

A new host and faunistic record of the big-headed fly *Nephrocerus flavicornis* ZETTERSTEDT (Pipunculidae, Diptera) from Romania

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Summary: The cranefly *Tipula (Lunatipula) helvola* LOEW (Tipulidae, Diptera) was identified as a new host for big-headed fly *Nephrocerus flavicornis* ZETTERSTEDT (Pipunculidae, Diptera). This big-headed fly is noted as new to Romania.

Keywords: big-headed flies, Tipulidae, *Tipula*, first record

Introduction

The genus *Nephrocerus* ZETTERSTEDT represent a basal lineage within the Pipunculidae (big-headed flies) (SKEVINGTON 2005, SKEVINGTON *et al.* 2007) and only within the past decade it has been discovered that the members of this genus are endoparasitoids of adult crane flies (Tipulidae, Diptera) (KEHLMAYER and FLOREN 2010, KOENIG and YOUNG 2007, Skevington 2005). Three *Nephrocerus* species are known to occur in Europe (GROOTAERT and DE MEYER 1986). A larva of *Nephrocerus scutellatus* was found in the abdomen of a female *Tipula (Lunatipula) helvola* LOEW, and a *Nephrocerus flavicornis* larva was extracted from a female *Tipula (Beringotipula) unca* WIEDEMANN (KEHLMAYER and FLOREN 2010). Of these two big-headed fly species only *N. scutellatus* (MACQUART) was reported previously from Romania (MEYER 2017).

Material and methods

Specimens were collected in the Mureş Valley near to Andreoneasa (46.9614° N 25.0369° E), Romania on the 25th July 2017. The adult *Nephrocerus flavicornis* was pinned, whilst the larva and the host, *Tipula helvola* were preserved in 98% ethanol. The material is stored in the Diptera Collection of the Faculty of Biology and Geology, Babeş-Bolyai University, Cluj-Napoca, Romania (DCBBU).

Results

A male *Nephrocerus flavicornis* ZETTERSTEDT (Fig. 1) was collected in the Mureş Valley near to Andreoneasa, which represent the first record from

Romania. In the same location two parasitized female *Tipula (Lunatipula) helvola* LOEW were observed and later collected. The females were noted to sit on ferns and showed a reluctance to fly and would only do so after prolonged disturbance. They were observed to fly awkwardly and only flew a short distance (max 1.5 m). It was observed that the abdomens of these parasitized females were notably distended in the first third, while in non-parasitized females the abdomen is always widest in the middle or a little after the middle, which allowed easy separation of parasitized females in the field. Upon catching the parasitized females a *Nephrocerus* larva immediately vacated one of the hosts (Fig. 2). Later the larvae were identified as *N. flavicornis*, based on the shape of the cephaloskeleton (KEHLMAYER and FLOREN 2010), which was previously unknown to parasitize *Tipula helvola*.

Acknowledgements

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References

- GROOTAERT P. and De MEYER M. (1986) On the taxonomy and ecology of *Nephrocerus* ZETTERSTEDT (Diptera, Pipunculidae) with a re-description of *N. lapponicus* and a key to the European species. *Bulletin van het Koninklijk Belgisch Instituut voor Natuurwetenschappen, Entomologie*, 56: 85-91.
- KEHLMAYER C. and FLOREN A. (2010) Pipunculidae (Diptera) collected by canopy-fogging in the Białowieża Forest (Poland), including first host records and larval descriptions of two Palaearctic *Nephrocerus* ZETTERSTEDT. *Studia dipterologica* 16: 169-181.

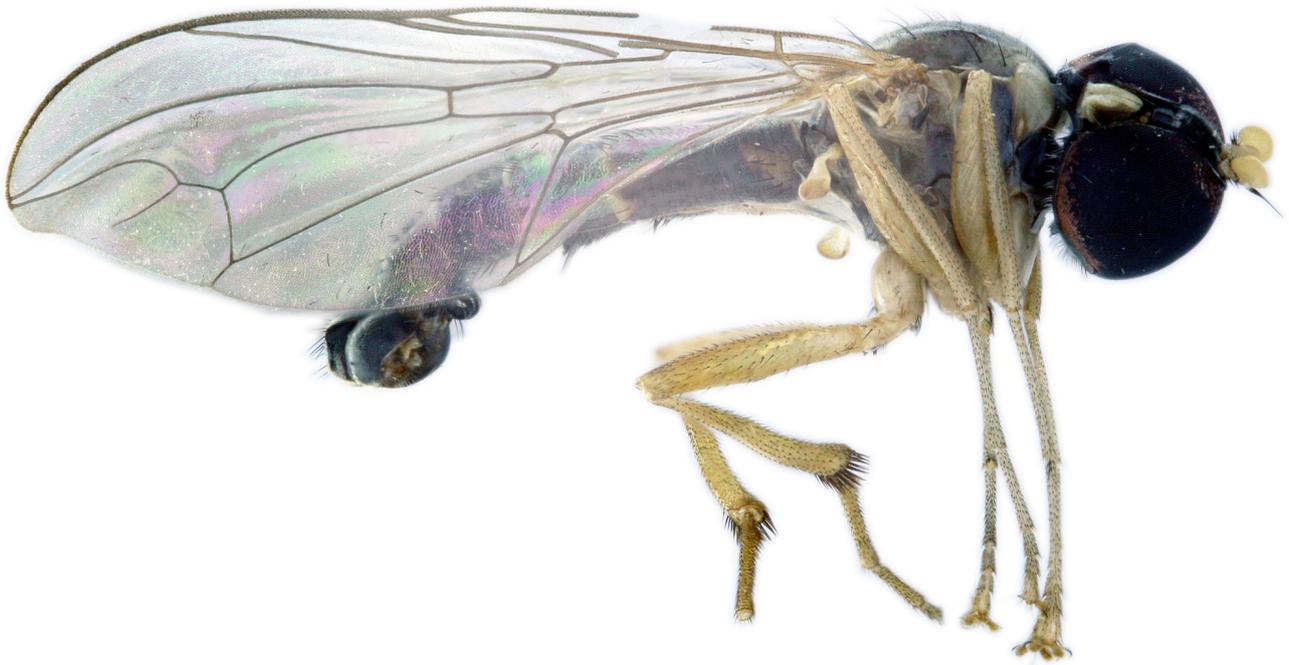


Fig. 1. *Nephrocerus flavicornis* ZETTERSTEDT male.

KOENIG D. P. and YOUNG C. W. (2007) First observation of parasitic relations between big-headed flies, *Nephrocerus* ZETTERSTEDT (Diptera: Pipunculidae) and crane flies, *Tipula* LINNAEUS (Diptera: Tipulidae Tipulinae), with larval and puparial descriptions for the genus *Nephrocerus*. *Proceedings of the Entomological Society of Washington* 109(1): 52-65.

MEYER, M. (2017) Fauna Europaea: Pipunculidae. In: PAPE T. and BEUK P. (eds.) *Fauna Europaea: Diptera, Brachycera*. <https://fauna-eu.org/> Accessed on 09.11.2017

SKEVINGTON J.H. (2005) Revision of Nearctic *Nephrocerus* ZETTERSTEDT (Diptera: Pipunculidae). *Zootaxa* 977(1): 1-36.

SKEVINGTON J.H., KEHLMAIER C. and STAHL G. (2007) DNA Barcoding: Mixed results for big-headed flies (Diptera: Pipunculidae). *Zootaxa* 1423(1): 1-26.

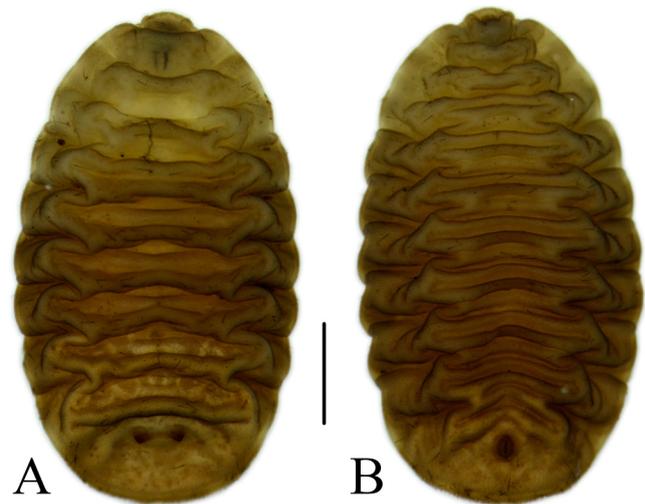


Fig. 2. *Nephrocerus flavicornis* ZETTERSTEDT larva. A. dorsal view. B. ventral view. Scale bar 1 mm.

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