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Trichopoda pictipennis Bigot, 1876 in Hungary (Diptera: Tachinidae)

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Abstract – The occurrence of *Trichopoda pictipennis* Bigot, 1876 (Diptera: Tachinidae) is confirmed from Hungary for the first time.

Keywords – faunistics, new record, distribution, parasitism, *Nezara viridula*

INTRODUCTION

Trichopoda pictipennis Bigot, 1876 (Diptera: Tachinidae) is a member of Phasiinae, a subfamily comprising species that are almost exclusively parasites of Heteroptera (Mihályi 1986). *Trichopoda pictipennis* is a larval endoparasitoid, primarily targeting stink bugs (Pentatomidae), but it is also known to parasitise species of Coreidae, Alydidae, and Pyrrhocoridae (Arnaud 1978). This species was misidentified as *Trichopoda pennipes* (Fabricius, 1781) by Colazza *et al.* (1996), adopted by a number of subsequent studies (De Groot *et al.* 2007, Cerretti & Tschorsnig 2010, Bystrowski 2012, El-Hawagry *et al.* 2020). Recent studies (Dios & Nihei 2020, Dios *et al.* 2021) clarified the identity of the species, indicating that the species currently spreading in Europe is, in fact, *Trichopoda pictipennis*. Its host is *Nezara viridula* (Linnaeus, 1758) (Heteroptera: Pentatomidae); this pentatomid species was reported from Hungary first by Rédei & Torma (2003) and it has become a significant invasive pest since then (Korányi *et al.* 2015, Kóbor 2017, Gibicsár *et al.* 2024).

Trichopoda pictipennis is native to South America (Dios & Nihei 2020). It has been accidentally introduced into Italy (Colazza *et al.* 1996) from where it subsequently spread to several other countries across Europe and the Mediterranean region (De Groot *et al.* 2007, Freidberg *et al.* 2011, Obrecht 2014, El-Hawagry *et al.* 2020, Kazilas *et al.* 2020, Ricarte *et al.* 2020,

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Meriem *et al*. 2021, Mortelmans 2021). The first mention of the species from Hungary dates back to 2013, when a photograph published online depicting *Nezara viridula* with suspected *Trichopoda pictipennis* eggs[**] prompted Colazza *et al.* (2020) to list the parasitoid fly species as present in Hungary (as *Trichopoda pennipes*). However, due to the lack of any voucher specimen, this record remains uncertain. Although *Trichopoda pictipennis* has been observed several times in Hungary since 2013, these sightings were not formally documented and lack voucher specimens. The aim of this paper is to present the first confirmed records of *Trichopoda pictipennis* from Hungary.

The voucher specimens are dry-preserved and pinned, and are deposited in the Diptera Collection of the Hungarian National Museum Public Collection Centre – Hungarian Natural History Museum, Budapest (HNHM). Prepared genitalia are preserved in microvials, in glycerol, pinned under the specimens. The specimens were identified by the first author, based mostly on Dios & Nihei (2020).

RESULTS

Trichopoda pictipennis Bigot, 1876
(Figs 1–7)

Material examined – One female, Hungary, Vajta, 31.VIII.2024, leg. Dávid Horváth; one female, Pétfürdő, 6.IX.2024, leg. Mária Éva Bondor; one male, same locality and collector as previous specimen but 19.IX.2024.

Further observations – Besides the voucher specimens reported above, there have been a few other observations in Hungary; however, the specimens unfortunately were not collected, only photos were made. Here we list these observations in chronological order: one female photographed in Zalabér on 18.IX.2023 by József Vikár[***]; one male photographed in Zalabér on 8.XI.2023 by József Vikár[****]; one female photographed in Pétfürdő on 8.VII.2024 by Mária Éva Bondor[*****]; one female photographed in Balatonföldvár on 23.VII.2024 by Zsolt Kovács[******]; one male and one female in copula photographed in Pécs on 3.IX.2024 by Csilla Nagy[*******].

** https://nagyelte.blogspot.com/2014/10/trichopoda-pennipes-fly-parasitizing.html
*** https://www.izeltlabuak.hu/talalat/493903
**** https://www.izeltlabuak.hu/talalat/493902
***** https://www.gbif.org/occurrence/4907492280
****** https://www.gbif.org/occurrence/4911260077
******* https://www.izeltlabuak.hu/talalat/493811

Figs 1–2. Field photos of *Trichopoda pictipennis* Bigot, 1876, 1 = copula, 2 = female (photos by Csilla Nagy (Fig. 1) and Zsolt Kovács (Fig. 2))

Figs 3–4. Voucher specimens of *Trichopoda pictipennis* Bigot, 1876, dorsal view, 3 = male, 4 = female (photos by Nimród Varga)

Figs 5–6. Voucher specimens of *Trichopoda pictipennis* Bigot, 1876, lateral view, 5 = male, 6 = female (photos by Nimród Varga)

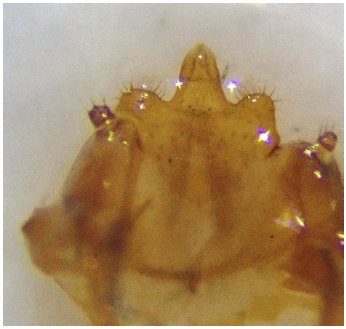

Fig. 7. Male genitalia of *Trichopoda pictipennis* Bigot, 1876 (photo by Nimród Varga)

Remarks – First records of the species from Hungary confirmed by voucher specimens. The occurrence of the species in Hungary has been expected, considering its presence in the neighbouring countries such as Slovenia and Croatia (De Groot *et al*. 2007, Bystrowski 2012) and its ongoing expansion throughout the Mediterranean area following its initial introduction to Italy in 1988 (Colazza *et al*. 1996). The available data suggest that currently *Trichopoda pictipennis* primarily occurs in western Hungary.

Biological control – The spread of *Trichopoda pictipennis* may hold implications beyond faunistic research. Its primary host, *Nezara viridula*, is a major agricultural pest that also negatively impacts the quality of life in urban environments by causing nuisance and potentially triggering allergies through its defensive secretions (Todd 1989). Therefore, the potential of *Trichopoda pictipennis* in reducing populations *Nezara viridula* is of considerable public interest. Salerno *et al.* (2002) showed that parasitism by *Trichopoda pictipennis* can inflict 24.8% of *Nezara viridula* populations in Italy. However, despite the high prevalence of the parasitic fly species, *Nezara viridula* has not become less common in Italy (Laterza *et al.* 2022). Therefore, the presence of *Trichopoda pictipennis* in Hungary will unlikely have a major impact on the populations of *Nezara viridula*.

Proposed Hungarian name – "tollaslábú poloskalégy", in allusion to the morphology of legs and the host preference of the species.

*

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