

SPATIAL ASPECTS OF RESEARCH ON THRIPS (THYSANOPTERA) IN
SLOVAKIA

PETER J. FEDOR

Department of Ecosozology, Faculty of Natural Sciences, Comenius University, Bratislava, Mlynská dolina, 842 15 Slovakia, e-mail: fedor@fns.uniba.sk

ABSTRACT. A present trend in synthesis of faunistic data to evaluate more general characteristics of taxa significantly appears in projection of actual knowledge on biodiversity and in more intensive monitoring of biota. From the chronological point of view research on thrips in Slovakia may be classified into 3 specific periods: 1895 – 1945, 1945 – 2000, 2001 – present time. Each of the periods contributes to the general thysanopterological research by its original way. A lot of the relevant references provide mainly sporadic data on occurrence of thrips in Slovakia (e.g. first records). However, a particular view has been dedicated to study on Thysanoptera at several sites of SW Slovakia (especially Jurský Šúr and Devínska Kobyla nature reserves). The research has been carried on in Malé Karpaty, Vysoké Tatry, Belianske Tatry, Malá and Veľká Fatra Mts. The original data were provided by studying nidicolous fauna in nests of birds and mammals in various localities of the country. A lack of reliable data, still insufficient to be generalised, does not enable to discuss on ecology, distribution or conservation of thrips in Slovakia. Thus the main goal should be to increase intensity of research from the quantitative as well as qualitative point of view.

KEYWORDS: research, Slovakia, thrips

INTRODUCTION

This contribution has been written due to a need to evaluate spatial aspects of research on thrips (Thysanoptera) in Slovakia as a part of more generalised monitoring biota on regional or even European level. Any nature conservation, general or special has to be undisputedly established on reliable database of faunistic or floristic character and later from dimensions of ecology and zoogeography of taxa. From this point of view the Slovakian thysanopterology still stands at its beginnings. The red lists have never included any thrip species in our country. Thysanoptera have been rather classified as serious pests of growing crop with no consequences for conservation. However, some of the European countries, e.g. Germany, Austria have

reached the period, when ecosozological aspects may be discussed (ZUR STRASSEN, 1994). Anyway all these syntheses require enough faunistic data and their collection should be a main priority for the Slovakian thysanopterology in the nearest future.

ON THE HISTORICAL ASPECTS OF
THYSANOPTEROLOGICAL
RESEARCH IN SLOVAKIA

The historical context of thysanopterological research in Slovakia has been analysed by FEDOR (2003 b). For a more general view I should hint at the amazing monograph published by UZEL (1895) at the end of the 19th century, which has officially opened thysanopterology as a separate scientific discipline on the area of former Austrian – Hungarian empire or even in the

European intentions. Obviously this monograph may be nowadays considered as a basis for plenty of following complex studies in former Czechoslovakia such as the determination key written by PELIKÁN (1957 b). Generally the history of thysanopterological research in Slovakia may be classified into 3 main periods.

1. 1895 - 1945:

The first period dates back to the Uzel's monograph (UZEL, 1895) with wider, at least Central - European dimensions. All the relevant papers, being published before 1895, were without particular importance for the area of Slovakia. Actually the monograph was concentrated on the records from Austria and the present Czech Republic. Despite the first data refer to JABLONOWSKI (1899) in the more complex Fauna Regni Hungariae, the thysanopterological research in Slovakia began some decades later (KRATOCHVÍL, 1939 a, b, DUDICH et al., 1943, etc.).

2. 1945 - 2000:

The period was formed by the papers of prof. Pelikán, who opened the thysanopterological research in former Czechoslovakia soon after the World War II. (PELIKÁN, 1945). A lot of his papers have presented rather sporadic data (e.g. PELIKÁN, 1951 a, 1954), the others were of complex character (PELIKÁN, 1957 b, 1977). Obviously the period includes some more authors, such as ŠTEPANOVIČOVÁ (1958) or HEŠKOVÁ (1967).

3. Present times:

At its beginning the 3rd period contributed to the knowledge on thrips in nests of birds and mammals in numerous sites of Slovakia (PELIKÁN et al., 2002, FEDOR et al., 2001, 2002). Moreover there are several faunistic papers (SIERKA, 2003, SIERKA et HALGOŠ,

2003) and more generalised works, for example the first national checklist (FEDOR et al., 2004) or the bibliography of thysanopterological literature (FEDOR, 2003 b).

Although the Uzel's monograph UZEL (1895) has brought the fundamental propedeutics for any faunistic research on thrips in Central Europe, it particularly deals with the western part of former Austrian – Hungarian empire. All the relevant references dedicated to research on thrips in Slovakia have been listed by FEDOR (2003 b).

From the conception point of view the thysanopterological research in Slovakia has gathered 2 types of data:

1. direct data
2. indirect data.

The direct data include results of complex or sporadic research of faunistic character dealing with thrips. The first relevant data were published by JABLONOWSKI (1899) and later by KRATOCHVÍL (1939 a, b). Soon after the World War II. PELIKÁN (1945, 1951 a, 1954, 1955, 1958, 1960, 1961, 1965, etc.) started to publish plenty of valuable data from Slovakia, particularly from Vysoké Tatry, Belianske Tatry, Malá Fatra and Veľká Fatra Mts.

A special emphasis was put on the thysanopterological research in several localities of SW Slovakia, for instance National Nature Reserve Jurský Šúr (HEŠKOVÁ, 1967, PELIKÁN, 1992, FEDOR et al., 2001, SIERKA et FEDOR, 2004, SIERKA et HALGOŠ, 2003, SIERKA, 2003, 2004) or Devínska Kobyla (e.g. DOBROVODSKÁ, 1973).

The Figure 1 presents all the published localities of thysanopterological research in Slovakia localised on the DSF (Databank of the Slovakian fauna) grid square or on COU (Codes of orographic units) in case of unspecified localisation.

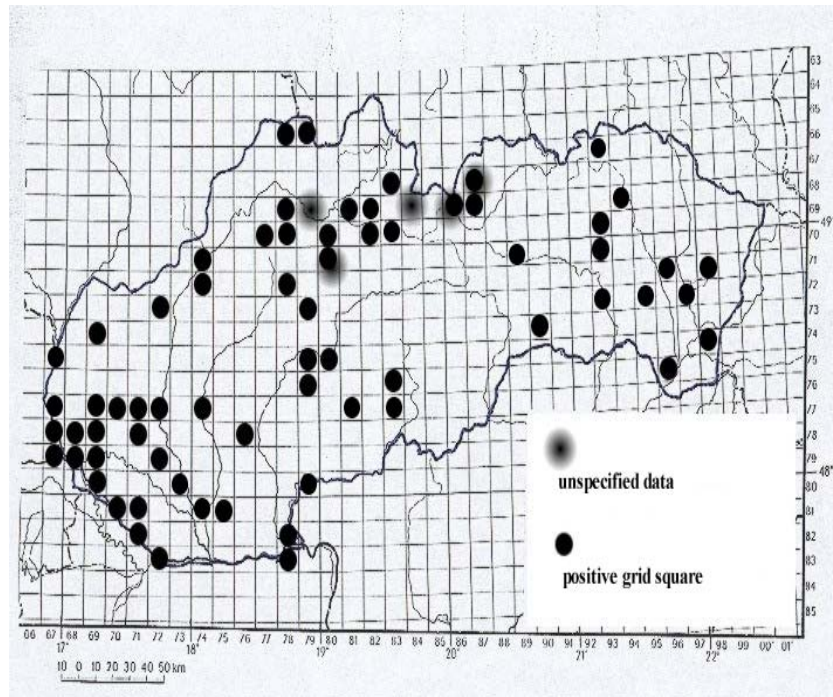


Fig. 1. A survey of thysanopterological research in Slovakia (published data).

The indirect data relate to the research, which was not conceptionally focused on thrips. This category particularly includes information from the study on thrips from nests of various birds and mammals in numerous localities of Slovakia. The research dates back to the 80's of the 20th century (PELIKÁN et al., 2002). The analysis seems to cover the whole area of Slovakia, however the data are often sporadic and difficult to be discussed.

A survey of localities

(the localities have been named according to their original references, localised on the DSF (Databank of the Slovakian fauna) grid square or on COU (Codes of orographic units) in case of unspecified localisation. Misspelled or older names have been synonymised

from the actual point of view. The survey has been accompanied by relevant references.

- Bajč – 8075 - Štepanovičová, 1958
- Baka – 8071 - Pelikán et al., 2002
- Banská Štiavnica – 7579 - Pelikán, 1958, Pelikán et al., 2002
- Bardejov – 6693 – (presented as Bártfa) Jablonowski, 1899
- Batizovské pleso – 6886 - (PELIKÁN, 1954, 1955, 1983)
- Belianske Tatry – KOC 183 - Pelikán, 1952
- Bratislava – 7868 - Jablonowski, 1899
- Buková – 7470 - Pelikán et al., 2002
- Cejkov – 7596 – (presented as) Jablonowski, 1899
- Červený Kameň – 7670 - Pelikán et al., 2002

- Čičov – 8272 – Fedor et al., 2002, Pelikán et al., 2002, Fedor, 2004 a
- Čierne – 6578 - Pelikán et al., 2002
- Čierny kameň – 7080 - Pelikán, 1952
- Devínska Kobyla in s.l. – 7867, 7868, 7767, 7768 – Pelikán, 1951 b, Pelikán, 1952, Dobrovodská, 1973, Fedor, 2004 b, Sierka, 2004
- Dierová – 6881 - Pelikán et al., 2002
- Domaniža – 6977 - Pelikán et al., 2002
- Dúbravka – 7868 - Dobrovodská, 1973
- Fintice – 6993 - Kratochvíl, 1939 b
- Furkotská dolina – 6886 – Pelikán, 1952, Pelikán, 1954
- Gabčíkovo – 8171 - Pelikán, 1954, Pelikán, 1965, Fedor et al., 2002, Pelikán et al., 2002
- Galanta – 7872 - Fedor et al., 2002, Pelikán et al., 2002, Fedor, 2003 a, Fedor, 2004 a
- Gerlach – 6886 - (PELIKÁN, 1954, 1955, 1983)
- Haniska – 7093 - Kratochvíl, 1939 b
- Horný les – 7667 – Fedor 2003 c
- Hrhov – 7390 - Pelikán, 1958
- Hviezdoň – 6787 - Pelikán, 1952
- Chľaba – 8178 – Pelikán, 1990
- Jur nad Hronom, - 7877 – (presented as Garamszentgyörgy) Dudich et al., 1943
- Jurský Šúr – 7769 – Hešková, 1967, Pelikán, 1992, Fedor et al., 2001, Pelikán et al., 2002, Sierka et Fedor, 2004, Sierka et Halgoš, 2003, Sierka, 2003, Fedor, 2004 a
- Kamenica nad Hronom – 8178 - Pelikán, 1990
- Kamenín – 8177 – Pelikán, 1958
- Kľúčovec – 8272 - Fedor et al., 2002, Pelikán et al., 2002
- Košice – 7293 – (presented as Kassa) Jablonowski, 1899
- Kováčov – 8178 - Pelikán, 1961, Pelikán et al., 2002
- Kováčová – 7480 - Pelikán et al., 2002
- Kozárovce – 7677 – (presented as Garamkovácsi) Dudich et al., 1943
- Kozol - (presented as Kozel) – 6978 – Pelikán, 1951 b, Pelikán, 1952
- Kremnica – 7279 – (presented as Körmöcbánya) Dudich et al., 1943, Pelikán, 1965
- Kurimany – 7089 - Jablonowski, 1889
- Lešť – 7681 – (presented as Mezötur) Jablonowski, 1899
- Lopúchov – 6894 - Jablonowski, 1889
- Lovinobaňa – 7583 - Pelikán et al., 2002
- Lučenec – 7683 - Jablonowski, 1889
- Lúčky – 6882 - Jablonowski, 1889
- Lubochňianska dolina – 6980 - Pelikán et al., 2002
- Malá Fatra – KOC 140 - Pelikán, 1951 a, Pelikán, 1952
- Malý Šariš – 6993 - Kratochvíl, 1939 b
- Michalovce – 7297 - Jablonowski, 1889
- Mlyňany – 7776 - Pelikán et al., 2002
- Nitra – Zobor – 7674 - Pelikán et al., 2002
- Nové mesto nad Váhom – 7272 - Pelikán et al., 2002
- Oščadnica – 6579 - Pelikán et al., 2002
- Podunajské Biskupice (published as Biskupice) – 7869 - Pelikán, 1965, Pelikán, 1990
- Prešov – 6993, 7093 – Kratochvíl, 1939 b
- Pusté Uľany – 7771 - Fedor et al., 2002, Pelikán et al., 2002, Fedor, 2003 a, Fedor, 2004 a
- Rajecké Teplice – 6878 - Pelikán et al., 2002
- Rybník and Hronom – 7777 – (presented as Garamszöllös) Dudich et al., 1943
- Siladice – 7672 – Štepanovičová, 1958
- Sklené Teplice – 7479 – (presented as Szklenőfürdő) Dudich et al., 1943, Priesner, 1961, Pelikán, 1965
- Sládkovičovo – 7771 - Fedor et al., 2002, Pelikán et al., 2002

Stankovany – 6881 - Pelikán et al., 2002
Svätý Kríž – 6982 - Pelikán et al., 2002
Svrčinovec – 6578 – Pelikán et al., 2002
Šajdíkové Humence – 7369 - Pelikán et al., 2002
Šamorín – 7969 - Fedor et al., 2002, Pelikán et al., 2002
Štúrovo – 8178, 8278 – Pelikán, 1958, Pelikán, 1960, Pelikán, 1983, Pelikán, 1990
Tatry – KOC 181, 182, 183 – Kratochvíl, 1939 a
Tekovské Lužany – 7877 – (presented as Nagysalló) Dudich et al., 1943
Trenčín – 7174, 7074 - Pelikán, 1952
Trnava – 7671 - Pelikán et al., 2002
Trnávka – 7295 – (lokalita uvedená ako Torna) Jablonowski, 1899
Turecká – 7178 - Pelikán et al., 2002
Turie – 6878 - Pelikán, 1952
Vajnory – 7769 – Fedor et al., 2002, Pelikán et al., 2002
Velické pleso – 6886 - (PELIKÁN, 1954, 1955, 1983)
Veľká Fatra – KOC 150 - Pelikán, 1952
Veľká studená dolina – 6887 - Pelikán, 1952, Pelikán, 1958
Veľké Kapušany – 7498 - Pelikán, 1954
Veľký Brehov – 7596 - Pelikán et al., 2002
Vihorlat – 7198 - Pelikán, 1961
Vinosady – 7669 - Dobrovodská, 1973
Vlčany – 7973 – Jablonowski, 1889
Vojka nad Dunajom – 8070 – Fedor et al., 2002, Pelikán et al., 2002, Fedor, 2003 a, Fedor, 2004 a
Vranov nad Topľou – 7196 - Jablonowski, 1889
Vysoké Tatry – KOC 182 - Pelikán, 1951b, Pelikán, 1952, Pelikán, 1954, Pelikán, 1955
Vyšná Šebastová – 6993 - Jablonowski, 1889

Vyšný Sihelník – 6578 - Pelikán et al., 2002
Zádiel – 7390 – Pelikán, 1957 a
Zuberec – 6783 - Pelikán et al., 2002
Despite the list of localities may hint at an intensive research on thrips in Slovakia, most of the data are rather of sporadic character. 1 grid square often includes 1 or few records and any complex syntheses are absent. However there are several localities, for instance the National Nature Reserve Jurský Šúr or Devínska Kobyla, which have been analysed more in detail. General evaluation on ecology, distribution, bioindication potential and ecosozological status requires more faunistic information. Thus the conception of future research should reflect a need for more intensive faunistic study on the area of whole Slovakia

REFERENCES

DOBROVODSKÁ, M. 1973. Thysanoptera lesostepí a lúk v oblasti Malých Karpát. Diplomová práca, Katedra všeobecnej zoológie a živočíšnej fyziológie Prírodovedeckej fakulty Univerzity Komenského v Bratislave, 51 pp.
DUDICH E., PONGRÁCZ, S., IHAROS, A., FÁBIÁN GY. 1943. Bars vármegye Neuropteroidea – faunájának alapvetése. *Matem. Termész Kozlem.*, 40: p. 1 – 47.
FEDOR, P. J. 2003 b. Bibliografický prehľad thysanopterologických prác so zreteľom na územie Slovenska. *Entomofauna Carpathica*, 15: p. 68 – 70.
FEDOR, P.J. 2003 a. First records of *Thrips albopilosus* Uzel, 1895 (Thysanoptera: Thripidae) in Slovakia. *Biológia, Bratislava*, 58/5, 1: p. 4.
FEDOR, P.J. 2003 c. Diverzita a bioindikačný potenciál rovnokridleho hmyzu in sensu lato (Mantodea, Dermaptera, Blattodea, Ensifera et Caelifera) a strapiek (Thysanoptera) vo vybraných biotopoch okolia nivy

- Moravy. Správa z projektu pre CHKO Záhorie, (mns.)
- FEDOR, P.J. 2004 a. First records of *Dendrothrips degeeri* Uzel, 1895 (Thysanoptera: Thripidae) in Slovakia. *Biológia*, Bratislava, 59/2, 1: p. 13 – 14.
- FEDOR, P.J. 2004 b. Strapky (Thysanoptera) Devínskej Kobyly. *Fauna Devínskej Kobyly*, APOP, (in press).
- FEDOR, P.J., KRUMPÁL, M., CYPRICH, D. 2002. Strapky (Thysanoptera) v hniezdach vtákov a cicavcov vybraných lokalít juhozápadného Slovenska. *Folia faunistica Slovaca* 7, Bratislava, p. 31 – 34.
- FEDOR, P.J., PELIKÁN, J., CYPRICH, D., KRUMPÁL, M. 2001. Thrips (Thysanoptera) in the Nests of Birds and Mammals of the NPR Jurský Šúr. *Folia faunistica Slovaca* 6, Bratislava, p. 69 – 73.
- FEDOR, P.J., SIERKA, W., MAJZLAN, O. 2004. The Thrips (Thysanoptera) of Slovakia. *Acta Phytopathologica et Entomologica Hungarica* 39 (1-2), p. 299-307.
- HEŠKOVÁ, A. 1967. Príspevok k poznaniu thysanopterofauny rezervácie Šúr pri Jure. *Československá ochrana prírody – sborník 5 Slovenského ústavu pamiatkovej starostlivosti a ochrany prírody v Bratislave*, p 279 – 318.
- JABLONOWSKI, J. 1899. *Classis. Insecta. Ordo. Thysanoptera. Editio senerata. Fauna Regni Hungariae. A Magyar birodalom állatvilága. A.K.M. Termés zettudományi társulat. Budapest*, p. 17 – 18.
- KRATOCHVÍL, J. 1939 a. Dix nouvelles especes des Thysanopteres pour la Tchecoslovakie. *Folia entomologica*, 2: p. 65 – 66.
- KRATOCHVÍL, J. 1939 b. K poznání třásněnek žijících na ovesných kulturách a příčiny bělení, šupinatění a hluchosti ovesných klásků a lat. *Entomologické listy* 2: p. 87 – 105.
- PELIKÁN J. 1952. Přehled třásnokřídlych z Československa. *Entomol. Listy*, 15: p. 185 – 195.
- PELIKÁN J., FEDOR P., KRUMPÁL M., CYPRICH D. 2002. Thrips (Thysanoptera) in nests of birds and mammals in Slovakia. *Ekológia (Bratislava)* 21 (3), 275 - 282.
- PELIKÁN, J. 1945. Další příspěvek k poznání našich třásněnek.. *Entomol. Listy*, 8: p. 71 – 72.
- PELIKÁN, J. 1951 a. Další poznámky o našich třásněnkách. *Entomol. Listy*, 14: p. 158 – 161.
- PELIKÁN, J. 1951 b. O třásněnce karafiátové. (Taeniothrips dianthi Priesner). *Entomol. Listy*, 14: p. 5 – 38.
- PELIKÁN, J. 1954. Nové nálezy třásnokřídlych z ČSR. *Zool. Entomol. Listy*, 17: p. 202.
- PELIKÁN, J. 1955. *Oxythrips tatricus* sp. n. neznámý druh třásněnky z kosodřeviny. *Zool. Entomol. Listy*, 18: p. 21 – 28.
- PELIKÁN, J. 1957 a. Neue Thysanopterenarten aus der Tschechoslowakei – I. *Fol. Zool.*, 6: p. 52 – 56.
- PELIKÁN, J. 1957 b. Řád třásnokřídli – Thysanoptera. In: Kratochvíl J. (ed.), *Klíč zvířeny ČSR. Vol 2. ČSAV, Praha*, p. 9-34.
- PELIKÁN, J. 1958. Neue Thysanopterenarten aus der Tschechoslowakei – II. *Čas. Čs. Spol. Entomol.*, 55: p. 280 – 288.
- PELIKÁN, J. 1960. Neue Thysanopterenarten aus der Tschechoslowakei – III. *Čas. Čs. Spol. Entomol.*, 57: p. 112 – 117.
- PELIKÁN, J. 1961. New species of Thysanoptera from Czechoslovakia – IV. *Acta Soc. Entomol. Českoslov.*, 58: p. 60 – 70.
- PELIKÁN, J. 1965. New species of Thysanoptera from Czechoslovakia – V. *Acta Soc. Entomol. Českoslov.*, 62: p. 98 – 104.

- PELIKÁN, J. 1983. Zur Faunistik der Thysanopteren Mitteleuropas. Verh. SIEEC X. Budapest, p. 295 – 297.
- PELIKÁN, J. 1990. *Thysanoptera*. Faunistic records from Czechoslovakia. Acta Entomol. Bohemoslov., 87: p. 232 - 234.
- PELIKÁN, J. 1992. Cryptaplothrips famelicus Priesner, 1926 a Limothrips angulicornis Jablonowski, 1894. Faunistic records from Czechoslovakia. Acta Entomol. Bohemoslov. 89: p. 168.
- PELIKÁN, J., 1977. Thysanoptera. In: Dlabola J. (ed.), Check list - Enumeratio insectorum bohemoslovakiae. Acta faun. entomol. Mus. nat. Pragae, 15 (Suppl. 4): 55 – 59.
- PRIESNER, H. 1961. Thysanopterologica XII. Polskie Pis. Ent., 31: p. 51 – 61.
- SIERKA, W. 2004. First records on a species of the genus Belothrips Haliday, 1836 in Slovakia. Biologia. (in press)
- SIERKA, W., 2003: First records of thrips (Thysanoptera) in Slovakia from the National nature reserve Jurský Šúr (SW Slovakia). Biologia, Bratislava, 58/5, 1: p 1001 – 1002.
- SIERKA, W., FEDOR, P.J. 2004. Wciornastki, czyli trypsy (Insecta, Thysanoptera) znane z rezerwatu przyrody Šúr na Słowacji. Parki i Rezerwaty Przyrody (in press).
- SIERKA, W., HALGOŠ, J. 2003. Thrips (Insecta, Thysanoptera) of the NPR Šúr near Bratislava. Entomofauna Carpathica, 15: p. 14 – 19.
- ŠTEPANOVIČOVÁ, O. 1958. Druhý príspevok o entomofaune tabakových polí. II. Thysanoptera, III. Homoptera – Auchenorrhyncha. Acta Fac. Rer. Nat. Univ. Com. Tom. II, fasc. VII-IX, p. 534 – 548.
- UZEL, B. 1895. Monographie der Ordnung Thysanoptera. Königgrätz, 472 pp.
- ZUR STRASSEN, R. 1994. Gefährdete Franseflügler-Arten Österreichs (Thysanoptera). In: GEPP, J. (ed.), Rote Listen gefährdeter Tiere Österreichs, Vol. 2. Styria Medien Service, Graz, p. 269 – 273.