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MATERIAL FOR STUDIES ON THE THRIPS FAUNA (*THYSANOPTERA, INSECTA*) OF THE POLESIE LUBELSKIE REGION (EASTERN POLAND)

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A b s t r a c t: A list of 87 species of thrips (Thysanoptera, Insecta) collected up to the present from the Polesie is presented. As many as 12 of the species are hygrophylous ones connected with plants building peat-bog communities. Among them, some are regarded as rare for the Polish fauna, e.g.: *Belothrips acuminatus, Pelikanothrips kratochvili, Thrips menyanthidis, Liothrips austriacus, Liophloeothrips hungaricus, Megalothrips bonnani and Megathrips lativentris. Haplothrips utae* has been noted for the first time in our country.

K e y w o r d s: thrips, Thysanoptera, rare species, ecological characteristics, the Polesie Lubelskie Region

INTRODUCTION

Thrips are insects connected closely via food with many plant species and representing various trophic groups. Hence, they constitute a constant and usually quite numerously represented element of entomofauna of different plant communities. Due to their small size, they are often left out in the entomological research, as a result of which, a degree to which their fauna has been studied in the individual regions of Poland, varies considerably. So far, 217 species have been recorded in Poland, most of which have been found in xerothermic and meadow communities of the central and eastern Poland [5]. Some data on thrips from the Polesie were given in Sęczkowska [8]. The latter author mentioned 26 species recorded during her research on the fauna of trees and bushes of the Lublin voivodeship. Also, the results of research carried out in the Poleski National Park in 1994-1996 have been partially published [2,3].

RESEARCH AREA AND METHODS

In the years 1994-1996, a systematic research covered peat-bog, meadow and forest communities in the Polesie National Park, its most valuable parts. In the "Western Polesie" Biosphere Reserve designed communities are in the following zones: (the Łukie Lake – the Orłowskie peat-bog), (the Moszne Lake – the Długie Lake – the Durne Bagno peat-bog), (the Bagno Bubnów peat bog) and (the Bagno Bubnów peat bog – the Bagno Staw peat bog). In 1998-1999, research was continued on se-veral localities in the Sobibór Landscape Park (Table 1).

The insects were collected using methods most commonly used in entomology. Entomological net was used alongside plant shaking in the undergrowth and ground cover. Dendrophylous insects were caught in Moericke traps hung in tree-crowns where insects' sensitivity to certain colours, in this case – white, yellow, red and green, was taken advantage of [4]. In forests, litter was run through entomological sieves. The material collected was determined as belonging to a given species using Priesner's [6], and Schliepake and Klimt's keys [7]; in the ecological analysis, Strassen's paper [9] was used. The evidence material collected during research can be seen in the present authors' collections.

RESULTS

In the course of research, 80 species of thrips were recorded in the Polesie. Together with the species found previously by Sęczkowska, a total number of thrips species in this region is 87 (40% of all species noted in Poland) which means that the Thysanoptera fauna of this region is well-researched in comparison to that of other regions (Table 1). The number of species recorded in the sites depends on the number of samples taken as well as diversity of plant communities occurring there. The highest number of Thysanoptera species was found in peat-bogs and forest areas surrounding the Długie Lake (54 species), the Moszne Lake (29 species) and the Bagno Bubnów peat bog (24). Slightly fewer species have been recorded from the Durne Bagno peat-bog, the Łukie Lake and the Jelino peat-bog (21 species in each), as well as the Orłowskie peat-bog (20 species). Only 9 species were found in more than 10 or more sites. They were mostly eurytopic and polyphagous forms. More than half of all the species recorded (57) were found in 1 or 2 sites only. This group was exemplified mainly by monophagous and oligophagous insects as well as stenotopic ones related to environments with high humidity, e.g.: *Baliothrips dispar*, *Belothrips acuminatus, B. morio, Pelikanothrips*

Table 1. Ecological characteristic and occurrance of the thrips (Thysanoptera, Insecta) in the Polesie Lubelskie Region. 1 - Moszne Lake, 2 - Długie Lake, 3 - Durne Bagno peat bog, 4 - Bagno Bubnów peat bog, 5 - Bagno Staw peat bog, 6 - Łukie Lake, 7 - Orłowskie peat bog, 8 - Pieszowola, 9 - Wytyckie Lake, 10 - Las Bukowski , 11 - Kosyń, 12 - Nadrybie, 13 - Jelino peat bog, 14 - Płotycze Lake, 15 - Stare Stulno, 16 - Kulczyn, 17 - data of Sęczkowska [8], * - rare species, ** - species new for Polish fauna

Lp.	List of thrips species	Ecological characteristic	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Σ
	Aeolothripidae																			
1.	*Aeolothrips albicinctus* Haliday	zoophagous		+													+		+	**3**
2.	*Aeolothrips intermedius* Bagnall	zoophagous	+	+	+	+			+		+	+					+	+	+	**10**
3.	*Aeolothrips melaleucus* Haliday	zoophagous		+	+	+			+										+	**5**
4.	*Aeolothrips versicolor* Uzel	zoophagous																	+	**1**
5.	*Aeolothrips vittatus* Haliday	zoophagous		+											+					**2**
6.	*Melanthrips fuscus* (Sulzer)	floricolous		+															+	**2**
	Thripidae																			
7.	*Anaphothrips badius* (Williams) *	graminicolous	+			+									+					**3**
8.	*Anaphothrips obscurus* (Müller)	graminicolous	+	+		+		+		+		+			+	+	+		+	**10**
9.	*Aptinothrips rufus* Haliday	graminicolous						+							+		+			**3**
10.	*Aptinothrips stylifer* Trybom	graminicolous				+		+												**2**
11.	*Baliothrips dispar* (Haliday)	graminicolous	+												+					**2**
12.	*Belothrips acuminatus* Haliday *	floricolous											+							**1**
13.	*Belothrips morio* O.M.Reuter *	floricolous											+			+				**2**
14.	*Ceratothrips ericae* (Haliday)	floricolous	+		+	+	+	+												**5**
15.	*Chirothrips aculeatus* Bagnall	graminicolous															+			**1**
16.	*Chirothrips manicatus* Haliday	graminicolous	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	**17**
17.	*Dendrothrips degeeri* Uzel *	foliicolous		+																**1**
18.	*Dendrothrips ornatus* (Jablonowski)	foliicolous						+												**1**
19.	*Dictyothrips betae* Uzel	foliicolous		+																**1**
20.	*Drepanothrips reuteri* Uzel *	foliicolous		+																**1**
21.	*Frankliniella intonsa* (Trybom)	floricolous	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	**16**
22.	*Frankliniella pallida* (Uzel)	floricolous																	+	**1**
23.	*Frankliniella tenuicornis* (Uzel)	graminicolous		+		+				+										**3**
24.	*Kakothrips robustus* (Uzel)	floricolous		+															+	**2**
25.	*Limothrips consimilis* Priesner	graminicolous	+	+		+								+	+				+	**6**
26.	*Limothrips denticornis* Haliday	graminicolous	+	+	+		+	+	+			+							+	**8**

Table 1. Continued

Lp.	List of thrips species	Ecological characteristic	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Σ
27.	*Mycterothrips albidicornis* (Knechtel) *	foliicolous		+					+											2
28.	*Mycterothrips annulicornis* (Uzel)	herbicolous		+															+	2
29.	*Mycterothrips consociatus* (Targ.-Tozzetti)	foliicolous	+	+	+				+						+					5
30.	*Mycterothrips latus* (Bagnall)	foliicolous	+	+	+							+								4
31.	*Mycterothrips salicis* (O.M.Reuter)	foliicolous		+	+															2
32.	*Neohydatothrips abnormis* (Karny)	floricolous		+		+														2
33.	*Odontothrips biuncus* John	floricolous				+														1
34.	*Odontothrips loti* (Haliday)	floricolous														+				1
35.	*Odontothrips phaleratus* (Haliday)	floricolous																	+	1
36.	*Oxythrips ajugae* Uzel	foliicolous	+	+	+				+			+			+				+	7
37.	*Oxythrips bicolor* (O.M.Reuter)	foliicolous	+	+	+				+			+								5
38.	*Pelikanothrips kratochvili* (Pelikan) *	foliicolous		+																1
39.	*Pezothrips dianthi* (Priesner) *	floricolous															+			1
40.	*Platythrips tunicatus* (Haliday)	herbicolous		+		+				+										3
41.	*Rubiothrips silvarum* (Priesner)	floricolous																	+	1
42.	*Stenothrips graminum* Uzel	graminicolous	+	+																2
43.	*Taeniothrips picipes* (Zetterstedt)	herbicolous			+								+							2
44.	*Tenothrips frici* (Uzel)	floricolous		+							+									2
45.	*Tmetothrips subapterus* Haliday	herbicolous													+					1
46.	*Thrips albopilosus* Uzel	floricolous		+				+											+	3
47.	*Thrips alni* Uzel	foliicolous		+															+	2
48.	*Thrips angusticeps* Uzel	herbicolous	+	+																2
49.	*Thrips atratus* Haliday	floricolous		+	+		+	+	+		+			+	+			+	+	10
50.	*Thrips conferticornis* Priesner	floricolous		+																1
51.	*Thrips flavus* Schrank	floricolous	+	+		+	+				+	+		+	+					8
52.	*Thrips fuscipennis* Haliday	floricolous	+	+	+	+	+	+	+	+	+	+	+		+		+	+		14
53.	*Thrips incognitus* Priesner *	herbicolous																	+	1
54.	*Thrips linarius* Uzel	floricolous		+																1
55.	*Thrips major* Uzel	floricolous	+	+	+	+	+	+	+	+	+	+	+	+	+		+			14
56.	*Thrips menyanthidis* Bagnall *	herbicolous	+																	1
57.	*Thrips minutissimus* Linnaeus	foliicolous	+	+	+				+			+			+					6
58.	*Thrips nigropilosus* Uzel	herbicolous						+												1

T a b l e 1. Continued

Lp.	List of thrips species	Ecological characteristic	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Σ
59.	*Thrips physapus* Linnaeus	floricolous	+	+	+	+	+	+	+		+			+			+	+		11
60.	*Thrips pillichi* Priesner	floricolous		+																1
61.	*Thrips sambuci* Heeger	floricolous																	+	1
62.	*Thrips tabaci* Lindeman	herbicolous	+	+					+		+				+		+	+	+	8
63.	*Thrips trehernei* Priesner	herbicolous		+		+			+		+			+			+	+		7
64.	*Thrips urticae* Fabricius	herbicolous						+											+	2
65.	*Thrips validus* Uzel	floricolous	+		+				+					+	+					5
	Phlaeothripidae																			
66.	*Bolothrips dentipes* (O.M.Reuter)	graminicolous	+	+	+	+	+	+				+			+	+				9
67.	*Cephalothrips monilicornis* (O.M.Reuter)	graminicolous	+	+	+	+		+				+			+	+				8
68.	*Haplothrips aculeatus* (Fabricius)	graminicolous	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	16
69.	*Haplothrips angusticornis* Priesner	floricolous		+																1
70.	*Haplothrips distinguendus* (Uzel)	floricolous		+																1
71.	*Haplothrips jasionis* Priesner	floricolous																+		1
72.	*Haplothrips leucanthemi* (Schrank)	floricolous				+														1
73.	*Haplothrips phyllophilus* Priesner	foliicolous	+	+																2
74.	*Haplothrips propingus* Bagnall *	floricolous				+		+												2
75.	*Haplothrips setiger* Priesner	floricolous	+	+		+					+						+			5
76.	*Haplothrips subtilissimus* (Haliday)	foliicolous		+															+	2
77.	*Haplothrips utae* Klimt **	foliicolous	+	+																2
78.	*Hoplandrothrips bidens* (Bagnall)	corticolous							+											1
79.	*Hoplothrips ulmi* (Fabricius)	corticolous		+																1
80.	*Liophloeothrips hungaricus* Priesner *	corticolous		+																1
81.	*Liothrips austriacus* (Karny) *	foliicolous											+							1
82.	*Liothrips setinodis* (O.M. Reuter)	foliicolous		+																1
83.	*Megalothrips bonnani* Uzel *	corticolous						+												1
84.	*Megathrips lativentris* (Heeger) *	corticolous						+												1
85.	*Phlaeothrips coriaceus* Haliday	corticolous																	+	1
86.	*Phlaeothrips denticauda* Priesner *	corticolous							+											1
87.	*Xylaplothrips fuliginosus* (Schille)	corticolous		+																1
		Σ	29	54	21	24	11	21	20	8	13	15	8	10	21	7	15	10	26	

kratochvili, Tmetothrips subapterus, Thrips menyanthidis, Haplothrips utae, Megalothrips bonnani and Megathrips lativentris (Table 1).

The thrips recorded so far in the Polesie fall into three families: Aeolothripidae – 6 species, Thripidae – 59 species, and Phlaeothripidae – 22 species. They belong to 6 ecological groups distinguished on the basis of food preferences and microenvironments of insects.

Zoophages are represented by 5 species from genus *Aeolothrips* where predatory forms are their larvae. The most commonly found is the eurytopic *Aeolothrips intermedius*, and in forests and shrubs also *Aeolothrips melaleucus*. Most of the species recorded are phytophages of various degrees of dependence on their host plants. The most numerous group is that of species feeding on herbaceous plants flowers (floricolous – 31 species), among which there are very common and numerous polyphages, e.g.: *Frankiliella intonsa, Thrips atratus, T. fuscipennis, T. major, T. physapus*, as well as monophages found in drier places, e.g.: *Pezothrips dianthii* (very rare), *Haplothrips jasionis*, and *H. leucanthemi*.

Among the species collected, 18 are foliicolous – connected with the leaves of herbaceous plants, trees and bushes. They were mostly found in Moericke's traps hung in dwarf birches and pines growing on peat-bogs, as well as in the marshy coniferous forests and woods surrounding them. In deciduous trees, the most frequently met species were *Mycterothrips consociatus* and *Thrips minutissimus*, while in the coniferous ones – *Oxythrips ajugae* and *O. bicolor*. Among very rare species in this group there are *Haplothrips utae*, new to Poland and noted in Germany as species connected with *Juncus*; *Liothrips austriacus* – so far found only on one site in Poland and *Pelikanothrips kratochvili* – observed only on 2 sites.

Fourteen of all species collected are graminicolous. They feed in inflorescences, grass and sedge leaves. In peat-bogs, a common and numerous species were eurytopic *Cephalothrips monilicornis* and *Haplothrips aculeatus*, and *hygrophyl*ous Bolothrips dentipes, found quite frequently but always on individually. In mea-dows, forests and lagg communities, *Anaphothrips obscurus, Chirothrips manicatus and Haplothrips aculeatus* were the most frequently caught species. On 3 sites found *Anaphothrips badius,* a rare species, typical of water-logged habitats was found.

Also, a group of 11 herbicolous species – feeding and developing on herbaceous plants but showing no preference for any particular part of the plants, was identified. This group consists of a common eurytopic and polyphagous species of *Thrips tabaci* and *Thrips trehernei*, as well as monophagous ones: *Thrips urticae* connected with *Urtica dioica*, very rare *Thrips menyanthidis* connected with *Men-*

yanthes trifoliata, *Thrips incognitus*, feeding on species of genus *Galium*, reported by Sęczkowska [8] and known from 2 sites only. The last, highly specialised food group is corticolous mycophages occurring mostly under bark of old trees and in litter. These are fairly large insects caught as single specimens. This group consists of *Megalothrips bonnani*, *Megathrips lativentris* and *Liphloeothrips hungaricus*, very rare in our country [3,5,10].

CONCLUSION

Thysanoptera fauna of the Polish part of Polesie is rather well known. 87 species has been recorded up to now, it is about 40% of thrips species known from Poland. Among them 10 species are regarded as very rare in Polish fauna. *Haplothrips utae* has been collected for the first time from our country. Some of thrips species were collected in the most interesting for Polesie stations, like peat-bog plant communities, situated in the Polesie National Park.

Taking into account the food and living place preferences of all collected species they were considered to six ecological groups.

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MATERIAŁY DO POZNANIA WCIORNASTKÓW (*THYSANOPTERA, INSECTA*) POLESIA (WSCHODNIA POLSKA)

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S t r e s z c z e n i e. Duże zróżnicowanie siedlisk oraz bogata szata roślinna Polesia sprawiły, że fauna *Thysanoptera* tego obszaru jest jedną z lepiej poznanych w porównaniu z innym regionami kraju. Dotychczas wykazano stąd 87 gatunków wciornastków. Zaliczono je do 6 grup ekologicznych wydzielonych na podstawie preferencji pokarmowych oraz środowisk bytowania i rozwoju owadów. Ostatnie badania nie potwierdziły występowania 7 gatunków podawanych wcześniej przez Sęczkowską. Wśród nich znajduje się rzadki w skali kraju *Thrips incognitus*.

Najliczniej i najczęściej na badanym terenie notowano gatunki o szerokich zasięgach i dużej tolerancji pokarmowej. Wśród gatunków trawolubnych były to: *Chirothrips manicatus* i *Haplothrips aculeatus*, a wśród związanych z zielnymi roślinami dwuliściennymi: *Frankliniella intonsa, Thrips atratus, T. fuscipennis, T. major* i *T. physapus*.

Ponad połowa (57 gat.) wszystkich gatunków obserwowana była na jednym lub dwóch stanowiskach. W tej grupie znalazły się gatunki higrofilne, monofagiczne, znane z kilku stanowisk w kraju: *Pelikanothrips kratochvili* i *Thrips menyanthidis* oraz nowy dla polskiej fauny – *Haplothrips utae*. Również gatunki dendrofilne, żyjące pod korą próchniejących drzew lub w ściółce znajdowane były pojedynczo. W tej grupie zasługują na uwagę: żerujący na liściach drzew liściastych *Liothrips austriacus* oraz mykofagiczne *Liophloeothrips hungaricus*, *Megalothrips bonnani* i *Megathrips lativentris*.

S ł o w a k l u c z o w e: wciornastki, gatunki rzadkie, charakterystyka ekologiczna, Polesie Lubelskie