Journal of Threatened Taxa

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ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

Short Communication

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26 June 2019 | Vol. 11 | No. 8 | Pages: 14062–14064
DOI: 10.11609/jott.4797.11.8.14062-14064

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Journal of Threatened Taxa | www.threatenedtaxa.org | 26 June 2019 | 11(8): 14062–14064

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PLATINUM
OPEN ACCESS

First record of black scavenger fly of the genus *Meroplius* Rondani, 1874 (Diptera: Sepsidae) from Pakistan

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Abstract: A new record is added to the black scavenger fly fauna of Pakistan by the reporting of *Meroplius minutus* (Wiedemann, 1830), a rare species from Rawalakot, Azad Jammu & Kashmir, Pakistan. The genus is also a new record for the country. Diagnostic characters of both the genus and the species are provided in detail with the help of images. In addition, detailed distribution notes and information about their habitats are provided.

Keywords: *Meroplius minutus*, new record, Rawalkot, saprophagous fly.

The family Sepsidae (Diptera) is a moderately large, cosmopolitan group of saprophagous flies with over 300 extant species recorded from all zoogeographic regions (Ozerov 2005). About 23 species have been described under the genus *Meroplius* Rondani, 1874 till date. At present, this genus is known from all zoogeographic regions except the Antarctic (Ozerov 2018). The majority of the *Meroplius* species is distributed in the Afrotropical region (13). At present, eight species are listed from the Oriental region by Ozerov (2005), namely *M. beckeri* (de Meijere, 1906), *M. elephantis* Iwasa, 1994, *M. maximus* Iwasa, 1994, *M. mirandus* Iwasa, 1994, *M. sauteri* (de Meijere, 1913), *M. wallacei* Iwasa, 1994, *M. fasciculatus* (Brunetti, 1910), and *M. minutus* (Wiedemann, 1830). *Meroplius fasciculatus* is widely distributed in the Australasian/Oceanian, Oriental, and Palaearctic regions and *M. minutus* (Wiedemann, 1830) in the Nearctic, Oriental, and Palaearctic regions and in Europe and northern Africa.

Taxonomic work on Sepsidae from Pakistan was done by Iwasa (1989) and Hassan et al. (2017a,b). So far, 27 species under the subfamily Sepsinae in eight genera have been recorded from Pakistan. The objective of this study was to determine the occurrence of the genus *Meroplius* Rondani, 1874 in the country.

Materials and Methods

During the collection of saprophagous flies from Pakistan, including Gilgit-Baltistan and Azad Jammu & Kashmir, in 2016–2018, four male specimens of *Meroplius minutus* (Wiedemann, 1830) were collected from Rawalakot (Azad Kashmir). Specimens were deposited at the National Insect Museum, Pakistan. Identification was done with the help of Iwasa (1995), Pont & Meier (2002), and Letana (2014). The specimens were photographed using a Nikon Digital camera attached to a Olympus SZX7, Model SZ2-ILST stereo-microscope. Adobe Photoshop CS 6.0 was used to achieve clarity in the images. Morphological terminology follows Pont & Meier (2002).

DOI: https://doi.org/10.11609/jott.4797.11.8.14062-14064 | **ZooBank:** urn:lsid:zoobank.org:pub:FE57993E-D74C-4B09-9679-7BC22B767AF7

Editor: R.M. Sharma, Zoological Survey of India, Pune, India. **Date of publication:** 26 June 2019 (online & print)

Manuscript details: #4797 | Received 06 January 2019 | Final received 01 June 2019 | Finally accepted 12 June 2019

Citation: Fatima, N., A. Tamkeen & M.A. Hassan (2019). First record of black scavenger fly of the genus *Meroplius* Rondani, 1874 (Diptera: Sepsidae) from Pakistan. *Journal of Threatened Taxa* 11(8): 14062–14064. https://doi.org/10.11609/jott.4797.11.8.14062-14064

Funding: None.

Competing interests: The authors declare no competing interests.

Results

During the present study, we reported *Meroplius minutus* (Wiedemann, 1830) for the first time from Pakistan. The detailed diagnostic characters of both the genus and species, their images, distribution, and information on habitats are provided.

Taxonomy

Family Sepsidae

Genus *Meroplius* Rondani, 1874

Diagnostic characters: Head: roundish or slightly flattened dorsoventrally, arista bare. Chaetotaxy: fronto-orbital bristle developed and outer vertical setae present (Fig. 1a). Wing: devoid of black spots (Fig. 1); cells bm (basal medial cell) and br (basal radial cell) separate, alula well-developed or moderate and completely covered with microtrichose. Thorax: humeral bristle present and acrostichal setae absent, forelegs in male with distinct setae. Abdomen: without constriction after syntergite 1+2 (Fig. 1c).

Meroplius minutus (Wiedemann, 1830) (Image 1a–c)

Synonyms: *Sepsis minuta* Wiedemann, 1830: 468; *Sepsis lutaria* Fallén, 1820b: 22; *Nemopoda stercoraria* Robineau-Desvoidy, 1830: 745; *Nemopoda nigrilatera* Macquart, 1835: 481; *Sepsis rufipes* Meigen, 1838: 349; *Nemopoda varipes* Walker, 1871: 345; *Nemopoda polita* Duda, 1926a: 96, 98.

Material examined: National Insect Museum, Diptera Section, Reg. No. 200, 4 ex., male, 25.ix.2016, Pakistan, Azad Jammu & Kashmir, Rawalakot (Thandi Kasi), 33.850^{0}N & 73.800^{0}E, 1,524m, coll. M.A. Hassan.

Diagnostic characters: This species can be easily diagnosed by the presence of outer vertical and orbital seta with basal scutellar seta absent, apical distinct. The wings are devoid of black spots. Male fore femur on distally two ventral spines, straight (Fig. 1b); forelegs yellow, mid- and hind legs basally yellowish, remaining brownish (Fig. 1c). The detailed diagnostic characters of both the adult and the juvenile were provided by Pont & Meier (2002).

Distribution: Pakistan (new record), Nepal, China, Japan, Korea, Republic of Georgia, and Russia in Asia, Europe, and Egypt in northern Africa (Ozerov 2005).

Discussion

The adult species of *Meroplius* Rondani, 1874 are particularly attracted towards unclean habitats: human excrement, the faecal mass of cattle in pens, pig dung, rotting fungi, rabbit hutches, decaying cabbages, rotting vegetables, and fish and animal carrion (Pont & Meier 2002). The species also carry forensic importance as they are abundant in the mid- to late stages of decomposition of carcasses (Tabor 2004). During our present study, we recorded *M. minutus* from rotten meat and the bones of animals near a slaughterhouse. This was the only record of the species from Rawalakot (Azad Kashmir) during our extensive collection of saprophagous flies in 2016–2018 in the mountainous areas of Gilgit-Baltistan, forest areas in Poonch District of Azad Jammu & Kashmir, and Pothwar region of Punjab; this indicates that the species is not common in Pakistan, as Van der Goot (1987) suggested. He stated that the decline of this species might be due to improved methods of sewage management and the

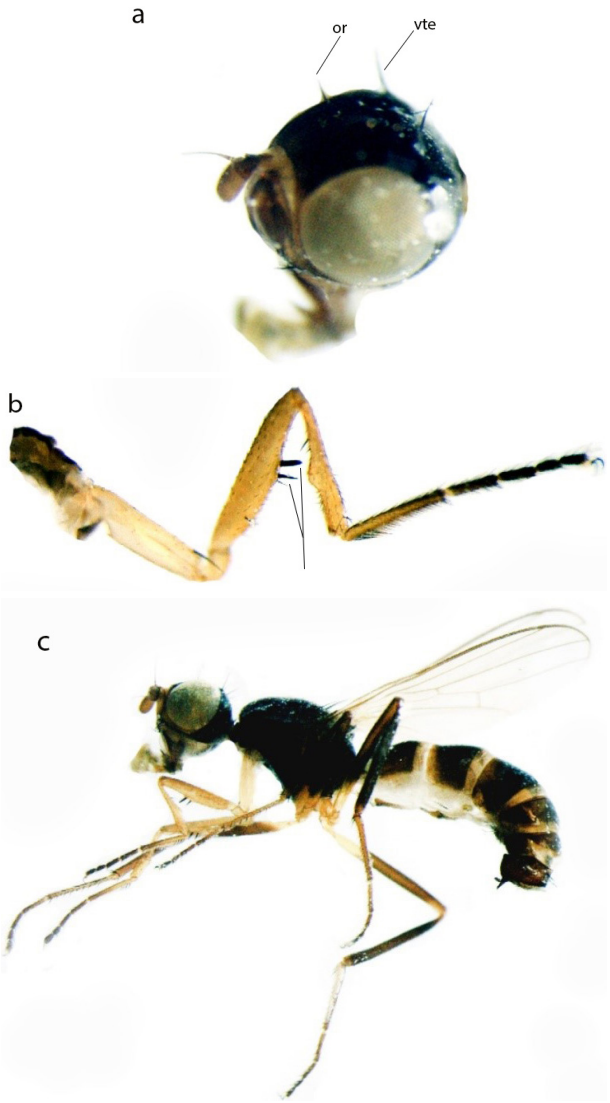

Image 1. Male specimen of *Meroplius minutus* (Wiedemann, 1830): a - oblique lateral view of head (or - orbital seta, vte - outer vertical seta) | b - anterior view of foreleg and tibia with two ventral spines | c - lateral view of habitus. © N. Fatima.

liberal use of poisonous toilet-cleaning chemicals. The species is considered rare in Japan (Iwasa 1984) and in central and eastern Europe (Pont & Meier 2002).

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Journal of Threatened Taxa

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PLATINUM OPEN ACCESS

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

June 2019 | Vol. 11 | No. 8 | Pages: 13951–14086
Date of Publication: 26 June 2019 (Online & Print)
DOI: 10.11609/jott.2019.11.8.13951-14086

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