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HOPLOTHRIPS POLYSTICTI (MORISON, 1949) (THYSANOPTERA, PHLAEOTHRIPINAE) - FIRST RECORD OF THE MYCETOPHAGOUS THRIPS IN THE HIGH TATRA MOUNTAINS IN SLOVAKIA

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ABSTRACT. The research of mycophagous and bark-dwelling thrips has been run in Slovakia almost one decade. In this regard, we provide another information about the first record of the fungivorous thrips Hoplothrips polysticti (Morison, 1949) in Slovakia. This species was found in the oldest Slovak National Park Vysoké Tatry (High Tatra) Mountains, close to the Tatranská Lomnica village (N Slovakia). The material was obtained using a soil photoeclector.
KEY WORDS: mycetophagous thrips, Phlaeothripidae, Vysoké Tatry (High Tatras) Mts.

Introduction

Thysanoptera is a well known insect order by their phytopatogenic and invasive potential, but not too much is known about the bionomy of the mycophagous thrips. The genus *Hoplothrips* represents very large genus, which contains one hundred and thirty species (MOUND et WALKER, 1986) widespread in most parts of the world (MOUND et al., 1976). In spite of this diversity only 20 species are known from Europe (VIERBERGEN et de JONG, 2013) and 9 species from Slovakia (FEDOR et al., 2012).

Hoplothrips species are almost all mycophagous. Fungivorous thrips species live in different microhabitats, such as leaf litter, decaying wood, trunks, branches and the bark of the trees with presence of the fungi. Faded leaves, hanging in the clusters from the trees, represent the specific habitat (MOUND, 1972a, 1972b, 1972c, 1974a, MOUND et PALMER, 1983, KOBRO, 2007, ANANTHAKRISHNAN, 1984). Moreover, there are many species of fungi inside of the branches and shoots cracks (KOBRO et SOLHEIM, 2002). Many thrips species live here in the colony and the males protect the places of the oviposition (KETTUNEN et MARTIKAINEN, 2005). The branches with the covering of fungi provide very good conditions for the numerous generations of the *Hoplothrips* species (KOBRO et RAFOSS, 2006). The species representing the genus *Hoplothrips* are considered rare, but some are simply more likely to be overlooked (KOBRO, 2001, SCHLIEPHAKE and KLIMT, 1979). Their cryptic habitat and small size play the crucial role in the fragmentary knowledge of their bionomy (MOUND, 2005).

The extreme polymorfism of *Hoplothrips* adults may cause big obstacles in correct identification of the specimens (OKAJIMA, 1987, KOBRO et RAFOSS, 2006). This may be the reason, why there are many determination books, that do not provide uniform and simple ability for the reliable identification of *Hoplothrips* adults (PRIESNER, 1926, 1964, MOUND et al. 1976, SCHLIEPHAKE et KLIMT, 1979, MOUND et WALKER, 1986, KIRK 1996, MOUND et MARULLO 1996). KOBRO and RAFOSS (2006) created a new

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identification key with all eight *Hoplothrips* species (adults) recorded from Norway. They were chosen thirteen strong characters based mainly on the chaetotaxy and comparison of reliable intervals calculated from the measurements of the characters. According to this article and the identification key of SCHLIEPHAKE et KLIMPT (1979) we determined species *Hoplothrips polysticti* (MORISON, 1949) as a new record for Slovakian thrips fauna.

Hoplothrips polysticti can be easily identified by shorter, mediolateral satae on pronotum (less than 100 μm). Distance between the medioposteromarginal setae on tergite IX is shorter than the distance of tubus width. The forth antennal segment bears more than two sense cones. Distance between the bases of antennal segments I measures less than 16 μm and width of this segment is less than 36 μm. Antenal segment IV is shorter than 68 μm and equally tapering of the medioposteromarginal setae on the eighth tergite (KOBRO et RAFOSS, 2006).

Hoplothrips polysticti belongs to the bark-dwelling and mycetophagous phlaeothripid thrips that feed on fungus or on extra-cellular products of the fungal decay. Very comprehensive article about *Hoplothrips polysticti* had been published by KOBRO (2001), who collected 300 specimens of this species in Norway on 48 logs infested by *Trichaptum abietinum*. The majority of the *Hoplothrips polysticti* specimens were obtained mostly from the semi-old forest stands in comparison with the old and managed study plots and only a few of them were sampled from uninfested logs. Moreover, prepared thrips were covered by fungal spores (KOBRO, 2001). The polypore *Trichaptum abietinum* (J. Dicks.) Ryvarden (fam. Coriolaceae) belongs to the most common wood-rotting fungi on Norway spruce (*Picea abies*) and Scots pine (*Pinus sylvestris*) (RYVARDEN et GILBERTSON, 1994) and is known also from Slovakia. KOBRO (2001) supposed, that *Hoplothrips polysticti* feeds on and has very close relationship with *Trichaptum abietinum*. *Hoplothrips polysticti* was proposed as a vector of this fungi. In spite of that, it did not mean, that this species was strictly monophagous and could not occur on different fungi and habitats.

The species of *Hoplothrips polysticti* has North-European origin of distribution and represents the common and abundant species in Scandinavia. In spite of that, *Hoplothrips polysticti* belongs to rare and infrequent thrips species in Europe (MOUND et al, 1976). It is known only from Great Britain (Scotland), Norway, Sweden (VIERBERGEN et de JONG, 2013) and Poland (KUCHARCZYK et al., 2014). Our paper refers to the area of the High Tatra Mts. (Vysoké Tatry) situated in the north of Slovakia, which is characterised by the occurrence of the spruce (*Picea abies*) forests in high altitudes and by the presence of animals that prefer the habitats with the cold and moist climate conditions. Weather here resembling those in the Scandinavia. In this regard, many cryophilic and hygrophilous species of animals and plants from northern latitudes occur here. Furthermore, *Trichaptum abietinum* represents the component of the present biological community.

One male specimen of *Hoplothrips polysticti* was recorded at the meadow (Fig.1.) in the centre of the Veľký les forest over the Tatranská Lomnica village (49°10'30.02" N, 20°14'48.64" E) (Fig.2.). Study plot is characterised by fallen and decomposed trunks of the spruce trees (*Picea abies*), which are covered by wood-destroying fungus. The area of the meadow is 0,15 ha and altitude reaches 1050 metres above sea level. Rosebay willowherb (*Chamaenerium angustifolium*) and

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European blueberry (*Vaccinium myrtillus*) are the dominant species of the plant community. The locality is in the close contact with 140 years old forest of *Vaccinio myrtilli-Piceetum* (*Picea abies* (52 %), *Larix decidua* (46 %) and *Pinus cembra* (2 %)).

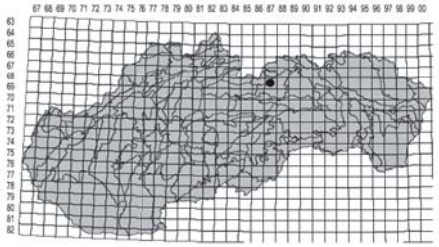
Hoplothrips polysticti specimen was sampled by the soil photoeclector that is usually applied to observe eclosion phenology in various geobiont invertebrates (MAJZLAN and FEDOR, 2005, 2009). Traps were installed at the study plot for the period of 106 days (June 6,2013 – September 19, 2013).

Material examined

High Tatra Mts. (Vysoké Tatry, N Slovakia), SE slope near cableway station Start, at the meadow in the centre of the Veľký les forest (Fig. 2), over the Tatranská Lomnica village (49°10´N, 20°14´E): 4. August 2013, 1 ♂ specimen, method: the soil photoeclector. Leg. R. Masarovič, Det. R. Masarovič and M. Zvaríková, Col. R. Masarovič.

Fig.1. The locality of *Hoplothrips polysticti* (Photo: R.Masarovič)

Fig.2. Study area in the map of Slovakia



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