



New distributional record of the genus *Dicranosepsis* (Duda, 1926) (Diptera: Sepsidae), with a new record from Pakistan

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ABSTRACT. Three species of the genus *Dicranosepsis* (Duda, 1926) are taxonomically treated in this paper. *Dicranosepsis bicolor* (Wiedemann, 1830), *D. crinita* (Duda, 1926) and *D. olfactoria* (Iwasa, 1984) are recorded for the first time from the Narowal region of the Punjab, Pakistan. *Dicranosepsis crinita* (Duda, 1926) is recorded for the first time in Pakistan. Illustrated keys and local distribution data for these three known species of the genus are also provided.

Key words: Distribution, New record, *Dicranosepsis*, Sepsidae, Narowal, Pakistan.

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Introduction

Black scavenger flies (Diptera: Sepsidae), with more than 330 described species, are commonly distributed in all zoogeographical regions of the world (Ozerov, 2005; Ozerov & Krivosheina, 2011). The taxonomic study of the black scavenger flies from Pakistan was undertaken by contributors to the "Zoogeographical Studies on the Medically Important Diptera in Southwest Asia" during 1987–1988 and they reported 25 species with eighteen new country records and described three species as new to science (Iwasa, 1989).

At present the genus *Dicranosepsis* (Duda) consists of thirty species worldwide (Ozerov, 2005). The species of this genus

are widely distributed in the Oriental region: China (7 species), Pakistan (5 species), India (7 species), Nepal (10 species), Australasia (3 species) and Afrotropical (1 species). The adults of this genus are mostly found on dung, excrement, manure heaps and decaying matter and the larvae of some species are known to occur on both cow dung and human excrement (Meier, 1996; Ozerov, 2005). The distributional and taxonomic data for this genus in India was documented by Zuska (1977). Iwasa (1989) reported three species under this genus in Pakistan and described *Dicranosepsis quadrigemina* (Iwasa, 1989) as a new species.

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Xia and Zhou (2008) worked on the taxonomy of the genus *Dicranosepsis* and added five species to the Sepsid fauna of China. They also constructed the identification keys and recorded five new species of this genus from China.

Iwasa (1989) reported three species of the genus *Dicranosepsis* (Duda, 1926) of the subfamily Sepsinae from Pakistan. Later, Ozerov (2005) listed 5 species under this genus from Pakistan. The taxonomic research into this genus is still very poor and needs to be explored in more depth from Pakistan. Recently, we had the opportunity to examine specimens of this genus from Narowal region, Punjab, Pakistan.

Material and methods

The present study was based on specimens collected during 2017 from grasses, and also from the dung of various animals from Narowal region, Punjab, Pakistan. The specimens were examined under an Olympus SZX7, Model SZ2-ILST light stereomicroscope. Photographs were prepared under a Nikon SMZ 1500 binocular microscope attached to a Nikon Digital Sight DS-Fi1 camera and identified by using the available literature: Iwasa (1980), Iwasa (1984), Iwasa (1989), Iwasa (1995), Letana (2014) and Xia and Zhou (2014). For the taxonomic classification Ozerov (2005) and Iwasa and Thinh (2008) were followed. The identified specimens were deposited with the Department of Entomology, Pir Mehr Ali Shah Arid Agricultural University, Rawalpindi, Pakistan.

Results

In the present study *Dicranosepsis crinita* (Duda, 1926) is recorded for the first time from Pakistan. Also three species viz. *D. bicolor*, *D. crinita* and *D. olfactoria* are recorded for the first time from Narowal

region, Punjab, Pakistan. Illustrated keys to these three known species of the genus are also provided.

Family Sepsidae Walker, 1833

Key to the known species of the genus *Dicranosepsis* (Duda, 1926) from Narowal region, Punjab.

1. Male hind tibia with distinct osmeterium (Fig. 1); mid tibia submedian bend (Fig. 2).*D. olfactoria*
- Male hind tibia without distinct osmeterium; mid tibia normal, not bent.2
2. Male fore femur without distinct median ventral process, 1 or 2 anteroventral setae (Fig. 3).*D. bicolor*
- Male fore femur with one median ventral process, bearing 1 long and 2 short spines (Fig. 4); fore trochanter without ventral triangular projection. *D. crinita*

Genus *Dicranosepsis* Duda, 1926

This genus is characterized by the following characteristics: first and second basal cells (basal radial and basal medial) separated, outer vertical and mesopleural seta present, middle tibia normal not bent, humeral seta present, hypopygial process bifurcated at the tip and abdomen without distinct bristles.

1. *Dicranosepsis bicolor* (Wiedemann, 1830) (Fig. 3)

Material Examined (26 ex.): Narowal, 32° 5'58.1136"N, 74°52'29.0388"E, 237m, 25♂, 25.iii.2017; Bola Bajwa, 800 ft, 1♂, 25.iii.2017, leg. M.A. Aslam.

Distribution in Pakistan: Ayubia Gali, Balakot, Dir, Dunga Gali, Kagan, Marghazar, Nathia Gali, Swat (Khyber Pakhtunkhwa), D.I. Khan, Murree (Punjab) (Iwasa 1989).

World Distribution: China, India, Nepal, Sri Lanka, Thailand, Vietnam (Iwasa & Jayasekera, 1994; Ozerov, 2005).



Figures. 1-2. *Dicranosepsis olfactoria* (posterolateral view of male: 1): hind leg, 2): middle leg, 3. *D. bicolor* (anterolateral view of male: fore leg). Figures 4-5. *D. crinita* (posterolateral view of male): 4): fore leg, 5): general lateral view

2. *Dicranosepsis olfactoria* (Iwasa, 1984)
(Figs. 1-2)

Material Examined (5 ex.): Narowal, 32°5' 58.1136"N, 74°52'29.0388"E, 237m, 2♂, 25.iii.2017; Bola Bajwa, 4♂, 800 ft, 25.iii.2017, leg. M.A. Aslam.

Distribution in Pakistan: Besham, Dir, Dunga Gali, Kagan, Kalam, Kawai, Marghazar, Miandam, Nathia Gali, Shangla Pass, Swat, Ushu (Khyber Pakhtunkhwa), D. I. Khan, Islamabad, Murree (Punjab), Quetta (Baluchistan) (Iwasa, 1989).

World Distribution: Nepal, Vietnam (Ozerov, 2005).

3. *Dicranosepsis crinita* (Duda, 1926)
(Figs. 4-5)

Material Examined (9 ex.): Narowal, 32° 5' 58.1136"N, 74°52'29.0388"E, 237m, 7♂,

25.iii.2017; Bola Bajwa, 800 ft, 2♂, 25.iii.2017, leg. M.A. Aslam.

Distribution: Pakistan (New record).

World Distribution: India, Malaysia, Nepal, Sri Lanka, Thailand (Iwasa & Jayasekera, 1994; Ozerov, 2005).

Discussion

The taxonomic work on the black scavenger flies (Diptera: Sepsidae) from Pakistan were done by Iwasa (1989), reported 25 species of which 18 were new country records, and Hassan *et al.* (2017) reported 4 species under 2 genera for the first time from district Skardu. The taxonomic work on this genus is still need to be explored from Pakistan. Recently, we had the opportunity to examine the specimens of this genus from Narowal

region, which are rich in biodiversity due to its surrounding areas as Indian states of Punjab and Rajasthan in east, Azad Kashmir and Indian held Jammu and Kashmir in north-east, province of Sindh to the south, Balochistan province to southwest, province of Khyber Pakhtunkhwa to west and Capital Territory (Islamabad) in north. The present study provided the illustrated keys, local distributional records of these three known species of the genus are also provided.

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Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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گزارش جدید از انتشار جنس (*Diptera: Sepsidae*) *Dicranosepsis* (Duda, 1926) در پاکستان و گزارش جدید یک گونه

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چکیده: سه گونه از جنس *Dicranosepsis* (Duda, 1926) در این مقاله از نظر تاکسونومیک بررسی شد. گونه‌های *Dicranosepsis bicolor* (Wiedemann, 1830)، *D. olfactoria* (Iwasa, 1984) و *D. crinita* (Duda, 1926) برای اولین بار از منطقه ناروال در ایالت پنجاب پاکستان گزارش می‌شوند. گونه *Dicranosepsis crinita* برای اولین بار از پاکستان گزارش می‌شود. کلید مصور و انتشار منطقه‌ای هر سه گونه ارایه شده است.

واژگان کلیدی: انتشار، گزارش جدید، *Dicranosepsis* Sepsidae، ناروال، پاکستان