the transition from suburban areas to urban green areas the number of species dropped by half as a result of anthropogenic pressure. The following figures were obtained for particular types of urban green areas:

— in urban parks, 139 species (30.3 and 40.2% of the fauna of Mazovia and Warsaw respectively),

— in housing estates, 48 species (10.5 and 13.9%),

— in town centre, 33 species (7.2 and 9.5%).

It follows from this that the number of species drops with increasing anthropogenic pressure (air pollution, soil pollution, overdrying, unsuitable changes in water relations, specific floristic composition of urban vegetation).

ZOOGEOGRAPHICAL ANALYSIS

Curculionids of Warsaw and Mazovia have been classified into ten zoogeographical elements. In Table 1 they are arranged according to their narrowing range. The table shows percentage proportion of particular zoogeographical elements in the study sites.

In both urban and non-urban areas, the proportion of European species was the highest. Not only the species occurring exclusively in Europe are included here but also those the distribution of which is not exactly known, and, at the same time, which have not been recorded outside Europe. Thus, it is possible that after more detailed studies their proportion will drop in favour of Palaearctic and Euro-Siberian species.

The proportion of cosmopolitan, Holarctic, and Palaearctic species increased with anthropogenic pressure. Only in the centre of the town the number of Palaearctic species slightly dropped. The proportion of Euro-Siberian species in Mazovia was the same as in the urban green areas, being only slightly lower in the suburbs. There were differences, however, in their proportions in particular types of urban green areas. They dropped with increasing urban pressure in the parks, also in the green areas of housing estates, and in the centre of the town. No Euro-Siberian species were recorded from the centre of the town. Both numbers and proportions

Tab. 1. Proportions of zoogeographical elements in curculionids of Warsaw and non-urban habitats of Mazovia
(N — number of species)

Zoogeographical element	Mazovia		Warsaw									
			Suburbs		Urban green areas							
					Total		Parks		Housing estates		Town centre	
	N	%	N	%	N	%	N	%	N	%	N	%
Cosmopolitan	3	0.7	1	0.3	1	0.7	1	0.7	—	—	1	3.0
Holarctic	31	6.8	24	8.2	14	9.4	14	10.1	8	16.7	7	21.2
Palaearctic	88	19.2	63	21.6	43	29.0	43	30.9	17	35.4	10	30.3
Euro-Siberian	93	20.3	54	18.5	30	20.3	27	19.4	5	10.4	—	—
European	201	43.8	127	43.5	54	36.5	50	36.0	15	31.3	13	39.4
South-Euro-Siberian	11	2.4	6	2.1	3	2.0	3	2.2	1	2.1	1	3.0
Submediterranean	19	4.1	11	3.8	1	0.7	—	—	1	2.1	—	—
Southeastern	5	1.1	3	1.0	1	0.7	—	—	1	2.1	1	3.0
Subatlantic	4	0.9	—	—	1	0.7	1	0.7	—	—	—	—
Mountain	3	0.7	3	1.0	—	—	—	—	—	—	—	—

of European species tended to drop with increasing pressure, except for the centre of the town where their proportion was the highest of all the urban green areas. Submediterranean, subatlantic and mountain species, like European ones, recede from habitats subjected to heavy anthropogenic pressure. The south-Euro-Siberian and southeastern species drop in numbers along the gradient of urban pressure from Mazovia to suburban and urban areas. However, within the urban green areas their proportions increased with urban pressure.

In general, the proportion of species with large geographical ranges increased in Warsaw as compared with Mazovia. This refers to cosmopolitan, Holarctic, and Palaearctic species. The proportion of Euro-Siberian species in non-urban areas was the same as in the town. The proportion of the species with smaller ranges than Euro-Siberian dropped in the town.

ECOLOGICAL ANALYSIS

The *Curculionidae* belong to the most abundant families of beetles, and they occur all over the world. Their biology and ecology are relatively well known [1, 2, 7, 11]. All curculionids are phytophagous, both the larvae and the adults. Data on the host plants of most curculionids are given in the literature.

HABITAT PREFERENCE

The classification of curculionids into ecological elements is based on their association with plant communities. Since the biology of some species is not

sufficiently known to determine their relation to particular vegetation types, they are excluded from this analysis. The classification of plant communities is mainly based on Matuszkiewicz [8]. But the phytosociological units distinguished by this author are too narrow considering our present state of knowledge of curculionids, and, consequently, the number of ecological elements is reduced. The first group consists of forest species, subdivided into four categories: associated with dry pine forests *(Cladonio-Pinetum)*, moist pine forests *(Peucedano-Pinetum)*, oak-pine forests *(Pino-Quercetum)*, oak-lime-hornbeam forests *(Tilio-Carpinetum)*, and with carrs *(Circaeo-Alnetum, Salici-Populetum,* and *Ficario-Ulmetum)*. When ever the type of forest was not univocally defined for the species, they were classified as associated with "other forest types" (Tab. 3). The next two categories involve the species associated with scrub and xerothermal grasslands (Tab. 2). The fourth category includes the species associated with meadows and pastures, subdivided into the species of heaths *(Calluno-Ulicetalia)*, wet meadows and pastures *(Arrhenatheretalia)*, and moderately wet meadows *(Molinietalia)*. The species not univocally included to one of these categories are listed in the column "Meadows and pastures" (Tab. 3). The successive category consists of the species associated with moors and water bodies (Tab. 2). In the column "Others" (Tab. 2), there are species living in excrescences caused by hymenopterans such as *Apion minimum*, also pests of stored products like *Sitophilus granarius*, and species occurring in all types of the vegetation, such as *Otiorhynchus raucus* and others.

Tab. 2. Proportions of groups with different habitat preferences in curculionids of Warsaw and non-urban habitats of Mazovia
(N — number of species)

Habitat	Mazovia		Warsaw									
			Suburbs		Urban green areas							
					Total		Parks		Housing estates		Town centre	
	N	%	N	%	N	%	N	%	N	%	N	%
Forest	125	27.3	71	24.3	29	19.6	27	19.5	4	8.3	2	6.1
Scrub	24	5.2	19	6.5	10	6.8	9	6.5	3	6.2	3	9.1
Xerothermal grasslands	53	11.6	37	12.7	18	12.2	16	11.5	7	14.6	5	15.2
Meadows and pastures	159	34.7	109	37.3	61	41.2	59	42.4	27	56.3	19	57.6
Moors and aquatic communities	23	5.0	6	2.1	8	5.4	8	5.8	—	—	—	—
Others	11	2.4	6	2.1	2	1.4	2	1.4	2	4.2	1	3.0
Unknown	63	13.8	44	15.0	20	13.5	18	12.9	5	10.4	3	9.1

The meadow-pasture species occurred in highest proportions both in Mazovia and in Warsaw (Tab. 2). In the town their proportion increased with rising urban pressure, and in the centre of the town it was almost twice as high as in non-urban habitats. In the centre, such species were frequently captured as *Apion virens, A. flavipes, Sitona lineata, S. flavescens,*

S. hispidula, *S. humeralis*, and *Miccotrogus picirostris*. The species associated with heaths did not occur in the centre of the town.

A different situation was observed in the case of curculionids associated with forests. Their proportion decreased with rising urban pressure. In the centre of the town it was one-fifth of their proportion in non-urban habitats. The species associated with dry and moist pine forests occurred only in non-urban and suburban habitats, while the species associated with oak-pine forests were caught in urban parks. This was due to the presence of trees characteristic of this community in parks. The species associated

Tab. 3. Proportions of groups with different habitat preferences in curculionids of Warsaw and Mazovia, associated with forests and meadows
(N — number of species)

Habitat preference	Mazovia		Warsaw									
			Suburbs		Urban green areas							
					Total		Parks		Housing estates		Town centre	
	N	%	N	%	N	%	N	%	N	%	N	%
Dry coniferous forest	20	4.4	7	2.4	—	—	—	—	—	—	—	—
Moist coniferous forest	2	0.4	1	0.3	—	—	—	—	—	—	—	—
Mixed forest	16	3.5	11	3.8	4	2.7	4	2.9	—	—	—	—
Oak-hornbeam forest	22	4.8	15	5.1	3	2.0	3	2.2	—	—	1	3.0
Carrs	54	11.8	31	10.6	18	12.2	16	11.5	4	8.3	—	—
Other forest types	11	2.4	8	2.7	4	2.7	4	2.9	—	—	1	3.0
Heaths	8	1.7	4	1.4	1	0.7	1	0.7	—	—	—	—
Meadows and pastures	73	15.9	52	17.8	30	20.3	30	21.6	14	29.2	11	33.3
Moist meadows and pastures	36	7.8	27	9.2	19	12.8	18	12.9	11	22.9	6	18.2
Wet meadows and pastures	42	9.2	26	8.9	11	7.4	10	7.2	2	4.2	2	6.1

with oak-hornbeam forests and with carrs were occasionally met in housing estates and in the centre of Warsaw. Such species were captured there as *Brachybatus kellneri* associated with *Acer platanoides* L. and *A. campestre*, *Anthonomus ulmi* associated with *Ulmus campestris* L., and *Polydrusus corruscus* associated with different willows (*Salix* sp.).

The proportion of the species associated with scrub and xerothermal grasslands in Warsaw was the same as in Mazovia. A slight increase was observed only in the areas subjected to heavy urban pressure, as compared with natural habitats. This is due to the occurrence of thermo- and xerophilous plants characteristic of xerothermal grasslands, and "warm" scrub communities in urban areas. Such vegetation finds suitable conditions in the centre where air and soil temperatures are higher, and humidity is lower than in open areas. The species associated with moors and aquatic communities did not occur in housing estates and in the centre of the town. They

were present only in the parks with aquatic plants characteristic of such water bodies as ponds and channels in the Łazienki park and the Saxon Garden.

Habitat conditions in the town differ markedly from those in non-urban areas, thus there are differences also in the species composition of curculionids. Forest species are eliminated from the town, while the species associated with meadows and pastures both dry and wet can find suitable conditions there, and their proportion is higher in the town than in non-urban habitats.

STRATIFICATION

The vertical distribution of curculionids in Warsaw and Mazovia was analysed for larvae and adults separately (Tab. 4). The larvae were classified into those inhabiting soil and feeding on plant roots, larvae inhabiting soil and herb layer and feeding on roots and above-ground parts of herbs, these inhabiting only the herb layer, and those inhabiting shrubs and tree crowns.

Tab. 4. Proportions of groups with different vertical distribution in curculionids of Warsaw and non-urban habitats of Mazovia
(N — number of species)

	Layer	Mazovia		Warsaw									
				Suburbs		Urban green areas							
						Total		Parks		Housing estates		Town centre	
		N	%	N	%	N	%	N	%	N	%	N	%
Larvae	Soil	91	19.9	68	23.3	40	27.0	37	26.6	18	37.5	13	39.4
	Soil and herbs	24	5.2	18	6.2	9	6.1	9	6.5	1	2.1	1	3.0
	Herbs	174	38.0	100	34.2	51	34.5	49	35.3	19	39.6	12	36.4
	Shrubs and tree crowns	94	20.5	53	18.2	20	13.5	19	13.7	2	4.2	1	3.0
	Unknown	75	16.4	53	18.2	28	18.9	25	18.0	8	16.7	6	18.2
Imagines	Ground layer	20	4.4	17	5.8	9	6.1	9	6.5	2	4.2	2	6.1
	Herbs	301	65.7	192	65.7	101	68.2	96	69.1	37	77.1	25	75.8
	Herbs, shrubs and tree crowns	13	2.8	11	3.8	7	4.7	6	4.3	3	6.3	3	9.1
	Shrubs and tree crowns	114	24.9	68	23.3	29	19.6	26	18.7	6	12.5	3	9.1
	Unknown	10	2.2	4	1.4	2	1.4	2	1.4	—	—	—	—

The proportion of larvae inhabiting soil increased with rising urban pressure. The proportion of larvae feeding on herbaceous plants did not show any trend, and seem to be independent of urban pressure. If, however, the total fauna of curculionids occurring in Mazovia is compared with that of all urban habitats, the proportion of these species is lower in the town. Both in Warsaw and in Mazovia the soil layer is inhabited by the highest number of species, as compared with other layers. Only the soil in the

centre of the town is inhabited by one species more than the herb layer. The proportion of larvae associated with shrubs and tree crowns dropped with anthropogenic pressure, and in the centre of the town it was one-seventh of the one in non-urban habitats.

The vertical distribution of adult forms followed a slightly different pattern. Here such groups were distinguished as the species occurring in the ground layer, herb layer, in shrubs and tree crowns, and those occupying all the vegetation layers. The species associated with the herb layer were in the highest proportions. The proportion of this group increased with urban pressure. The proportion of the species associated with shrubs and tree crowns dropped with urban pressure, and in the centre of the town it was one-third of their proportion in non-urban habitats (Tab. 4).

To sum up, the urban habitat is most suitable for the species whose larvae live in soil, while adult forms on herbaceous plants.

RANGE OF FOOD SPECIALIZATION

The curculionids belong to biting exo- and endophages. They may graze on different plant parts. In this respect they may be grouped into phyllophages, xylophages, rhizophages, and others, including species feeding on flowers, fruits, or seeds.

All the curculionids occurring in Warsaw and Mazovia were classified into polyphages, oligophages and monophages (Tab. 5). The oligophages consist of the species feeding on plants of single families. The proportion of polyphages increased with rising urban pressure. It gradually increased beginning with non-urban areas, through suburbs, urban parks and housing estates, to the centre of the town. The species of this group, most frequently met in the town and independent of the degree of urban pressure, are *Otiorhynchus raucus* and *O. ovatus*.

The proportion of oligophages form a different picture. They were different for various sites and did not show a clear increasing or decreasing tendency along the gradient of urban pressure. There was only a slight increase in the proportion of oligophages species in the town as compared with non-urban habitats. Within the urban areas, their proportion slightly decreased in the centre of Warsaw. Oligophagous species are more frequent among curculionids, both in the built-up areas and in the natural habitat. To the species most often caught belong *Apion radiolus, A. virens, A. flavipes, Sitona humeralis, Hypera zoila,* and *Miccotrogus picirostris*. All of them live on clover (*Trifolium* sp.), birdsfoot-trefoil (*Lotus* sp.) and on other plants of the family *Papilionaceae*.

The proportion of monophagous species markedly dropped with increasing anthropogenic pressure, from non-urban habitats to housing estates. Only in the centre, an increase in the proportion of monophagous species was observed. Such species of this group were present there as *Ceutorhynchus punctiger, Ceuthorhynchidius barnevillei,* and *C. troglodytes,* their host plants

Tab. 5. Proportions of trophic groups in curculionids of Warsaw and non-urban habitats of Mazovia
(N — number of species)

Group	Mazovia		Warsaw									
			Suburbs		Urban green areas							
					Total		Parks		Housing estates		Town centre	
	N	%	N	%	N	%	N	%	N	%	N	%
Polyphages	61	13.3	48	16.4	26	17.6	24	17.3	10	20.8	8	24.2
Oligophages	287	62.7	175	59.9	95	64.2	89	64.0	31	64.6	19	57.6
Monophages	69	15.1	39	13.4	15	10.1	14	10.1	3	6.3	3	9.1
Unknown	41	8.9	30	10.3	12	8.1	12	8.6	4	8.3	3	9.1

being dandelion (*Taraxacum officinale* Web) yarrow (*Achillea millefolium* L.) and ribwort plantain (*Plantago lanceolata* L.) respectively. All these three plant species are common throughout Warsaw as weeds of lawns, squares, and other habitats heavily transformed by man.

In general, it may be concluded that:

— the proportion of polyphagous species increases with rising anthropogenic pressure,

— the proportion of oligophagous species does not depend on the degree of urban pressure, this being the most numerous group in all the habitats under study,

— the proportion of monophagous species drops with increasing urban pressure.

CONCLUSIONS

1. The number of curculionid species decreases with rising urban pressure.
2. The proportion of species with large geographical ranges (cosmopolitan, Holarctic, and Palaearctic) increases in the town.
3. The species of open habitats such as meadows, pastures, and xerothermal grasslands dominate in urban habitats. They accounted for 72.8% of the total curculionid fauna in the centre of the town.
4. Urban areas are most suitable habitats for the species whose larvae develop in soil and adult forms occur in the herb layer.
5. In Warsaw the proportion of oligophagous curculionids is the highest. The proportion of polyphagous species increases with urban pressure, while that of monophagous species drops.

NEW AND RARE SPECIES OF WARSAW AND MAZOVIA

Only the species recorded during the recent study in Warsaw and Mazovia are included here. In addition, the species from the collection of

the Institute of Zoology PAS identified by Smreczyński are considered. So far they have not been recorded from Mazovia or Warsaw in the literature, neither by Smreczyński nor by other authors.

Apion loti Kirby.

Mroków, May 1976.

Otiorhynchus niger F.

Warsaw-Bielany, 5 July, 1950, det. Smreczyński.

Otiorhynchus fuscipes Ol.

Warsaw-Bielany, 6 July, 1950, det. Smreczyński.

Otiorhynchus salicis Sörm.

Warsaw-Bielany, 5 July, 1950, det. Smreczyński.

Mylacus rotundatus F.

Warsaw-Gocławek, 18 April, 1948, det. Smreczyński.

Polydrusus pilosus Gredl.

Konstancin, 13 April, 1930, det. Smreczyński; Białołęka Dworska, June 1976.

Barypithes mollicomus Ahr.

Warsaw (Bielany — Vistula escarpment, Łazienki park), June 1976.

Sitona waterhouseti Walt.

Warsaw (interstreet lawn), September 1975.

Tychius aureolis femoralis Ch. Bris.

Stara Warka on the Pilica river, 29 July, 1952, det. Smerczyński

Tychius meliloti Steph.

Warsaw — Białołęka Dworska, June 1976.

Phytobius velaris Gyll.

Warka on the Pilica river, 22 June, 1952; Warsaw (Bielany, Zoological Garden), 7 June, 1940, det. Smreczyński.

Ceutorhynchus rapae Gyll.

Warsaw (Saska Kępa), 1951, det. Smreczyński; Warsaw (Cemetery of Soviet Soldiers), one specimen caught by Moericke's trap on a lime in May, 1975.

Ceutorhynchus pectoralis Weise.

Warsaw (Park of Culture and Leisure in Powiśle quarter), May 1976.

Ceuthorhynchidius barnevillei Grenier

Warsaw (Łazienki park, lawn in Wilcza street), July, September 1974; 1975.

Nanophyes globulus Germ.

Warsaw, 29 April, 1939; Warsaw-Bielany, 5 July, 1933; Natolin, 3 May, 1937; Podkowa Leśna, 14 June, 1934, det. Smreczyński.

Gymnaetron melanarium Germ.

Jaktorów Forest (Hamernia) — oak-hornbeam forest, a cutting, May 1976.

Gymnaetron collinum Gyll.

Warsaw — Anin, March 1949, det- Smreczyński.

Instytut Zoologii,
Polska Akademia Nauk
ul. Wilcza 64, 00-679 Warszawa
Polska

Tab. 6. Check list of *Curculionidae* species occurring in Warsaw and Mazovia

No.	○ — literature data ● — proved literature data + — unpublished data ? — doubtful information Species	Mazovia	Warsaw				
			suburban areas	parks	green areas in housing estates	town centre	other sampling areas
1	2	3	4	5	6	7	8
1	*Apion brevirostre* Herbst	○	–	+	–	–	–
2	*Apion violaceum* Kirby	●	●	–	–	–	○
3	*Apion marchicum* Herbst	●	○	+	–	–	○
4	*Apion sedi* Germ.	●	–	–	–	–	–
5	*Apion curtirostre* Germ.	●	+	+	–	+	–
6	*Apion simum* Germ.	○	○	–	–	–	○
—	*Apion aciculare* Germ.	–	?	–	–	–	–
7	*Apion rufirostre* F.	○	–	–	–	–	–
8	*Apion aeneum* F.	○	○	+	–	–	–
9	*Apion radiolus* Kirby	○	●	●	+	+	○
10	*Apion formaneki* Wagn.	○	○	–	–	–	–
11	*Apion difficile* Herbst	○	●	–	–	–	–
12	*Apion corniculatum* Germ.	○	○	○	–	–	–
—	*Apion genistae* Kirby	?	–	–	–	–	–
13	*Apion elongatum* Desbr.	○	○	–	–	–	–
—	*Apion ulicis* F.	–	?	–	–	–	–
14	*Apion fuscirostre* F.	○	+	–	–	–	–
15	*Apion minatum* Germ.	○	○	○	–	–	○
16	*Apion frumentarium* Payk.	○	○	–	–	–	–
17	*Apion cruentatum* Walt.	●	●	●	–	+	○
18	*Apion sanguineum* Deg.	○	○	–	–	–	–
19	*Apion pallipes* Kirby	–	○	○	–	–	–
20	*Apion urticarium* Herbst	●	+	–	–	–	–
21	*Apion rufulum zoufali* Wagn.	○	–	–	–	–	–
22	*Apion millum* Bach.	–	+	+	–	–	–
23	*Apion vicinum* Kirby	○	○	–	–	–	–
24	*Apion atomarium* Kirby	○	○	●	–	–	–
25	*Apion seniculus* Kirby	○	○	–	–	–	–
26	*Apion pubescens* Kirby	–	●	+	–	–	–
27	*Apion confluens* Kirby	○	○	○	–	–	○
28	*Apion stolidum* Germ.	–	○	–	–	–	–
29	*Apion detritum rumaniacum* Wagn.	○	–	–	–	–	○
—	*Apion brunnipes* Boh.	?	–	–	–	–	–
30	*Apion onopordi* Kirby	●	+	○	+	+	–
31	*Apion penetrans* Germ.	○	○	–	–	–	–
32	*Apion alliariae* Herbst	○	○	○	–	–	○
33	*Apion carduorum* Kirby	○	○	○	–	–	–
—	*Apion armatum* Gerst.	–	?	–	–	–	–
34	*Apion laevigatum* Payk.	○	○	–	–	–	–
35	*Apion dispar* Germ.	–	○	–	–	–	–
36	*Apion hookeri* Kirby	–	○	–	–	–	○

1	2	3	4	5	6	7	8
37	*Apion ebeninum* Kirby	○	–	–	–	–	–
38	*Apion striatum* Kirby	○	–	–	–	–	–
—	*Apion immune* Kirby	?	–	–	–	–	–
39	*Apion meliloti* Kirby	○	○	–	+	–	–
40	*Apion loti* Kirby	+	–	–	–	–	–
—	*Apion tenue* Kirby	○	●	●	–	–	–
42	*Apion platalea* Germ.	○	–	–	–	–	
43	*Apion gyllenhali* Kirby	–	●	+	–	–	–
44	*Apion minimum* Herbst	○	○	–	–	–	–
45	*Apion spencei* Kirby	–	○	+	–	–	–
46	*Apion reflexum* Gyll.	○	○	–	–	–	–
47	*Apion pavidum* Germ.	○	○	–	–	–	–
48	*Apion vorax* Herbst	●	○	+	–	–	–
49	*Apion ononis* Kirby	–	○	–	–	–	–
50	*Apion simile* Kirby	○	–	–	–	–	–
51	*Apion viciae* Payk.	○	+	+	+	–	–
52	*Apion ervi* Kirby	○	–	–	–	–	–
53	*Apion virens* Herbst	●	●	+	+	+	–
54	*Apion pisi* F.	○	●	●	–	–	–
55	*Apion aethiops* Herbst	–	○	–	–	–	–
56	*Apion punctigerum* Payk.	–	?	–	–	–	–
56	*Apion astragali astragali* Payk.	○	–	–	–	–	–
57	*Apion subulatum* Kirby	○	–	–	–	–	–
–	*Apion opeticum* Bach.	?	–	–	–	–	–
58	*Apion craccae* L.	●	●	+	–	–	–
59	*Apion cerdo* Gerst.	○	●	+	–	–	–
60	*Apion pseudocerdo* Dieckm.	○	–	+	–	–	–
61	*Apion pomonae* F.	○	○	+	–	–	–
62	*Apion flavipes* Payk.	●	●	●	+	+	○
63	*Apion nigritarse* Kirby	●	●	●	+	–	–
64	*Apion filirostre* Kirby	○	○	+	+	–	–
65	*Apion aestivum* Germ.	●	●	●	–	–	–
66	*Apion apricans* Herbst	●	●	+	+	–	–
67	*Apion varipes* Germ.	○	–	–	–	–	–
68	*Apion assimile* Kirby	●	–	–	–	–	–
69	*Apion dissimile* Germ.	○	○	–	+	–	–
70	*Otiorhynchus inflatus* var. *salebrosus* Boh.	○	–	–	–	–	–
71	*Otiorhynchus multipunctatus* F.	○	–	–	–	–	○
72	*Otiorhynchus repletus* Boh.	○	–	–	–	–	○
73	*Otiorhynchus niger* F.	–	○	–	–	–	–
74	*Otiorhynchus fuscipes* Ol.	–	○	–	–	–	–
75	*Otiorhynchus raucus* F.	●	●	●	+	+	○
76	*Otiorhynchus salicis* Ström	–	○	–	–	–	–
77	*Otiorhynchus sulcatus* F.	–	+	+	–	+	○
78	*Otiorhynchus rotundatus* Sieb.	○	+	●	+	+	○
79	*Otiorhynchus ovatus* L.	○	●	+	+	+	○
80	*Otiorhynchus tristis* Scop.	○	○	●	–	–	○
81	*Otiorhynchus ligustrici* L.	○	●	–	–	–	–
82	*Trachyphloeus scabriculus* L.	○	●	+	–	–	–

1	2	3	4	5	6	7	8
83	*Trachyphloeus bifoveolatus* Beck	·	●	+	+	+	–
84	*Trachyphloeus aristatus* Gyll.	–	●	+	+	+	○
85	*Mylacus rotundatus* F.	–	○	–	–	–	–
86	*Phyllobius cinerascens* F.	○	○	–	–	–	○
87	*Phyllobius sinuatus* F.	–	○	–	–	–	○
88	*Phyllobius virideaeris* Laich.	○	–	+	+	–	–
89	*Phyllobius viridicollis* F.	○	●	–	–	–	–
90	*Phyllobius brevis* Gyll.	○	–	–	–	–	–
91	*Phyllobius oblongus* L.	○	●	●	+	–	–
92	*Phyllobius piri* L.	●	●	+	+	–	○
93	*Phyllobius maculicornis* Germ.	○	–	–	+	–	–
94	*Phyllobius argentatus* L.	●	●	●	–	–	–
95	*Phyllobius arborator* Herbst	●	●	+	–	–	–
96	*Phyllobius scutellaris* Redt.	○	–	–	–	–	–
97	*Phyllobius calcaratus* F.	○	○	–	–	–	○
98	*Phyllobius urticae* Deg.	●	●	–	–	–	–
—	*Polydrusus impar* Gozis	?	–	–	–	–	–
99	*Polydrusus atomarius* Ol.	○	○	–	–	–	–
100	*Polydrusus corruscus* Germ.	○	–	–	+	–	–
101	*Polydrusus cervinus* L.	○	–	–	–	–	–
102	*Polydrusus pilosus* Gredl.	○	+	–	–	–	–
103	*Polydrusus inustus* Germ.	–	○	–	+	+	–
104	*Polydrusus confluens* Steph.	○	○	–	–	–	○
105	*Polydrusus picus* F.	○	+	+	–	–	–
106	*Polydrusus sericeus* Schall.	○	●	●	–	–	–
107	*Polydrosus mollis* Ström	○	○	○	–	–	–
108	*Scythropus mustela* Herbst	○	–	–	–	–	–
109	*Liophloeus tessulatus* Müll.	○	○	–	–	–	○
110	*Sciaphobus squalidus* Gyll.	–	○	–	–	–	–
111	*Sciaphilus asperatus* Bonsd.	●	●	+	–	–	○
112	*Brachysomus setiger* Gyll.	–	○	+	–	–	○
113	*Brachysomus hirtus* Boh.	○	–	–	–	–	–
114	*Brachysomus echinatus* Bonsd.	●	●	●	–	–	–
115	*Barypithés pellucidus* Boh.	○	+	●	+	+	–
116	*Barypithes mollicomus* Ahr.	–	+	+	–	–	–
117	*Brachyderes incanus* L.	○	●	–	–	–	–
118	*Strophosomus melanogramus* Forst.	○	○	–	–	–	–
119	*Strophosomus capitatus* Deg.	●	●	+	–	+	○
120	*Strophosomus faber* Herbst	○	○	–	–	–	–
—	*Strophosomus refusus* Marsh.	?	–	–	–	–	–
121	*Barynotus obscurus* F.	○	○	–	–	–	○
122	*Sitona grisea* F.	○	○	○	–	–	○
123	*Sitona tibialis* Herbst	○	–	–	–	–	–
124	*Sitona lineata* L.	●	●	+	+	+	○
125	*Sitona suturalis* Steph.	●	–	–	–	–	○
126	*Sitona suturalis* ssp. *ononis* Sharp.	–	○	–	–	–	–
127	*Sitona sulcifrons* Thunb.	●	+	+	+	+	○
128	*Sitona puncticollis* Steph.	○	○	●	–	–	○
129	*Sitona flavescens* Mrsh.	●	●	+	+	+	–
130	*Sitona waterhousei* Walt.	○	–	+	–	–	–
131	*Sitona crinita* Herbst	○	+	–	–	–	–

1	2	3	4	5	6	7	8
132	*Sitona hispidula* F.	●	●	+	+	+	–
133	*Sitona cylindricollis* Fahrs.	○	○	–	–	–	○
134	*Sitona humeralis* Steph.	○	●	●	+	+	○
135	*Tropiphorus carinatus* Müll.	○	–	–	–	–	–
136	*Cyclodores pilosus* F.	○	○	–	–	–	–
137	*Chlorophanus graminicola* Schön.	○	–	–	–	–	–
138	*Chlorophanus viridis* L.	●	○	–	–	–	○
139	*Tanymecus palliatus* F.	○	●	+	–	–	○
140	*Larinus planus* F.	○	○	–	–	–	–
141	*Lixus paraplecticus* L.	○	–	○	–	–	○
142	*Lixus iridis* Ol.	○	○	–	–	–	–
143	*Lixus myagri* Ol.	○	–	–	–	–	–
144	*Lixus subtilis* Sturm	○	○	–	–	–	○
145	*Lixus cylindrus* L.	○	○	–	–	–	○
146	*Lixus algirus* L.	–	○	–	–	–	–
147	*Lixus bardanae* F.	○	○	–	–	–	–
148	*Cleonus glaucus* F.	○	–	–	–	–	–
149	*Cleonus nebulosus* L.	○	–	–	–	–	–
150	*Cleonus fasciatus* Müll.	○	○	○	–	–	○
151	*Cleonus tigrinus* Panz.	○	○	–	–	–	–
152	*Cleonus piger* Scop.	○	○	–	–	–	–
153	*Rhinocyllus conicus* Fröhl.	○	–	–	–	–	–
154	*Lepyrus palustris palustris* Scop.	○	–	–	–	–	–
155	*Lepyrus palustris asperatis* Schauf.	○	○	–	–	–	○
156	*Lepyrus capucinus* Schall.	○	○	○	–	–	–
157	*Hylobius abietis* L.	○	●	+	–	–	–
158	*Hylobius transversovittatus* Goeze	○	●	–	–	–	○
159	*Alophus triguttatus triguttatus* var. *vau* Schrank	○	●	+	+	–	○
160	*Hypera zoila* Scop.	○	●	●	+	+	–
161	*Hypera fasciculata* Herbst	○	○	–	–	–	–
162	*Hypera adspersa* F.	○	○	○	–	–	○
163	*Hypera rumicis* L.	●	○	–	–	–	○
164	*Hypera arundinis* Payk.	○	–	–	–	–	–
165	*Hypera contaminata* Herbst	○	○	–	–	–	–
166	*Hypera meles* F.	○	–	+	–	–	○
167	*Hypera nigrirostris* F.	○	●	–	+	–	○
168	*Hypera arator* L.	○	●	+	+	–	○
169	*Hypera pedestris* Payk.	○	–	–	–	–	○
170	*Hypera elongata* Payk.	○	–	–	–	–	–
171	*Hypera plantaginis* Deg.	●	●	–	–	–	○
172	*Hypera murina* F.	○	–	–	–	–	○
173	*Hypera variabilis* Herbst	○	●	●	+	–	○
174	*Hypera viciae* Gyll.	○	○	–	–	–	–
175	*Hypera trilineata* Mrsh.	○	○	–	–	–	–
176	*Limobius borealis* Payk.	–	○	–	–	–	–
177	*Gronops lunatus* F.	○	○	○	–	–	○
178	*Gronops inaequalis* Boh.	○	–	○	–	–	○
179	*Dryophthorus corticalis* Payk.	○	○	–	–	–	–
180	*Cossonus parallelepipedus* Herbst	○	○	○	–	–	○
181	*Cossonus linearis* F.	○	○	○	–	–	○

1	2	3	4	5	6	7	8
181	*Cossonus cylindricus* Sahlb.	○	○	○	–	–	○
183	*Pselactus spadix* Herbst	○	–	○	–	–	○
184	*Rhyncolus elongatus* Gyll.	○	○	–	–	–	–
185	*Rhyncolus ater* L.	○	–	–	–	–	–
186	*Rhyncolus punctatulus* Boh.	○	–	–	–	–	–
187	*Rhyncolus sculpturatus* Waltl.	○	–	–	–	–	–
188	*Rhyncolus porcatus* Germ.	○	○	–	–	–	–
189	*Rhyncolus exiguus* Boh.	–	○	–	–	–	○
190	*Rhyncolus truncorum* Germ.	○	○	○	–	–	–
191	*Rhyncolus cylindrus* Boh.	○	○	–	–	–	–
192	*Rhyncolus turbatus* Schönh.	○	○	–	–	–	○
193	*Dicranthus elegans* F.	○	–	–	–	–	○
194	*Bagous cylindrus* Payk.	○	–	○	–	–	○
195	*Bagous binodulus* Herbst	○	–	–	–	–	–
196	*Bagous nodulosus* Gyll.	○	–	○	–	–	○
197	*Bagous limosus* Gyll.	○	–	–	–	–	–
198	*Bagous subcarinatus* Gyll.	○	–	○	–	–	–
199	*Bagous frit* Herbst	○	–	–	–	–	–
200	*Bagous lutulosus* Gyll.	–	–	○	–	–	–
201	*Bagous tempestivus* Herbst	○	–	–	–	–	–
202	*Bagous lutosus* Gyll.	○	–	–	–	–	–
203	*Bagous lutulentus lutulentus* Gyll.	○	–	–	–	–	–
204	*Bagous lutulentus robustus* Ch. Bris.	○	–	–	–	–	–
205	*Bagous glabrirostris* Herbst	○	○	–	–	–	○
206	*Hydronomus alismatis* Mrsh.	○	–	–	–	–	○
207	*Tanysphyrus lemnae* Payk.	○	–	○	–	–	–
208	*Dorytomus taeniatus* F.	○	–	–	–	–	○
209	*Dorytomus dejeani* Fst.	–	–	○	–	–	–
210	*Dorytomus reussi* Form.	○	–	–	–	–	–
211	*Dorytomus affinis* Payk.	○	–	–	–	–	○
212	*Dorytomus salicis* Walt.	○	–	–	–	–	–
213	*Dorytomus puberulus* Boh.	○	–	–	–	–	–
214	*Dorytomus validirostris* Gyll.	○	○	○	–	–	○
215	*Dorytomus minutus* Gyll.	○	○	–	–	–	○
216	*Dorytomus nebulosus* Gyll.	○	○	–	–	–	○
217	*Dorytomus flavipes* Panz.	○	○	–	–	–	○
218	*Dorytomus schoenherri* Fst.	○	○	–	–	–	○
219	*Dorytomus longimanus* Forst.	○	○	–	–	–	○
220	*Dorytomus tremulae* Payk.	○	○	●	–	–	○
221	*Dorytomus tortrix* L.	○	–	–	–	–	–
222	*Dorytomus filirostris* Gyll.	○	●	●	–	–	○
223	*Dorytomus hirtipennis* Bed.	○	–	–	–	–	–
224	*Dorytomus melanophthalmus* Payk.	○	○	–	+	–	○
225	*Dorytomus villosulus* Gyll.	○	○	○	–	–	○
—	*Dorytomus salicinus* Gyll.	?	–	–	–	–	–
226	*Notaris bimaculatus* F.	○	○	–	–	–	○
227	*Notaris granulipennis* Tourn.	○	○	–	–	–	–
228	*Notaris acridulus acridulus* L.	○	○	–	–	–	○
229	*Notaris maerkeli* Boh.	○	–	–	–	–	–
230	*Notaris scirpi* F.	○	–	–	–	–	○
231	*Thryogenes fiorii* Zumpt.	○	–	–	–	–	–

1	2	3	4	5	6	7	8
232	*Thryogenes nereis* Payk.	○	–	–	–	–	–
233	*Thryogenes festucae* Herbst	○	–	–	–	–	○
234	*Thryogenes scirrhosus* Gyll.	–	○	–	–	–	–
235	*Grypus equiseti* F.	○	●	–	–	–	○
236	*Grypus brunnirostris* F.	○	○	–	–	–	–
237	*Pseudostyphlus pilumnus* Gyll.	○	–	–	–	–	○
—	*Orthochaetes penicyllus* Gyll.	?	–	–	–	–	–
238	*Smicronyx smreczynskii* Sol.	○	–	–	–	–	–
239	*Smicronyx jungermanniae* Reich	○	○	–	–	–	○
240	*Ellescus scanicus* Payk.	○	○	○	–	–	○
241	*Ellescus bipunctatus* L.	○	–	–	–	–	–
242	*Acalyptus carpini* Herbst	○	–	–	–	–	–
243	*Tychius quinquepunctatus* L.	○	○	–	–	–	–
244	*Tychius polylineatus* Germ.	–	○	–	–	–	–
245	*Tychius venustus* F.	○	–	–	–	–	–
246	*Tychius kiesenwetteri* Tourn.	○	–	–	–	–	–
247	*Tychius junceus* Reich	○	●	+	–	+	○
248	*Tychius aureolus femoralis* Ch. Bris.	○	–	–	–	–	–
249	*Tychius medicaginis* Ch. Bris.	○	○	–	–	–	–
250	*Tychius haematopus* Gyll.	○	–	–	–	–	–
251	*Tychius crassirostris* Kirsch.	○	–	–	–	–	–
252	*Tychius tomentosus* Herbst	○	–	–	–	–	–
253	*Tychius pumilus* Ch. Bris.	○	–	–	–	–	–
254	*Tychius meliloti* Steph.	–	+	–	–	–	–
255	*Tychius lineatulus* Steph.	○	●	–	–	–	–
256	*Miccotrogus picirostris* F.	●	+	+	+	+	–
257	*Sibinia sodalis* Germ.	○	–	–	–	–	–
258	*Sibinia unicolor* Fahr.	○	–	–	–	–	–
259	*Sibinia subelliptica* Desbr.	○	–	–	–	–	–
260	*Sibinia primita* Herbst	○	–	○	–	–	○
261	*Sibinia variata* Gyll.	○	○	–	–	–	–
262	*Sibinia phalerata* Stev.	○	–	–	–	–	–
263	*Sibinia vittata* Germ.	○	○	–	–	–	–
264	*Sibinia pellucens* Scop.	○	–	–	–	–	–
265	*Sibinia viscariae* L.	○	–	–	–	–	–
266	*Sibinia potentillae* Germ.	●	–	+	–	–	–
267	*Anthonomus pomorum* L.	○	○	+	–	–	○
268	*Anthonomus humeralis* Panz.	○	–	–	–	–	–
269	*Anthonomus kirschi* Desbr.	○	–	–	–	–	–
270	*Anthonomus ulmi* Deg.	○	○	○	–	–	–
271	*Anthonomus pedicularius* L.	–	○	–	–	–	–
272	*Anthonomus rubi* Herbst	○	●	○	–	–	–
273	*Anthonomus varians* Payk.	○	○	–	–	–	–
274	*Furcipus rectirostris* L.	○	●	+	–	–	○
275	*Brachonyx pineti* Payk.	○	●	–	–	–	○
276	*Bradybatus kellneri* Bach	○	○	○	–	○	○
277	*Curculio venosus* Grav.	○	○	–	–	–	–
278	*Curculio villosus* F.	○	○	–	–	–	–
279	*Curculio nucum* L.	–	○	–	–	–	–
280	*Curculio glandium* Mrsh.	●	○	–	–	–	○
281	*Curculio cerasorum* Payk.	○	–	–	–	–	–

1	2	3	4	5	6	7	8
282	*Curculio rubidus* Gyll.	○	+	○	+	–	–
283	*Curculio crux* F.	○	–	–	–	–	○
284	*Curculio salicivorus* Payk.	○	●	–	–	–	○
285	*Curculio pyrrhoceras* Mrsh.	+	●	–	–	–	–
286	*Pissodes piceae* Ill.	○	–	–	–	–	–
287	*Pissodes notatus* F.	○	–	–	–	–	–
288	*Pissodes pini* L.	○	○	–	–	–	–
289	*Pissodes validirostris* Gyll.	○	–	–	–	–	–
290	*Magdalis nitidipennis* Boh.	○	–	–	–	–	○
291	*Magdalis ruficornis* L.	–	○	–	–	–	○
292	*Magdalis flavicornis* ab. *fuscicornis* Desbr.	○	○	–	–	–	–
293	*Magdalis barbicornis* Latr.	○	–	–	–	–	–
294	*Magdalis cerasi* L.	○	○	–	–	–	–
295	*Magdalis exarata* Ch. Bris	○	–	–	–	–	–
296	*Magdalis armigera* Geoffr.	–	○	–	–	–	○
297	*Magdalis carbonaria* L.	○	–	–	–	–	–
298	*Magdalis memnonia* Gyll.	○	–	–	–	–	–
299	*Magdalis linearis* Gyll.	○	–	–	–	–	–
300	*Magdalis phlegmatica* Herbst	○	–	–	–	–	–
301	*Magdalis violacea* L.	–	–	–	–	–	○
302	*Magdalis duplicata* Germ.	○	–	–	–	–	–
303	*Magdalis frontalis* Gyll.	○	–	–	–	–	–
304	*Sphenophorus striatopunctatus* Goeze	○	○	–	–	–	–
305	*Sitophilus granarius* L.	○	–	–	–	–	○
306	*Sitophilus oryzae* L.	–	–	–	–	–	○
307	*Gasterocercus depressirostris* F.	○	○	–	–	–	–
308	*Acales camelus* F.	–	●	–	–	–	–
309	*Acales echinatus* Germ.	○	○	–	–	–	–
310	*Acallocrates denticollis* Germ.	○	○	–	–	–	–
311	*Baris artemisiae* Herbst	○	●	–	+	–	–
312	*Baris spitzyi* Hochh.	○	○	–	–	–	–
313	*Baris analis* Ol.	○	○	–	–	–	–
314	*Baris laticollis* Mrsch.	○	○	–	–	–	○
315	*Baris lepidii* Germ.	○	○	●	–	–	–
316	*Baris coerulescens* Scop.	○	○	○	–	–	○
317	*Baris chlorizans* Germ.	○	○	–	–	–	○
318	*Limnobaris t-album* var. *pusio* Boh.	○	○	–	–	–	–
319	*Limnobaris pilistriata* Steph.	○	–	○	–	–	–
320	*Coryssomerus capucinus* Beck	○	○	●	+	–	–
321	*Mononychus punctumalbum* Herbst	○	–	–	–	–	○
322	*Litodactylus leucogaster* Mrsh.	○	–	–	–	–	○
323	*Phytobius comari* Herbst	○	○	–	–	–	–
324	*Phytobius waltoni* Boh.	○	○	–	–	–	○
325	*Phytobius canaliculatus* Fahr.	○	–	–	–	–	–
326	*Phytobius quadrituberculatus* F.	○	–	○	+	–	○
327	*Phytobius velaris* Gyll.	○	○	○	–	–	–
328	*Phytobius quadricornis* Gyll.	○	–	–	–	–	–
329	*Phytobius granatus* Gyll.	○	–	–	–	–	–
330	*Phytobius quadrinodosus* Gyll.	○	–	○	–	–	–
331	*Rhinoncus perpendicularis perpendicularis* Reich	○	●	●	+	–	○

1	2	3	4	5	6	7	8
332	*Rhinoncus perpendicularis rufofemoratus* Schultze	○	–	–	–	–	–
333	*Rhinoncus gramineus* F.	○	–	–	–	–	○
334	*Rhinoncus pericarpius* L.	●	+	+	–	+	○
335	*Rhinoncus bruchoides* Herbst	○	●	●	–	–	○
336	*Rhinoncus castor* F.	●	+	+	+	–	–
337	*Marmaropus besseri* Gyll.	○	–	–	–	–	–
338	*Homorosoma validirostre* Gyll.	○	–	–	–	–	○
339	*Amalus haemorrhous* Herbst	○	●	+	+	+	○
340	*Amalorrhynchus melanarius* Steph.	○	○	–	–	–	○
341	*Poophagus sisimbrii* F.	○	○	○	–	–	○
342	*Poophagus hopffgarteni* Tourn.	○	–	–	–	–	–
343	*Tapinotus sellatus* F.	○	●	–	–	–	–
344	*Coeliodes dryados* Gmel.	○	○	–	–	–	–
345	*Coeliodes cinctus* Geoffr.	○	○	–	–	–	–
346	*Micrelus ericae* Gyll.	○	–	–	–	–	–
347	*Zacladus affinis* Payk.	●	○	–	–	–	○
348	*Auleutes epilobii* Payk.	–	○	–	–	–	○
349	*Ceutorhynchus cochleariae* Gyll.	○	○	–	–	–	–
350	*Ceutorhynchus constrictus* Mrsh.	–	○	+	–	–	–
351	*Ceutorhynchus plumbeus* Ch. Bris.	○	–	–	–	–	–
352	*Ceutorhynchus griseus* Ch. Bris.	○	–	–	–	–	–
353	*Ceutorhynchus pleurostigma* Mrsh.	○	–	+	–	–	–
354	*Ceutorhynchus dubius* Ch. Bris.	○	○	–	–	–	–
355	*Ceutorhynchus puncticollis* Boh.	○	○	–	–	–	○
356	*Ceutorhynchus rapae* Gyll.	–	–	+	–	–	○
357	*Ceutorhynchus assimilis* Payk.	●	●	●	+	+	○
358	*Ceutorhynchus inaffectatus* Gyll.	–	–	○	–	–	–
359	*Ceutorhynchus syrites* Germ.	○	○	–	–	–	–
360	*Ceutorhynchus sophiae* Steven	○	○	–	–	–	–
361	*Ceutorhynchus scapularis* Gyll.	○	○	–	–	–	–
362	*Ceutorhynchus contractus* Mrsh.	○	○	●	+	+	○
363	*Ceutorhynchus erysimi* F.	●	●	●	+	+	–
364	*Ceutorhynchus ignitus* Germ.	○	–	–	–	–	○
—	*Ceutorhynchus canaliculatus* Ch. Bris.	?	–	–	–	–	?
365	*Ceutorhynchus pectoralis* Wse.	–	–	+	–	–	–
366	*Ceutorhynchus atomus* Boh.	–	○	–	–	–	–
367	*Ceutorhynchus hirtulus* Germ.	○	○	–	–	–	–
368	*Ceutorhynchus sulcicollis* Payk.	○	○	○	–	–	○
369	*Ceutorhynchus picitarsis* Gyll.	○	–	–	–	–	○
370	*Ceutorhynchus quadridens* Panz.	○	+	●	+	–	○
371	*Ceutorhynchus aeneicollis* Germ.	–	○	–	–	–	○
372	*Ceutorhynchus suturalis* F.	–	○	○	–	–	○
373	*Ceutorhynchus denticulatus* Schrank	○	○	–	–	–	○
374	*Ceutorhynchus pollinarius* Forst.	–	+	–	–	–	○
375	*Ceutorhynchus maculaalba* Herbst	○	○	–	–	–	–
376	*Ceutorhynchus marginatus* Payk.	–	○	–	–	–	–
377	*Ceutorhynchus punctiger* Gyll.	○	●	●	+	+	–
378	*Ceutorhynchus viduatus* Gyll.	○	○	–	–	–	○
379	*Ceutorhynchus pubicollis* Gyll.	○	–	–	–	–	–
380	*Ceutorhynchus arquatus* Herbst.	○	●	–	–	–	

1	2	3	4	5	6	7	8
381	*Ceutorhynchus melanostictus* Mrsh.	○	○	–	–	–	–
382	*Ceutorhynchus rugulosus* Herbst.	–	○	–	–	–	○
383	*Ceutorhynchus figuratus* Gyll.	○	○	–	–	–	–
384	*Ceutorhynchus triangulum* Boh.	●	○	–	–	–	–
385	*Ceutorhynchus edentulus* Schultze	○	○	–	–	–	–
386	*Ceutorhynchus litura* F.	○	–	–	–	–	–
—	*Ceutorhynchus euphorbiae* Ch. Bris.	?	–	–	–	–	–
387	*Ceutorhynchus venedicus* Wse.	○	–	–	–	–	–
388	*Ceutorhynchus pallidicornis* Ch. Bris.	–	○	–	–	–	–
389	*Ceutorhynchus trisignatus* Gyll.	○	○	–	–	–	–
390	*Ceutorhynchus abbreviatulus* F.	○	○	–	–	–	○
391	*Ceutorhynchus albosignatus* Gyll.	○	–	–	–	–	–
392	*Ceutorhynchus asperifoliarum* Gyll.	○	○	–	–	–	○
393	*Ceutorhynchus cruciger* Herbst	○	○	–	–	–	–
394	*Ceutorhynchus javeti* Ch. Bris.	○	○	–	–	–	–
395	*Ceutorhynchus symphyti* Bed.	○	○	–	–	–	○
396	*Ceutorhynchus geographicus* Goeze	○	○	–	–	–	–
397	*Ceutorhynchus florals* Payk.	●	●	+	+	–	○
398	*Ceutorhynchus posthumus* Germ.	○	○	○	–	–	–
399	*Ceutorhynchus pulvinatus* Gyll.	○	○	–	–	–	○
400	*Ceutorhynchus rhenanus* Schultze	○	–	–	–	–	–
401	*Ceutorhynchus pyrrhorhynchus* Mrsh.	○	○	–	–	+	○
402	*Ceutorhynchus hampei* Ch. Bris.	○	○	–	–	–	○
403	*Ceutorhynchus nigrinus* Mrsh.	–	○	–	–	–	–
404	*Ceuthorhynchidius barnevillei* Grenier	–	+	+	–	+	–
405	*Ceuthorhynchidius troglodytes* F.	○	●	+	+	+	–
406	*Stenocarus fuliginosus* Mrsh.	○	○	○	–	–	○
407	*Stenocarus cardui* Herbst	○	○	○	–	–	○
408	*Cidnorhinus quadrimaculatus* L.	●	●	+	–	–	–
409	*Coeliastes lamii* F.	●	–	–	–	–	–
410	*Orobitis cyaneus* L.	○	–	–	–	–	–
411	*Nanophyes marmoratus* Goeze	●	–	–	–	–	–
412	*Nanophyes sahlbergi* Sahlb.	○	–	–	–	–	–
413	*Nanophyes globulus* Germ.	○	○	–	–	–	–
414	*Mecinus collaris* Germ.	–	○	–	–	–	–
415	*Mecinus janthinus* Germ.	○	○	–	–	–	–
416	*Mecinus pyraster* Herbst	○	○	○	–	–	○
417	*Gymnaetron pirazzolii* Stierl.	○	–	–	–	–	–
418	*Gymnaetron labile* Herbst	○	●	○	–	–	○
419	*Gymnaetron intericum* Gyll.	○	–	–	–	–	–
420	*Gymnaetron pascuorum* Gyll.	●	–	○	–	–	–
421	*Gymnaetron rostellum* Herbst	○	○	○	–	–	–
422	*Gymnaetron melanarium* Germ.	+	–	–	–	–	–
423	*Gymnaetron villosulum* Gyll.	○	○	–	–	–	–
424	*Gymnaetron beccabungae* L.	○	○	○	–	–	–
425	*Gymnaetron veronicae* Germ.	○	○	–	–	–	–
426	*Gymnaetron asellus* Grav.	○	–	–	–	–	–
427	*Gymnaetron tetrum* F.	○	–	–	–	–	–
428	*Gymnaetron antirrhini* Payk.	○	○	–	–	–	○
—	*Gymnaetron melas* Boh.	?	–	–	–	–	–
429	*Gymnaetron netum* Germ.	○	○	–	–	–	–

1	2	3	4	5	6	7	8
430	*Gymnaetron collinum* Gyll.	○	–	–	–	–	–
431	*Gymnaetron bipustulatum* Rossi	○	–	–	–	–	–
432	*Gymnaetron linariae* Panz.	○	○	–	–	–	–
433	*Miarus campanulae* L.	○	○	–	–	–	
434	*Miarus graminis* Gyll.	○	○	–	–	–	–
435	*Miarus distinctus* Boh.	○	–	–	–	–	–
436	*Miarus micros* Germ.	○	–	–	–	–	–
437	*Cionus alauda* Herbst	○	◔	–	–	–	–
438	*Cionus tuberculosus* Scop.	○	–	–	–	–	–
439	*Cionus scrophulariae* L.	○	○	–	–	–	–
440	*Cionus hortulanus* Geoffr.	○	–	–	–	–	–
—	*Cionus longicollis montanus* Wingelm.	–	–	–	–	–	?
441	*Cionus clairvillei* Boh.	○	–	–	–	–	–
442	*Cionus olivieri* Rosensch.	○	○	–	–	–	–
443	*Cionus olens* F.	○	–	–	–	–	–
444	*Cionus solani* F.	○	○	–	–	–	–
445	*Stereonychus fraxini* Deg.	○	○	–	–	–	–
446	*Anoplus plantaris* Naez.	○	–	○	–	–	–
447	*Rhynchaenus quercus* L.	●	–	–	–	–	–
448	*Rhynchaenus pilosus* F.	●	–	–	–	–	–
449	*Rhynchaenus avellanae* Donov.	○	○	–	–	–	–
450	*Rhynchaenus rusici* Herbst	○	–	–	–	–	–
451	*Rhynchaenus decoratus* Germ.	○	–	–	–	–	–
—	*Rhynchaenus rufitarsis* Germ.	?	–	–	–	–	–
452	*Rhynchaenus salicis* L.	○	–	–	–	–	–
453	*Rhynchaenus stigma* Germ.	○	○	–	–	–	–
454	*Rhynchaenus populi* F.	○	○	–	–	–	–
455	*Rhynchaenus foliorum* Muell.	○	○	–	–	–	○
456	*Rhynchaenus angustifrons* West.	○	–	–	–	–	○
457	*Rhamphus pulicarius* Herbst	○	○	–	–	–	–
458	*Rhamphus oxyacanthae* Mrsh.	–	–	–	–	–	○

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RYJKOWCE (*COLEOPTERA, CURCULIONIDAE*) WARSZAWY I MAZOWSZA

STRESZCZENIE

Praca jest próbą podsumowania danych dotyczących fauny ryjkowców występujących na Mazowszu i w Warszawie. Przedstawiono skład gatunkowy *Curculionidae* tych terenów oraz wykazano wpływ presji urbanizacyjnej na skład gatunkowy fauny ryjkowców w aglomeracji miejskiej.

W tabeli 6, przedstawiającej skład gatunkowy, znalazły się przede wszystkim dane zaczerpnięte z literatury. Wzięto pod uwagę prace następujących autorów: Bartoszyńskiego, Osterloffa, Smreczyńskiego i Tenenbauma. Zostały one uzupełnione wynikami badań prowadzonych w Instytucie Zoologii PAN w Warszawie w latach 1974—1976.

Na terenie Mazowsza i Warszawy stwierdzono występowanie 458 gatunków ryjkowców, w tym 346 w samej Warszawie. W suburbiach stwierdzono 292 gatunki, w parkach 139, na terenie osiedli 48, a w centrum miasta 33 gatunki. Z tego wynika, że w miarę wzrostu presji antropogenicznej liczba gatunków *Curculionidae* maleje.

Przeprowadzono analizę zoogeograficzną fauny ryjkowców występujących na terenie Mazowsza i Warszawy, wyróżniając 10 elementów zoogeograficznych. Wykazano, że w mieście zwiększa się udział procentowy gatunków o szerokich zasięgach geograficznych: kosmopolitycznych, holarktycznych i palearktycznych.

Podział ryjkowców na elementy ekologiczne przeprowadzony został na podstawie ich związku ze środowiskiem. Wykazano zarówno w Warszawie jak i na Mazowszu największy udział procentowy gatunków łąkowych i pastwiskowych, zwiększający się w miarę wzrostu presji urbanizacyjnej. Dzieje się to kosztem gatunków leśnych, których udział procentowy maleje w miarę zwiększania się presji antropogenicznej. Udział gatunków charakterystycznych dla innych zbiorowisk roślinnych jest niewielki.

Analizując powiązania siedliskowe ryjkowców występujących na badanych terenach wykazano, że najdogodniejsze warunki rozwoju w mieście znajdują gatunki rozwijające się w glebie, a następnie gatunki żyjące w warstwie runi.

Ryjkowce występujące na terenie Mazowsza i Warszawy podzielono ze względu na typ fagizmu na polifagi, oligofagi i monofagi. Stwierdzono, że w miarę zwiększania się presji urbanizacyjnej udział procentowy polifagów wzrasta, udział oligofagów utrzymuje się mniej więcej na tym samym poziomie, natomiast monofagów — wyraźnie spada.

ДОЛГОНОСИКИ (*COLEOPTERA, CURCULIONIDAE*) ВАРШАВЫ И МАЗОВИИ

РЕЗЮМЕ

На территории Мазовии и Варшавы констатировали 458 видов *Curculionidae* в общем. На территории варшавской агломерации 346 видов, в пригородах 292 вида, в парках 139 видов, на территории жилых районов 48 видов, а в центре города только 33 вида. В границах города возрастает процентное соотношение видов, имеющих широкий зоогеографический ареал, таких как космополитические, голарктические и палеарктические.

Как в Мазовии, так и в Варшаве встречается больше всего луговых и пасбищных видов. А процентное содержание этих видов возрастает по мере роста урбанизационного пресса.

Наиболее благоприятные условия для развития в городе находят виды, которые развиваются в почве и живут в ярусе травы. Доказано, что содержание видов-монофагов падает на территории города по мере роста урбанизационного пресса, а содержание полифагов возрастает. Содержание олиготрофических видов не меняется, а одновременно они являются наиболее многочисленными.