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DOLICHOPODIDAE (*DIPTERA*) OF WARSAW AND MAZOVIA

ABSTRACT

There are 34 species of *Dolichopodidae* known from Warsaw and 87 species known from Mazovia. The urban habitat is dominated by the species with large geographical ranges such as Palaearctic and Euro-Siberian. A vertical zonation has been noted in the distribution of these flies, thus they have been classified into the species inhabiting trees, either tree crowns or the herb layer, or both. The *Dolichopodidae* communities living in the town are mostly made up of the species classified as abundant and numerous. These species also occur in the centre of the town.

INTRODUCTION

In Central Europe, the family *Dolichopodidae* consists of about 500 species. In Poland these flies are little known, 242 species being recorded so far. It should be expected that the number of species will increase rapidly with increasing knowledge of this group.

The objective of the present paper is to sum up the present knowledge of the occurrence of *Dolichopodidae* in Mazovia and Warsaw, and to make a zoogeographical and ecological analysis of this group on the basis of the materials collected in recent studies carried out at the Institute of Zoology, PAS, in Warsaw and surroundings in 1974—1978.

The material obtained in these studies is rather abundant and representative. The quantitative methods used to sample *Dolichopodidae* are considered as adequate [1]. Both the sweeping method used for sampling in the herb layer and the Moericke's trap method used in tree crowns made it possible to analyse the vertical distribution of particular species.

SPECIES COMPOSITION

So far only 63 species of *Dolichopodidae* were recorded in Mazovia [2]. This list is now supplemented by 24 species not noted earlier, thus it contains 87 species. This figure is far from the expected number of species in this area. It is likely to involve about 50% of all the species occurring there. This group of flies has not been adequatly studied, neither in the

Mazovian Lowland nor in Poland. Almost all data go back to the past century and are dispersed in check-lists involving flies of many families living in a given area.

There is a relatively large number of 70 *Dolichopodidae* species known from Warsaw, which results from the fact that many localities situated near Warsaw have been included into the town. Since the list prepared by Sznabl [2] does not specify the location of particular species within Warsaw, the present analysis of *Dolichopodidae* is based on the author's own materials collected in the recent five years.

In urban green areas of Warsaw, 34 *Dolichopodidae* species have been recorded. As many as 33 species inhabited parks, 16 species were found in green areas of housing estates, and 20 species in squares of the centre and in green areas of housing estates.

Since *Dolichopodidae* are hygrophilous flies, urban habitats do not provide suitable conditions for them. Significant overdrying and overheating of these habitats, particularly in the centre and in housing estates, form an impassable barrier for many species. In this relation it is easy to understand why a relatively large number of species occur in parks. Humid parks covered with old tree stands are the refuges of *Dolichopodidae* in urban habitats. A similar role for the whole Warsaw area is performed by larger suburban woods or large forest complexes, like the Kampinos forest or the Kabackie forest.

The *Dolichopodidae* of Warsaw are dominated by such species as *Dolichopus plumipes*, *D. nitidus*, *Chrysotus gramineus*, *Hercostomus aerosus*, *Medetera micacea*, *M. pallipes*, and others.

ZOOGEOGRAPHICAL ANALYSIS

The *Dolichopodidae* of Mazovia are dominated by the European element (62%). The proportion of this element is also high in urban green areas, particularly in parks (Table 1). Most *Dolichopodidae* are closely associated with the biome of deciduous forests.

The proportion of the Palaearctic element in the *Dolichopodidae* of Mazovia reaches only 16% and slightly increases in Warsaw (Table 1), mostly in green areas of housing estates and in the centre.

Only a small percentage of the species occurring in Poland are associated with the biome of taiga. The proportion of the Euro-Siberian element is only 12% in Mazovia but markedly increases in urban areas.

Some of the species recorded in Mazovia occur not only in Europe but also in the Caucasus and the forest steppe regions. The proportion of the South-Euro-Siberian element in the *Dolichopodidae* of Mazovia is small (8%) and even lower in urban green areas (Table 1).

Table 1. Proportions of zoogeographical elements in *Dolichopodidae* 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	%
Holarctic	2	2.0	—	—	—	—	—	—	—	—	—	—
Palaearctic	14	16.0	6	24.0	6	18.0	5	15.0	5	31.0	5	25.0
Euro-Siberian	10	12.0	3	12.0	5	15.0	5	15.0	4	25.0	4	20.0
South-Euro-Siberian	7	8.0	4	16.0	2	5.0	2	6.0	1	6.0	1	5.0
European	54	62.0	12	48.0	21	62.0	21	64.0	6	38.0	10	50.0
Total number of species	87		25		34		33		16		20	

Table 2. Proportions of groups with different vertical distribution in *Dolichopodidae* of Warsaw and non-urban habitats of Mazovia (N — number of species)

Plant layer	Mazovia		Warsaw									
			Suburbs		Urban green areas							
					Total		Parks		Housing estates		Town centre	
	N	%	N	%	N	%	N	%	N	%	N	%
Tree crowns	21	24.0	11	44.0	13	38.0	13	39.5	3	19.0	6	30.0
Herbs	7	8.0	4	16.0	7	21.0	7	21.0	4	25.0	4	20.0
Herbs and tree crowns	18	21.0	10	40.0	14	41.0	13	39.5	9	56.0	10	50.0
Unknown	41	47.0	—	—	—	—	—	—	—	—	—	—
Total	87		25		34		33		16		20	

The proportion of the Holarctic element is very low in Mazovia (2%), and in urban habitats it has not been recorded so far.

The *Dolichopodidae* of Warsaw form a part of the *Dolichopodidae* of Mazovia. All species recorded in the town are also known from the Mazovian Lowland. In Warsaw their species composition is simplified as a result of urban pressure.

There are no data indicating that these flies were brought to Poland by man from other geographical regions. Thus it may be suggested that the *Dolichopodidae* occurring in both the town and the whole Mazovia are native of this region.

ECOLOGICAL ANALYSIS

HABITAT PREFERENCE

Flies of the family *Dolichopodidae* inhabiting Mazovia have rather similar habitat requirements. The species associated with the coast or lake margins, such as *Aphrosylinae* spp. will not be discussed here. The analysis will be limited to the species associated with shady broad-leaved forests and margins of small water bodies, characteristic of the fauna of Mazovia.

Generally, all *Dolichopodidae* are highly hygrophilous and they avoid large, insolated open spaces. Adult insects usually occur on shaded leaves of shrubs and herbs or in tree crowns. Many species can be met along river and stream banks.

Particular species of *Dolichopodidae* have an interesting vertical distribution in the habitat. Since they were sampled in tree crowns and in the herb layer at the same time, it has been shown that some of the species inhabiting urban areas occur mostly in tree crowns (about 38%), other prefer the herb layer (about 21%) or occur in the two layers in equal amounts (about 41% of the species) (Table 2).

The species occurring high in tree crowns include *Dolichopus plumipes*, *D. nitidus*, *Xanthochlorus tenellus*, *X. ornatus*, *Chrysotimus molliculus*, *Neurogona pallida*, *N. quadrifasciata*, *Medetera diadema*, and others.

The majority of the species occurring in the herb layer are characterized by small body sizes. They include *Medetera micacea*, *Chrysotus femoratus*, *Ch. laesus*, *Sciopus longulus*, *Asyndetus latifrons*, and others.

The species evenly distributed in the two layers consist of *Hercostomus aerosus*, *H. nigriplantis*, *Dolichopus latelimbatus*, *Medetera jacula*, *M. pallipes*, *Campsicnemus lumbatus*, *C. armatus*, *Chrysotus neglectus*, and others.

FOOD HABITS

Dolichopodidae are rather a uniform group as far as their feeding habits are concerned. Generally, their larvae live in moist soils rich in

soil animals, and they are predators. Their prey consist of small soil animals like *Collembola*, acarids, and larvae of different insects. Some of the predatory larvae of the genus *Medetera* Fisch. are adapted to life in the galleries of bark beetles and feed on larvae of these harmful pests. Only a small part of *Dolichopodidae* larvae are phytophages feeding on tissues of herbaceous plants. This group includes species of the genus *Thrypticus* Gerst. and some species of the genus *Campsicnemus* Walk. These phytophagous flies were lacking, however, in the collected material.

All adult *Dolichopodidae* are considered to be predators. They generally prey upon other small insects living in tree crowns and in the herb layer, such as aphids, small dipterans, and hymenopterans. Little is known so far on food specialization of particular species. Generally, they are assumed to be polyphagous but further studies are needed to get a deeper insight into their diet and trophic interactions within a biocoenosis.

ECOLOGICAL ROLE

The role of particular *Dolichopodidae* species in coenotic processes can be illustrated by the analysis of their numerical occurrence. For this purpose the whole material has been classified into several categories of abundance (Table 3).

The number of species abundantly occurring in particular habitats is identical or similar for Mazovia, suburban areas and urban green areas. Here such species belong as *Medetera micacea*, *Chrysotus laesus*, *Ch. gramineus*, *Ch. femoratus*, *Ch. neglectus*, *Dolichopus plumipes*, and *Xanthochlorus tenellus*. The last species mentioned has not been caught in green areas of housing estates and in the centre of the town. The species of the genus *Xanthochlorus* Loew are particularly hygrophilous, thus they cannot live in the town, except for larger tree stands in parks.

In relation to the decrease in the total number of species in green areas of housing estates and in the centre of the town, the proportion of abundant species increased in *Dolichopodidae* communities of these habitats (Table 3).

In the group of numerous species, the number of species dropped along the gradient from Mazovia, through the suburbs, urban parks and green areas of housing estates, to the centre of the town where only six species were recorded. This group of species includes *Dolichopus nitidus*, *D. longicornis*, *Hercostomus aerosus*, *Chrysotimus molliculus*, *Medetera pallipes*, and others. The proportion of these species markedly increased with growing urban pressure.

Similar relationships were observed for the group of scarce species (Table 3). Flies belonging to this group include *Hercostomus nigriplantis*, *Dolichopus campestris*, *Neurogona pallida*, *Sciopus longulus*, and others.

A little different situation was found for the group of sporadic species.

Table 3. Proportions of groups with different abundances in *Dolichopodidae* 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	%
Abundant	7	8.0	7	28.0	7	21.0	7	21.5	6	38.0	6	30.0
Numerous	10	11.0	8	32.0	9	26.0	9	27.0	7	44.0	6	30.0
Scarce	13	15.0	8	32.0	10	29.0	9	27.0	2	12.0	6	30.0
Sporadic	13	15.0	2	8.0	7	21.0	7	21.5	1	6.0	2	10.0
Unknown	44	51.0	—	—	—	—	—	—	—	—	—	—

The number of these species was lower by half in urban parks as compared with Mazovia, and sharply dropped in green areas of housing estates and in the centre of the town. Also the proportion of these species decreased in the last two urban habitats (Table 3). The group of sporadic species includes *Dolichopus latilimbatus*, *Hercostomus vivax*, *Systenus leucurus*, *Neurogona erichsoni*, *Porphyrops communis*, and others.

Since the bionomics of this fly family is poorly known, it is difficult to characterize the expansiveness of particular species. At the present state of knowledge it is not possible to distinguish the expansive or recessive species.

Also little is known of synanthropization processes within this interesting family or flies. No species is even considered as hemisynanthropic, though it is known that they commonly inhabit ecosystems transformed by man, such as meadows or orchards.

CONCLUSIONS

The species composition of *Dolichopodidae* is little known in Poland. So far 242 species have been recorded, which probably accounts for about 65% of their actual number. There are 87 species recorded in Mazovia and 70 species within administrative boundaries of Warsaw, while only 34 in urban green areas of Warsaw. Since *Dolichopodidae* belong to hygrophilous species, their occurrence in the town is limited to humid parks and shady clumps of trees or shrubs in the centre.

The *Dolichopodidae* communities of Mazovia and Warsaw are dominated by the European element. The next is the Palaearctic element and then Euro-Siberian and South-Euro-Siberian (Table 1). There is a tendency towards an increase in the proportion of the species with large geographical ranges in the habitats subjected to heavy urban pressure.

In addition, the dominant species of urban habitats are generally characterized by large geographical ranges. And so *Dolichopus plumipes*, *D. nitidus*, and *Hercostomus aerosus* belong to Palaearctic species, and *Medetera micacea*, *Dolichopus longicornis*, and *Chrysotus femoratus* are Euro-Siberian species.

An analysis of the vertical distribution of these flies in urban green areas shows that 38% of the species occur in crowns of trees, 21% in the herb layer, and about 41% are almost equally abundant in the two layers.

The greatest changes in *Dolichopodidae* of urban habitats as compared with Mazovia concern the number of species living in tree crowns. In urban parks only 13 such species were recorded, in the centre and green areas of housing estates less than a half of this number. Instead, the number of species associated with the herb layer in urban green areas

is the same as in Mazovia, and only two species are lacking in green areas of housing estates and in the centre of the town (Table 2).

All the *Dolichopodidae* species recorded are predators as larvae and adults. Adult insects prey upon other small arthropods. Larvae, in addition, feed on oligochaetes and nematodes living in humus.

Most of the *Dolichopodidae* species of urban habitats belong to the group of abundant and numerous species. They also occur in the areas subjected to the highest urban pressure. The species classified as scarce and sporadic are markedly reduced in these habitats (Table 3).

SPECIES NEW TO THE FAUNA OF POLAND

Medetera chrysotimiformis Kow.

Warsaw: Praga park, 2 females caught in June. European species.

Medetera insignis Girschn.

Radziejowice, an oak-hornbeam forest, 1 female caught in a tree crown in July. Euro-Siberian species.

Systenus leucurus Loew

Warsaw: Saxon Garden, 2 females and 4 males caught in grass in July. European species.

Chrysotimus concinuus Zett.

Warsaw: Bielany; Radziejowice, the sites of an oak-hornbeam forest and a carr; Kampinos Forest, coniferous-deciduous forest. About 150 specimens caught in grass and tree crowns from June to September. European species.

SPECIES NEW TO MAZOVIA

Dolichopus latelimbatus Macq.

Warsaw: parks and centre, Ursynów, Białołęka; Radziejowice.

Dolichopus nubilus Meig.

Warsaw: centre, Białołęka; Radziejowice, in a carr. Not numerous.

Dolichopus plumitarsis Fall.

Warsaw: Bielany, in tree crowns. Not numerous.

Hercostomus nigriplantis Stann.

Warsaw: Białołęka, single specimens.

Hercostomus vivax Loew.

Warsaw: centre, parks; Radziejowice, an oak-hornbeam forest. Several specimens.

Madetera micacea Loew.

Warsaw: urban green areas, Białołęka; Radziejowice. Abundant in Warsaw.

Neurogona erichsoni Zett.

Radziejowice, an oak-hornbeam forest. Single specimens.

Neurogona pallida Fall.

Warsaw: Bielany, in tree crowns.

Porphyrops vommunis Meig.

Warsaw: Łazienki park, in tree crowns, 1 specimen.

Porphyrops fascipes Meig.
Warsaw: Łazienki park, in a tree crown, 1 specimen.

Syntormon pallipes Fabr.
Radziejowice, a carr. Single specimens.

Chrysotimus molliculus Fall.
Warsaw: parks, Bielany, Ursynów, Białołęka; Radziejowice.

Chrysotus cupreus Macq.
Warsaw: Ursynów, Single specimens.

Chrysotus femoratus Zett.
Warsaw: parks, Białołęka; Radziejowice. Numerous.

Diaphorus hoffmannseggi Meig.
Radziejowice, a carr. Several specimens.

Asyndetus latifrons Loew.
Warsaw: parks, Ursynów, Białołęka. Rather numerous.

Campsicnemus armatus Zett.
Warsaw: centre, parks. Not numerous.

Campsicnemus lumbatus Loew.
Warsaw: centre, parks, Ursynów. Single specimens.

Campsicnemus marginatus Loew.
Warsaw: parks. Not numerous.

Sciopus longulus Fall.
Warsaw: centre, green areas of housing estates, parks, Białołęka.

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Table 4. Check-list of *Dolichopodidae* (*Diptera*) species occurring in Warsaw and Mazovia

No.	○ — literature data ● — proved literature data + — unpublished data 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	*Dolichopus acuticornis* Wied.	○	—	—	—	—	○
2	*Dolichopus agilis* Meig.	○	—	—	—	—	○
3	*Dolichopus brevipennis* Meig.	○	—	—	—	—	○
4	*Dolichopus campestris* Meig.	●	+	—	—	—	○
5	*Dolichopus claviger* Stann.	○	—	—	—	—	○
6	*Dolichopus griseipennis* Stann.	○	—	—	—	—	○
7	*Dolichopus latelimbatus* Macq.	+	+	+	+	+	—
8	*Dolichopus linearis* Meig.	○	—	—	—	—	○

1	2	3	4	5	6	7	8
9	*Dolichopus longicornis* Stann.	●	—	+	+	+	○
10	*Dolichopus longitarsis* Stann.	○	—	—	—	—	—
11	*Dolichopus nigricornis* Meig.	○	—	—	—	—	○
12	*Dolichopus nitidus* Fall.	●	+	+	+	+	○
13	*Dolichopus notatus* Staëg.	○	—	—	—	—	—
14	*Dolichopus nubilus* Meig.	+	—	—	+	+	—
15	*Dolichopus pennatus* Meig.	○	—	—	—	—	○
16	*Dolichopus plumipes* (Scop.)	●	+	+	+	+	○
17	*Dolichopus sabinus* Hal.	○	—	—	—	—	—
18	*Dolichopus simplex* Meig.	○	—	—	—	—	○
19	*Dolichopus plumitarsis* Fall.	—	+	—	—	—	—
20	*Dolichopus ungulatus* (L.)	●	+	+	+	+	○
21	*Hercostomus aerosus* (Fall.)	●	+	+	+	+	○
22	*Hercostomus chrysozygos* (Wied.)	○	—	—	—	—	○
23	*Hercostomus germanus* (Wied.)	○	—	—	—	—	○
24	*Hercostomus nigriplantis* (Stann.)	+	—	+	—	+	—
25	*Hercostomus vivax* Loew	+	—	—	—	—	—
26	*Poecilobothrus nobilitatus* (L.)	○	—	—	—	—	○
27	*Peodes forcipatus* Loew	○	—	○	—	—	—
28	*Hydrophorus balticus* (Meig.)	○	—	—	—	—	○
29	*Hydrophorus praecox* (Lehm.)	○	—	—	—	—	○
30	*Thinophilus flavipalpis* Zett.	○	—	—	—	—	○
31	*Medetera diadema* (L.)	●	+	+	—	—	○
32	*Medetera chrysotimiformis* Kow.	—	—	+	—	—	—
33	*Medetera infumata* Loew	○	—	—	—	—	○
34	*Medetera jacula* Meig.	●	+	+	+	+	○
35	*Medetera micacea* Loew	+	+	+	+	+	—
36	*Medetera pallipes* Zett.	●	+	+	+	—	—
37	*Medetera plumbella* Meig.	○	—	—	—	—	—
38	*Medetera insignis* Girsch.	+	—	—	—	—	—
39	*Medetera truncorum* Meig.	○	—	—	—	—	—
40	*Porphyrops antennata* Carl.	○	—	—	—	—	○
41	*Porphyrops basalis* Loew	○	—	—	—	—	○
42	*Porphyrops communis* Meig.	—	—	+	—	—	—
43	*Porphyrops fascipes* Meig.	—	—	+	—	—	—
44	*Porphyrops laticornis* (Fall.)	○	—	—	—	—	○
45	*Porphyrops penicillatus* Loew	○	—	—	—	—	—
46	*Syntormon pallipes* (Fabr.)	+	—	—	—	—	—
47	*Syntormon pumilus* (Meig.)	○	—	—	—	—	○
48	*Systenus leucurus* Loew	—	—	+	—	—	—
49	*Xiphandrium caliginosum* Meig.	○	—	—	—	—	○
50	*Xiphandrium fasciatum Meig.*	○	—	—	—	—	—
51	*Xiphandrium monotreichum* (Loew)	○	—	—	—	—	○
52	*Neurogona erichsoni* (Zett.)	+	—	—	—	—	—
53	*Neurogona pallida* (Fall.)	+	+	—	—	—	—
54	*Neurogona quadrifasciata* (Fall.)	●	+	—	—	—	—
55	*Diaphorus nigricans* Meig.	○	—	—	—	—	○
56	*Diaphorus oculatus* (Fall.)	●	—	—	—	—	—
57	*Asyndetus latifrons* Loew	+	+	+	—	—	—
58	*Leucostola vestita* Wied.	○	—	—	—	—	○
59	*Argyra diaphana* (Fabr.)	○	—	—	—	—	○

1	2	3	4	5	6	7	8
60	*Argyra leucocephala* Meig.	○	—	—	—	—	—
61	*Chrysotus femoratus* Zett.	+	+	+	+	+	—
62	*Chrysotus cupreus* Macq.	—	+	—	—	—	—
63	*Chrysotus cilipes* Meig.	●	—	+	+	+	○
64	*Chrysotus gramineus* (Fall.)	●	+	+	+	+	○
65	*Chrysotus laesus* (Wied.)	●	+	+	+	+	○
66	*Chrysotus microcerus* Kow.	○	—	—	—	—	○
67	*Chrysotus neglectus* (Wied.)	●	+	+	+	+	—
68	*Chrysotus pulchellus* Kow.	○	—	—	—	—	○
69	*Chrysotus suavis* Loew	○	—	—	—	—	○
70	*Diaphorus hoffmannseggi* Meig.	+	—	—	—	—	—
71	*Campsicnemus armatus* (Zett.)	—	—	+	—	+	—
72	*Campsicnemus curvipes* (Fall.)	○	—	—	—	—	○
73	*Campsicnemus lumbatus* Loew	—	+	+	—	+	—
74	*Campsicnemus marginatus* Loew	—	—	+	—	—	—
75	*Campsicnemus scambus* (Fall.)	●	—	+	—	—	○
76	*Chrysotimus concinnus* (Zett.)	+	+	—	—	—	—
77	*Chrysotimus molliculus* (Fall.)	+	+	+	—	—	—
78	*Sympycnus aeneicoxae* (Meig.)	—	—	+	—	—	—
79	*Sympycnus annulipes* (Meig.)	●	—	+	—	+	—
80	*Teuchophorus calcaratus* (Macq.)	○	—	—	—	—	○
81	*Xanthochlorus ornatus* (Hal.)	●	+	—	—	—	—
82	*Xanthochlorus tenellus* (Wied.)	●	+	+	—	—	—
83	*Sciopus albifrons* (Meig.)	●	—	+	—	+	—
84	*Sciopus contristans* (Wied.)	○	—	—	—	—	—
85	*Sciopus longulus* (Fall.)	+	—	+	+	+	—
86	*Sciopus nervosus* (Lehm.)	○	—	—	—	—	—
87	*Sciopus platypterus* (Fabr.)	●	+	+	—	—	—

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DOLICHOPODIDAE (*DIPTERA*) WARSZAWY I MAZOWSZA

STRESZCZENIE

Pod względem faunistycznym *Dolichopodidae* są grupą w Polsce słabo zbadaną. Dotychczas z obszaru Mazowsza wykazanych jest 87 gatunków, z tego na terenie zieleni miejskiej Warszawy — 33. Najwięcej (33 gatunki) występuje w parkach miejskich, na terenach bardziej zurbanizowanych, takich jak zieleń osiedlowa i centrum, jest ich dużo mniej (Tab. 1).

Gatunki dominujące w środowisku miejskim mają zazwyczaj szerokie zasięgi występowania, zamieszkują prawie cały obszar palearktyczny lub obejmują całą Europę i Syberię.

U *Dolichopodidae* występuje zróżnicowanie przestrzenne. Część gatunków spotyka się głównie w warstwie runi, inne natomiast zamieszkują warstwę koron drzew. Trzecia grupa gatunków zasiedla równomiernie obie warstwy (Tab. 2).

Analiza klas liczebności badanej rodziny muchówek wykazała, że liczba gatunków masowych i licznych w faunie miejskiej jest niewiele niższa od występującej w faunie środowisk naturalnych Mazowsza. Natomiast liczba gatunków uznanych za nieliczne i sporadyczne zmniejsza się wyraźnie w środowisku zurbanizowanym (Tab. 3).

ЗЕЛЕНУШКИ (*DIPTERA, DOLICHOPODIDAE*) ВАРШАВЫ И МАЗОВИИ

РЕЗЮМЕ

С территории Варшавы приведено 34 вида *Dolichopodidae*, а из всей Мазовии 87 известных до настоящего времени видов. *Dolichopodidae*, доминирующие в городской среде, относятся к видом, обладающим широким географическим ареалом, как: палеарктические и европейскосибирские. У рассматриваемых двукрылых наблюдалась ярусность в распространении. Выделена группа видов населсющих кроны деревьев, нижний ярус и встречающиеся равномерно в обоих ярусах. Количественный анализ показал, что преобладают в городской фауне виды, которые принято определять как массовые или многочисленные. Эти виды удерживаются также в сильно урбанизированной среде, а самом центре города.