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MADEROTHRIPS LONGISETIS (BAGNALL, 1910) (THYSANOPTERA: PHLAEOTHRIPIDAE) – THE FIRST FAUNISTIC RECORD FROM SLOVAKIA

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ABSTRACT. This paper deals with the first record of arboricolous thrips *Maderothrips longisetis* (Bagnall, 1910) (Thysanoptera: Phaeothripidae) from Slovakia. The species was observed near the National Nature Reserve Bábsky les wood in the district of Nitra (SW Slovakia) and obtained using a soil photoeclector, based on positive phototaxy of insects.
KEY WORDS: Bábsky les wood, first record, *Maderothrips longisetis*, Thysanoptera

Introduction

The research on soil-dwelling (geobiont) and bark-dwelling (corticicolous) thrips has been conducted in Slovakia for almost one decade, with many new species recorded for the first time (e.g. DORIČOVÁ et FEDOR, 2012, FEDOR et al., 2012, MASAROVIČ et al., 2009, 2011, 2013, 2014). Approximately, 180 thrips species are known from Slovakia up to the present (FEDOR et al., 2012), however, in comparison with the neighbouring countries (Hungary, Poland, the Czech Republic) there is a remarkable potential to increase diversity due to wide heterogeneity of biotopes and local ecological conditions in Central Europe. Moreover, the previous research was rather concentrated on western parts of the country with almost no data from central and eastern regions. Another reason for relatively low knowledge on Thysanoptera in Slovakia is in a lack of faunistic experts, when most records in past were published almost only by Pelikán (e.g. PELIKÁN 1955, 1977, PELIKÁN et al., 2002). Since the beginning of the 21st century the research and publication activities on thrips have been more intensive in Slovakia, including those dealing with introduction of many new exotic species (e.g. FEDOR et VARGA, 2007, VARGA et FEDOR, 2008). This paper offers information on the first record of arboricolous *Maderothrips longisetis* (Bagnall, 1910).

Maderothrips longisetis (Bagnall, 1910) lives on branches and under the bark of deciduous and coniferous trees (SCHLIEPHAKE et KLIMT, 1979, KOBRO, 2001, PELIKÁN, 1995). It occurs in woodland ecosystems and habitats and belongs to the mycophagous arboricolous species (PELIKÁN, 1995, KUCHARCZYK et al., 2015). PELIKÁN (1945, 1995) observed the species on *Carpinus* sp. and *Quercus* sp. *Maderothrips longisetis* has been categorized as a predator (MOUND et al., 1976, KOBRO, 2003), being observed in the vicinity of eggs laid by other insects (DJADEČKO, 1964). Larvae feed on extra-cellular products and juices of decomposing wood fibres.

This species is also known as *Hoplothrips longisetis* (SCHLIEPHAKE et KLIMT, 1979, MOUND et al., 1976, PELIKÁN, 1977), but *Maderothrips* has been recently more preferred in nomenclature (PRIESNER, 1964,

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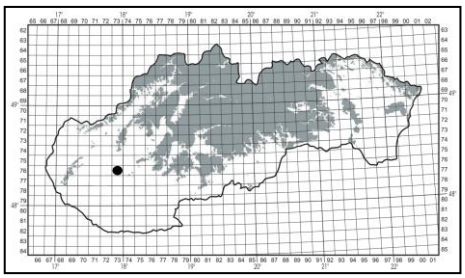
PELIKÁN, 1995, VIERBERGEN and de JONG, 2013, KUCHARCZYK et al., 2015).

Fig. 1: The study area in the map of Slovakia



Material and methods

The research on bark-dwelling and soil-dwelling thrips (Thysanoptera) was conducted in the area of Bábsky les wood, which represents a semi-natural oak-hornbeam wood (*Fageto-Quercetum*) situated in lowland, in the district of Nitra (SW Slovakia) (fig 1). The open habitat study plot was deforested in 2006 and consequentially the vegetation structure as well as the forestry management impact have been changed. This study plot is characterized by spreading of invasive trees: *Ailanthus altissima* and *Robinia pseudoacacia* and the presence of young native species *Quercus robur*, *Carpinus betulus*, *Quercus cerris*, *Acer campestre*, *Ulmus minor*, in the close contact with a 100 year old forest *Fageto-Quercetum*.

Thrips were collected applying the soil photoeclector trap (fig. 2), constructed of side plastic walls connected with metal bar frame and covered by opaque textile material (MAJZLAN et FEDOR, 2005). A collecting jar was located on the top of the photoeclector and filled with ethyleneglycol using as a killing agent. The trap covers 1 m^2 of the soil area. It works on a principle of positive phototaxis. In this regard, thrips emerging from the soil were attracted by light and captured in collecting jar. Ethanol (70 %) was used as a conservation liquid. Thrips were mounted according to the standard preparatory techniques and identified with the help of dichotomous identification keys for Tubulifera (MOUND et al., 1979, SCHLIEPHAKE et KLIMT, 1979, PELIKÁN, 1957, PRIESNER, 1964). The material has been deposited in the collections of the authors.

Fig. 2 The soil photoeclector at the locality of *Maderothrips longisetis*

Results and discussion

Material examined:

The first faunistic record of *Maderothrips longisetis* (Bagnall, 1910) in Slovakia:

One specimen found near the National Nature Reserve Bábsky les wood (48°18′08′′ N, 17°53′25′′ E, DFS grid square 7673 c), in the district of Nitra (Nitrianska pahorkatina hills, SW Slovakia), July 7, 2012. 1 ♀, captured in the soil photoeclector at the open habitat. Leg. R. Masarovič, det. R. Masarovič, coll. R. Masarovič. The first record from Slovakia.

Maderothrips longisetis (Bagnall, 1910) is a European species (PELIKÁN, 1995), widespread throughout the continent (fig. 3) from West to Caucasus (MOUND et al., 1976, SCHLIEPHAKE et KLIMT, 1979). The species has been recorded in almost all Central European

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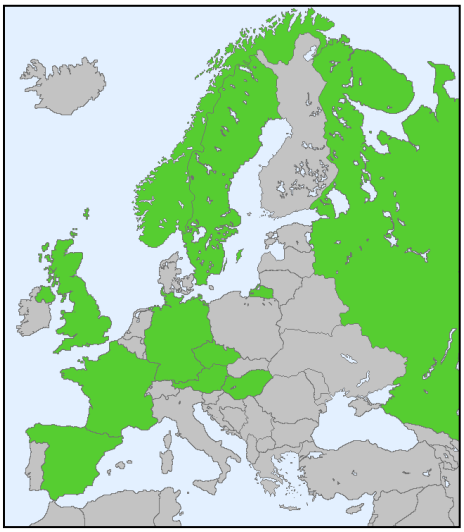
countries: in the Czech Republic (PELIKÁN, 1945), Hungary (JENSER, 1979) and Poland (KUCHARCZYK et al., 2015). Its occurrence in Slovakia was expected.

Fig. 3: Distribution of *Maderothrips longisetis* (Bagnall, 1910) in Europe (http://www.faunaeur.org)



Maderothrips (*Hoplothrips*) *longisetis* (Bagnall, 1910) is characterized by the following morphological attributes: antennal segments III and IV with two sense cones, antennal segment VII broadly joined to segment VIII, maxillary stylets about one-third of head width apart and big rounded eyes make up one-third of the head length, fore tarsus without a tooth in both male and female, distal hind margin of forewings without duplicated cilia, contrasted two-coloured legs with pale (yellow) tarsi and tibia and dark (brown) femur (MOUND et al., 1976, SCHLIEPHAKE et KLIMT, 1979) (Fig. 4). Adults of *Hoplothrips* genus (PRIESNER 1926, 1964, MOUND et al. 1976, SCHLIEPHAKE et KLIMT, 1979, MOUND et MARULLO, 1996) are distinguished by the extreme polymorphism (OKAJIMA, 1987), accompanied by identification problems (KOBRO et RAFOSS, 2006).

Fig. 4: *Maderothrips longisetis* (Bagnall, 1910) (photo: Martin Štefánik, Rudolf Masarovič)

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References

DJADEČKO, N., 1964. Tripsy. Ukrainisches wiss Forsch. inst. fur Pflanzenkrankheiten, Kiew.
DORIČOVÁ, M., FEDOR, P., 2012. The first record of bark - dwelling thrips *Phlaeothrips bispinosus* Priesner, 1919 (Thysanoptera, Phlaeothripidae) in

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Slovakia. Thysanopteron Pismo Entomologiczne, 7 (1): p. 1-2.

FEDOR P., DORIČOVÁ M., MASAROVIČ R., SIERKA W. 2012. Strapky (Thysanoptera) Slovenska. Comenius University, Bratislava. 184 pp.

FEDOR, P. J., VARGA, L., 2007. The first record of *Gynaikothrips ficorum* Marchal, 1908 (Thysanoptera) in Slovakia. Thysanopteron Pismo Entomologiczne, 3 (1): p. 1-2.

JENSER, G., 1979. The check-list of Thysanoptera of Hungary. Folia entomologica hungarica, 32 (2): p. 31 – 42.

KOBRO, S., 2001. *Hoplothrips polystici* (Thysanoptera) on the wood-rotting polypore *Trichaptum abietinum* infesting dead Picea abies in Norway. Entomologica Fennica 12: 15-21.

KOBRO, S., 2003. On the Norwegian thrips fauna (Thysanoptera). Norw. J., Entomol., 50: p. 17-32.

KOBRO, S., RAFOSS, T., 2006. Identification of adult males and females of *Hoplothrips* species (Thysanoptera: Tubulifera) known from Norway, and some deductions on their life history. Entomologica Fennica, 17: p. 184-192.

KUCHARCZYK, H., KUCHARCZYK, M., WYROZUMSKI, L., 2015. Screen traps as an efficient method in faunal research on fungus-feeding thrips (Tubulifera: Phlaeothripidae). Polish Journal of entomology 84, p. 201-210.

MAJZLAN, O., FEDOR, P. 2005. An influence of the Casoron G Herbicide on the soil macrofauna (Eclectorfauna). Phytopedon (Bratislava), 4 (2): p. 40–48.

MASAROVIČ, R., DORIČOVÁ, M., FEDOR, P., KUCHARCZYK, H., 2013. First record of bark-dwelling and mycophagous thrips *Hoplothrips unicolor* (Vuillet, 1914) (Thysanoptera, Phlaeothripidae) in Slovakia. Thysanopteron Pismo entomologiczne, 8 (1): p. 1-3.

MASAROVIČ, R., DUBOVSKÝ, M, FEDOR, P., SIERKA, W., 2009. First record of *Hoplothrips corticis* (DeGeer, 1773) (Thysanoptera, Phlaeothripidae) in Slovakia. Thysanopteron Pismo Entomologiczne, 5 (1): p. 1-3.

MASAROVIČ, R., FEDOR, P., DUBOVSKÝ, M, DORIČOVÁ, M., SIERKA, W., 2011. The first record of bark-dwelling thrips – *Poecilothrips albopictus* Uzel, 1895 (Thysanoptera, Phlaeothripidae) in Slovakia. Thysanopteron Pismo Entomologiczne, 6 (1): p. 1-2.

MASAROVIČ, R., FEDOR, P., ZVARÍKOVÁ, M., 2014. Silvikolné Thysanoptera v indikácii dynamiky a disturbancie lesného ekosystému v podmienkach Tatranského národného parku. Vydavateľstvo UK, Bratislava, 204 pp.

MOUND, L. A., MARULLO, R., 1996. The thrips of central and south America: an introduction (Insecta: Thysanoptera). Associated Publishers, Gainesville, USA., 487 pp.

MOUND, L. A., MORISON G. D., PITKIN B. R., PALMER J. M. 1976. Thysanoptera, Vol. 1. Small Orders, Part 11, In: Watson A. (ed.), Handbooks for the Identification of British Insects, Royal Entomological Society of London, London, pp. 3-79.

OKAJIMA, S., 1987. Studies on the Old World species of *Hoplothrips* (Thysanoptera: Phlaeothripidae). Bull. Br. Mus. Nat. Hist. Ent., London, 54 (1), 74 pp.

PELIKÁN J., FEDOR P., KRUMPÁL M., CYPRICH D. 2002 Thrips (Thysanoptera) in nests of birds and mammals in Slovakia. Ekológia (Bratislava), 21 (3): p. 275-282.

PELIKÁN, J., 1945. Další příspěvek k poznáni našich třásněnek [Another contribution to knowledge of our thrips] . Entomol. Listy, 8: 116 – 120.

PELIKÁN, J., 1955. *Oxythrips tatricus* sp. n. neznámy druh třásněnky z kosodřeviny. Zool. Entomol. Listy, 18: p. 21-28.

PELIKÁN, J., 1957. Řád třásnokřídlí – Thysanoptera. In: Kratochvíl J. (ed.): Klíč zvířeny ČSR, ČSAV, Praha, 2: p. 9-34.

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PELIKÁN, J., 1977. *Thysanoptera*. In: Dlabola J. (ed.): Check list – Enumeratio insectorum bohemoslovakiae. Acta faun. entomol. Mus. nat. Pragae, 15 (4): p. 55-59.

PELIKÁN, J., 1995. Thysanoptera. Terrestrial Invertebrates of the Pálava Biosphere Reserve of UNESCO. Folia Fac. Sci. Nat. Univ. Masarykianae Brunensis, Biológia 92: p. 137-146.

PRIESNER, H., 1926. Die Thysanopteren Europas. Wagner-Verlag, Wien, 755 pp.

PRIESNER, H., 1964. Ordnung Thysanoptera (Fransenflügler, Thripse). Akademie-Verlag, Berlin, 242 pp.

VARGA L, FEDOR, P. J, 2008. First interception of the greenhouse pest *Echinothrips americanus* Morgan, 1913 (Thysanoptera: Thripidae) in Slovakia. Plant Protection Science 44 (4): p. 155-158.

VIERBERGEN G., DE JONG Y. 2013. Fauna Europaea: Thysanoptera, Thripidae. Fauna Europaea (version 2.6.2). http://www.faunaeur.org. (accessed 10.05.2014).