

On the occurrence of Thysanoptera in Poland

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Abstract: The paper reviews our knowledge of Thysanoptera in Poland. A total of 216 species are recorded from Poland, but 34 of these have been recorded only once and at one locality, and 7 of these date from before World War II. During the last 10 years, 25 more thrips species have been found in Poland, and a lot of species have been noted at new localities in different regions. The best known fauna is that of xerothermic habitats that are typical of big river valleys of upland areas in central and eastern Poland.

Introduction

Poland lies on the border between two large physiographical regions, the Central-European Lowland and the Eastern-European Lowland. In the fork created by the San and Vistula Rivers is the northern border of the region of the Western Carpathian Mountains and the Carpathian Foothills. The vegetation of the country has a transitional character, with oceanic influence in the west and an increasingly continental character towards the east. This is indicated by the increasing number of steppe species in the valleys of the Vistula, Bug, Wieprz and Nida Rivers, on the hilltops of the upland areas as well as in the increasing number of coniferous trees typical of lowland areas of Eurasia in the forests of eastern Poland (Starkel 1991). The transitional character of the flora affects the fauna of the country, and so for many species of mammals, birds and butterflies this area is their geographical limit. Observations of Thysanoptera species in Poland and east of it could yield information about the range of occurrence of European and Euro-Siberian species.

Historical review

The first data on the Thysanoptera of Poland date back to 1902 – 1905 and cover information collected by Schille on the fauna of the Poprad River valley in the Beskid Sądecki Mountains as well as some information on the Tatra Mountains and the Kraków area (Schille 1902, 1905, 1911). In 1936 Kèler prepared the first catalogue of Thysanoptera occurring in Poland (within its then borders). The catalogue covered the data gathered by Schille and the author and included

information about 86 species, 5 of which were later considered as synonyms, while 6 come from the areas that at present lie outside Poland. Both Schille and Kèler mentioned species that have not been observed again: *Ankothrips niezabitowskii* (Schille, 1911), *Notothrips albobittatus* (Schille, 1910) and *Oxythrips ulmifoliorum* (Haliday, 1836) (Table 1) (Kèler 1936, Zawirska 1988).

In the 1930s and 1940s Oettingen carried out research on thrips in the vicinity of Gorzów Wielkopolski and Świecie-on-Vistula (which at that time were part of Germany). He recorded 59 species, of which *Aeolothrips pulcher* (Oettingen, 1943), *Anaphothrips mohelensis* (Pelikan, 1949), *Sminythrips biuncinatus* (Uzel, 1895) and *Hoplothrips caespitis* (Uzel 1895) have never been observed again in Poland (Table 1) (Oettingen 1942, Zawirska 1988).

After the Second World War most data on the thrips fauna have come from the research of Sęczkowska (1966, 1971, 1972, 1975), Zawirska (1970, 1987, 1988) and Kucharczyk (1994, 1996, 1999a), and to a smaller extent Gromadska (1954, 1959) and Pokuta (1991).

Current state of Thysanoptera research in Poland

Kèler concluded in his Catalogue (1936) that, assuming the specimens had been correctly identified, it was possible to find 200 species of thrips in Poland. In 1988, Zawirska published a list of Thysanoptera containing 151 species (including the data from the pre-war times), and in another list from 1990 there are 191 species (Zawirska 1988, 1990). The latest

list of Thysanoptera species recorded from Poland, including the data coming from the last ten years of research, contains 216 species.

Since 1960, Catalogues of the Polish Fauna have been published, presenting all the data on the occurrence of various groups of animals in Poland. 41 volumes of the Catalogues are to be published, one of which is to be devoted to Thysanoptera. In the Catalogues, the whole area of Poland has been divided into 25 regions on the basis of geographical and floristic differences between them. The distribution of thrips known from Poland has been analysed in all but one of the regions (the Baltic).

So far, the best known Thysanoptera fauna is that of the Lublin Upland, where 164 species have been recorded (76 per cent of the whole fauna of Poland). The research here has been conducted for many years by Sęczkowska, Zawirska, and recently also Kucharczyk. 132 species (61 per cent) have been found in the Mazovian Lowland during the research run by Zawirska. Also, thanks to the work done by Oettingen, Gromadska, and Zawirska the fauna of the Wielkopolsko-Kujawska Lowland (102 species – 47 per cent) is relatively well known. Schille's, Pokuta's and Zawirska's research in the Western Beskidy Mountains (94 species – 43 per cent) has contributed considerably to increasing our knowledge of *Thysanoptera*. In the remaining regions the number of recorded species ranges from 0 or just a few (the Trzebnickie Hills, the Nowy Targ Basin, the Sudety Mountains) to approx. 80 (the Sandomierz Basin, the Kraków-Wieluń Upland and the Małopolska Upland).

The latest research conducted by Kucharczyk in the Białowieża Primeval Forest, in the Sandomierz Basin and Roztocze has considerably widened our hitherto incomplete knowledge of the fauna of forest areas (Kucharczyk 1999b, Kucharczyk, Sęczkowska 1990). In various forest communities of eastern Poland 75 *Thysanoptera* species have been recorded. In the Białowieża Primeval Forest *Hoplandrthrips williamsianus* Priesner, 1923 and *Phlaeothrips annulipes* O.M. Reuter, 1880 have been observed for the first time. Rare in Poland are also species recorded from various types of forests in this area: *Thrips fulvipes* Bagnall, 1923, *Holothrips schaubegeri* (Priesner, 1920), *Megathrips lativentris* (Heeger,

1852), *Poecilothrips albopictus* Uzel, 1895 and *Treherniella inferna* (Priesner, 1922). Also, within the last few years the fauna of peat-bog communities has become much better known, mainly due to the research in the Poleski National Park and in the Sandomierz Basin. During the research several rare species have been observed: *Anaphothrips badius* (Williams, 1913), *Pelikanothrips kratochvili* (Pelikan, 1947), *Thrips menyanthidis* Bagnall, 1923, *Megalothrips bonnani* Uzel, 1895 and *Bolothrips dentipes* (O.M. Reuter, 1880) (Kucharczyk 1996, 1998).

In Poland, the best known is the fauna of xerothermic habitats, which are typical of big river valleys (the Vistula, Bug, Wieprz, Nida Rivers) of upland areas in central and eastern Poland; in such habitats rare xerothermophilous species like *Aptinothrips karnyi* John, 1927, *Thrips praetermissus* (Priesner, 1920) and *Prosopothrips vejdoskyi* Uzel, 1895 have been observed (Kucharczyk, Zawirska 1994). In the Vistula River valley *Scolothrips uzeli* (Schille, 1910) has been found, which was recorded by Schille in the Poprad River valley in 1902. In the Kraków area, in *Galium verum* flowers *Thrips incognitus* Priesner 1914 was found, so far recorded only from the Lublin Upland in 1950s by Sęczkowska. New in the Polish fauna is *Odontothrips cytisi* Morison, 1928, collected in 2000 from *Chamaecytisus albus* flowers occurring in xerothermic grasslands in the Bug River valley. Now the researches on fauna of Słowiński National Park and the Bug River valley are carried out and their results have not been published yet.

Among the 216 species recorded from Poland so far, only half have been found in more than 5 regions, which points to the fact that the fauna of certain areas of Poland is better known than that of others. 33 species have been recorded only once, out of which 7 were observed before World War II, while the remaining ones within the last forty years (Table 1). In many cases the reason for it could lie in problems with identifying particular species; however, it is also possible that for some of the species Poland is the geographical limit of their occurrence. The identification of some species is most probably incorrect (e.g. *Hoplandrothrips hungaricus* Priesner, 1961, *Hoplothrips quercinus* Knechtel, 1935), however, it cannot be verified due to lack of specimens.

Species	Authors
<i>Aeolothrips pulcher</i> Oettingen, 1943	2
<i>Ankothrips niezabitowskii</i> (Schille, 1910)	1
<i>Dendrothrips karnyi</i> Priesner, 1921	4
<i>Idolimothrips paradoxus</i> Priesner, 1920	4
<i>Iridothrips mariae</i> Pelikan, 1961	5
<i>Kakothrips dentatus</i> Knechtel, 1938	4
<i>Limothrips angulicornis</i> Jablonowski, 1894	4
<i>Odontothrips cytisi</i> Morison, 1928	6
<i>Oxythrips cannabensis</i> Knechtel, 1923	4
<i>Oxythrips tatricus</i> Pelikan, 1955	6
<i>Oxythrips ulmifoliorum</i> (Haliday, 1836)	3
<i>Stenchaetothrips biformis</i> (Bagnall, 1913)	5
<i>Sphaeropothrips vittipennis</i> (Bagnall, 1927)	5
<i>Sminyothrips biuncinatus</i> Uzel, 1895	2
<i>Thermothrips mohelensis</i> (Pelikan, 1949)	2
<i>Thrips crassicornis</i> Bagnall, 1923	5
<i>Thrips euphorbiae</i> Knechtel, 1922	5
<i>Thrips praetermissus</i> Priesner, 1920	6
<i>Bolothrips cingulatus</i> (Karny, 1916)	5
<i>Eurytrichothrips affinis</i> (O.M. Reuter, 1899)	5
<i>Haplothrips flavicinctus</i> Karny, 1910	4
<i>Haplothrips pannonicus</i> Fabian, 1938	6
<i>Haplothrips utae</i> Klimt, 1969	6
<i>Hoplothrips caespitis</i> (Uzel, 1895)	2
<i>Hoplothrips quercinus</i> Knechtel, 1935	4
<i>Hoplandrothrips hungaricus</i> Priesner, 1961	4
<i>Lispthrips crassipes</i> (Jablonowski, 1894)	6
<i>Liothrips austriacus</i> (Karny, 1909)	4
<i>Liothrips oleae</i> (Costa, 1857)	4
<i>Liothrips vaneeckei</i> Priesner, 1920	5
<i>Megalothrips bonnani</i> Uzel, 1895	6
<i>Notothrips albovittatus</i> (Schille, 1912)	1
<i>Phlaeothrips annulipes</i> O.M. Reuter, 1880	6

Table 1. Thysanoptera species recorded in Poland only once and at a single site. Authors of data: 1, Schille; 2, Oettingen; 3, Kéler; 4, Sęczkowska; 5, Zawirska; 6, Kucharczyk

Conclusion

Further research on the distribution of Thysanoptera in Poland should be carried out. In the research special attention ought to be paid to the rare species and the southern and eastern parts of Poland, which lie on the border between physiographical regions of Western and Eastern Europe. Important ecological corridors cross here (east-west corridors connecting the valleys of the Dniepr and Vistula Rivers and south-north ones going along the Bug River valley and through the Moravian Gate across the Carpathians), which enable migrations of plants and animals and determine the transitional character of the fauna of Poland (Chmielewski 2000).

References

- Chmielewski TJ. 2000. The International Biosphere Reserve „Polesie Zachodnie” (West Polesie) – the Project of nature and culture harmonisation. [ed.] Poleski Park Narodowy, Lublin-Urszulin: 5-20.
- Gromadska M. 1954. Przyłżeńce biotopu wydumowego. (Próba analizy ekologicznej). Ekol. pol. Warszawa, 2 (1):93-139.
- Gromadska M. 1959. Fauna przyłżeńców biotopów zagospodarowanych. Stud. Soc. Sci. Torun., Toruń, 5: 1-9.
- Kèler S. 1936. Thripsy (przyłżeńce Polski). Prace Wydz. Chor. Roślin. PINGW Bydgoszcz, 15:81-154.
- Kucharczyk H. 1994. Przyłżeńce (*Thysanoptera*) Roztocza. *Fragm. Faun. Warszawa*, 37: 167-180.
- Kucharczyk H. 1996. *Thysanoptera (Insecta)* collected in peat-bog communities in Poleski National Park (East Poland). *Folia entomol. hung.* 57 (suppl): 61-66.
- Kucharczyk H. 1999a. Materiały do poznania wciornastków (*Thysanoptera*) *Puszczy Białowieżskiej. Parki Narodowe i Rezerваты Przyrody, Białowieża*, 18.1 (suppl.): 87-92.
- Kucharczyk H. 1999b. The diversity of thrips fauna (*Thysanoptera, Insecta*) in different forest communities of eastern Poland. [in:] Abstracts of VIII European Ecological Congress, Greece, Halkidiki 18-23.08.1999: 172.
- Kucharczyk H. 2001. Ordo (rząd) *Thysanoptera* – wciornastki. [in:] Catalogue of the fauna of Białowieża Primeval Forest (ed. Gutowski J., Jaroszewicz B.). IBL W-wa: 95-96.
- Kucharczyk H and Sęczkowska K. 1990. Przyłżeńce (*Thysanoptera*) zespołu grądowego (*Tilio-Carpinetum*) w rezerwacie *Bachus (Wyżyna Lubelska)*. *Fragm. faun. Warszawa*, 33: 349-360.
- Kucharczyk H and Zawirska I. 1994. Study on the thrips fauna (*Insecta: Thysanoptera*) on xerothermic grasslands of South-East Poland. Sonderdruck aus CFS-Courier. Forschungsinstitut Senckenberg, 178: 3-7.
- Oettingen H. Von 1942. Die Thysanopteren des norddeutschen Graslandes. *Ent. Beih., Berlin-Dahlem*, 9: 79-141.
- Pokuta M. 1991. Materiały do fauny Beskidu Małego. *Acta Biol. Silesiana*. Katowice, 18 (35): 155-160.
- Schille F. 1902. Materiały do fauny owadów siatkoskrzydłych i szarańczaków doliny Popradu. Część I. *Spraw. Kom. Fizjogr., Kraków*, 36: 83-85.
- Schille F. 1905. Materiały do fauny owadów siatkoskrzydłych i szarańczaków doliny Popradu. Część II. *Spraw. Kom. Fizjogr., Kraków*, 38: 8-17, 36-39.
- Schille F. 1911. Nowe formy przyłżeńców (*Thysanopterorum genera et species novae*). *Spraw. Kom. Fizjogr., Kraków*, 45: 3-10.
- Sęczkowska K. 1966. *Thysanoptera kserotermicznych zespołów roślinnych Wyżyny Lubelskiej*. *Ann. UMCS, Lublin, C*, 21: 49-61.
- Sęczkowska K. 1971. Przyłżeńce (*Thysanoptera*) zebrane z drzew i krzewów na terenie woj. lubelskiego. *Ann. UMCS, Lublin, C*, 26: 177-185.
- Sęczkowska K. 1972. Badania nad przyłżeńcami (*Thysanoptera*) ściółki na terenie Lubelszczyzny. *Ann. UMCS, Lublin, C*, 27: 71-78.
- Sęczkowska K. 1975. Przyłżeńce (*Thysanoptera*) Gór Pieprzowych. *Ann. UMCS, Lublin, C*, 30: 209-215.
- Starkel L. 1991. *Geografia Polski. Środowisko przyrodnicze*. PWN Warszawa: 586-603.
- Zawirska I. 1970. Beiträge zur einigen Gräserthysanopteren. *Pol. Pismo ent. Wrocław*, 40: 517-523.
- Zawirska I. 1987. Beitrag zur Kenntnis der Thysanopteren Polens. Populations, structure, genetics and taxonomy of Aphids and Thysanoptera. *Proc. Inf. Symposia, Smolenice, Czechoslovakia, Sept. 9-14, 1985*: 531-535.
- Zawirska I. 1988. *Thysanoptera* collected in Poland. *Fragm. faun. Warszawa*, 31: 361-410.
- Zawirska I. 1990. *Thysanoptera (Przyłżeńce)*. [in:] *Wykaz zwierząt Polski (ed. Razowski J.)*, 1, 32: 1-20.