

## Original Article

# First record of the oriental species, *Saltella setigera* Brunetti, 1909 (Diptera: Sepsidae) from Pakistan

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### Authors' Contribution

**MSH:** Planned, collected and identified the species; **IB:** Confirmed and helped in photography of species; **AA:** Helped in paper write up and review of manuscript

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### Abstract

The Oriental species of the genus *Saltella* Robineau-Desvoidy, 1830, *Saltella setigera* Brunetti, 1909 is recorded for the first time from Pakistan. The additional morphological and genital characters of *S. setigera* along with its photographs, distributional notes and remarks are provided.

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## INTRODUCTION

The genus *Saltella* Robineau-Desvoidy, 1830 contains 5 species, having worldwide in distribution viz; *Saltella nigripes* Robineau-Desvoidy, 1830 and *S. orientalis* (Hendel, 1934) are Palaearctic, *S. sphondylii* (Schrank, 1803) is Holarctic, *S. bezzii* Duda, 1926 is Ethiopian and *S. setigera* Brunetti, 1909 is Oriental in distribution (Ozero, 2005). The Oriental species of this genus has been recorded by many authors. Brunetti was the first who described *S. setigera* Brunetti, 1909 from South India with the type locality near Trivandrum. Later, Zuska (1977) in his revision of the Oriental species, regarded *S. setigera* Brunetti, 1909 as a questionable species. Iwasa (1982, 1984) found only a single female of this species from Calcutta and then later from Nepal.

After that, Iwasa *et al.* (1991) reported this species from Bangladesh based on two male specimens. They also discussed about the diagnostic characters of its allied species and also provided the photographs of the male fore femora. From Pakistan, Iwasa (1989) reported the genus *Saltella* Robineau-Desvoidy, 1830 based on his collected female specimens. The current study deals with the conformation of this oriental species from Pakistan. The taxonomic researches on this important group of flies, particularly on this genus are still needed to be done in Pakistan.

## MATERIALS AND METHODS

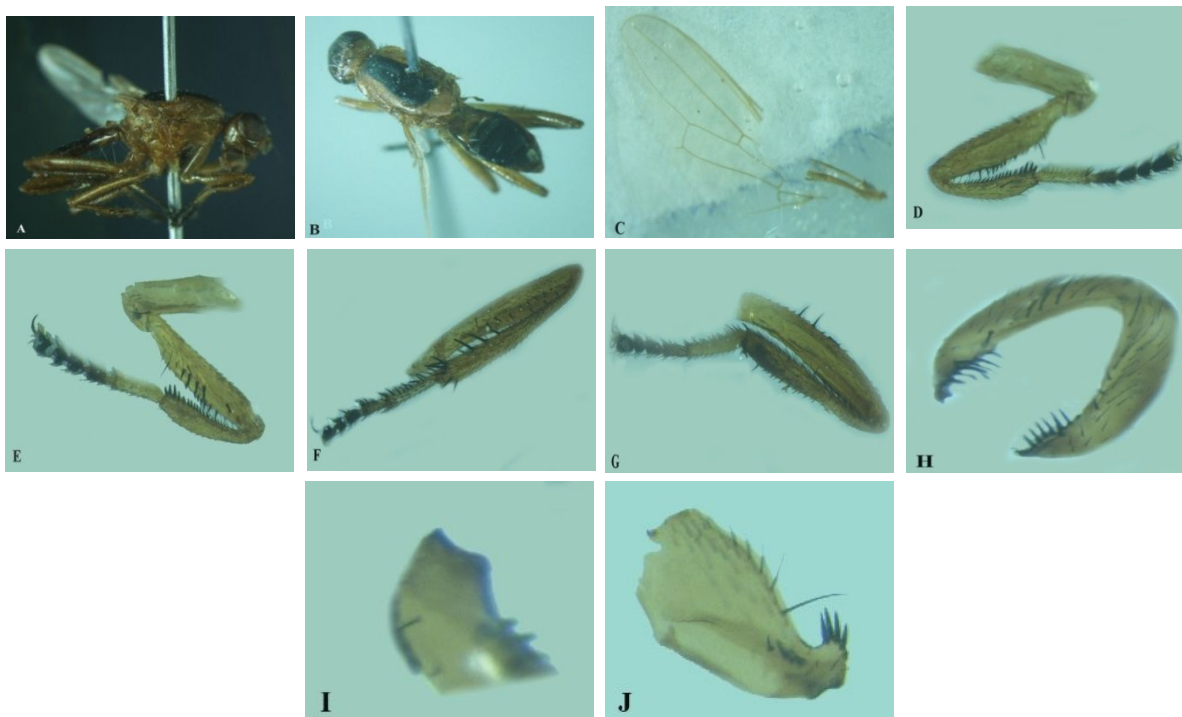
The adult specimen was collected from the flowers of *Parthenium hysterophorus* Linnaeus, 1753, based on the extensive survey during 2016-2017 for the collection of

saprophagous flies (Diptera) from Narowal region of Punjab, Pakistan. The specimen was collected by hand netting and killed by using concentrated ethanol (70%) and then pinned and studied under stereoscope (CZM6 Labomed). After the identification of the species, the photographs were taken before the specimen placed in the ethanol for the extraction of male genitalia. The male genitalia was observed after maceration in 10% KOH. Photographs were prepared by using Nikon Digital Sight DS-Fi1 camera. Identification was done by using the following literature; Iwasa (1982, 1984), Iwasa *et al.* (1991) and Iwasa and

Kanmiya (1994). Identified specimen is deposited at the National Insect Museum, Islamabad, Pakistan.

## RESULTS

The species of the genus *Saltella* Robineau-Desvoidy, 1830 are mainly distributed in Palaearctic, Holarctic, Ethiopian and oriental regions. Only *S. setigera* Brunetti, 1909 is described from the Oriental region. During the current study we reported this oriental species from Pakistan.



**Figure 1.** *Saltellasetigera* Brunetti, 1909. Male. **A:** Lateral body view; **B:** Dorsal body view; **C:** Wing; **D:** Fore leg posterior view; **E:** Fore leg anterior view; **F:** Mid leg lateral view (second tarsal segment yellowish); **G:** Hind leg lateral view (second tarsal segment yellowish); **H:** Hypopygium dorsal view; **I:** Tip of hypopygium; **J:** Hypopygium lateral view.

### Genus *Saltella* Robineau-Desvoidy, 1830

#### Synonyms

*Saltella* Robineau-Desvoidy, 1830;  
*Brachygaster* Meigen, 1826; *Pandora* Haliday,  
1833; *Anisophysa* Macquart, 1835;  
*Pseudopandora* Rapp, 1946.

#### Diagnostic Characters

This genus is similar to genus *Australosepsis* it has fused 1<sup>st</sup> and 2<sup>nd</sup> basal cells and differ by

having scutellum longer than width with strong basal and apical scutellar setae.

### *Saltella setigera* Brunetti, 1909

#### Synonyms

*Saltella metatarsalis* Brunetti, 1910

#### Diagnostic Characters

The mid and hind 2<sup>nd</sup> tarsal segments of male *S. setigera* are variable from black to brown. The dorsal margin of katepisternum

without pollen (shining) (Personal communication with Dr. Iwasa).

### Measurements

Body length 5mm.

### Taxonomic Notes

Body orange (Fig. 1-A), head orange red, frons with v shape depression, scutum with a broad black central stripe, occupying 1/3<sup>rd</sup> of entire width, scutum covered with rows of short black spines, post-pronotum with numerous black spines having irregular thickness, scutellum entirely yellow with a pair of strong basal and apical spines, pleuron complete yellowish (Fig. 1-B), wings transparent (Fig. 1-C), halteres brownish, legs orange yellow, tarsus black, fore femur approximately uniform in thickness, a single long black hair on the sub-basal at posterolateral side, six black spines on posterolateral sides, the proximal one little apart from the remaining, seven shorter spines on anterolateral side, the basal 4 are hooked, on the tibia there are 14 short spines just beyond the base, apical 3 little longer than the basal spines, total 17 in number, basitarsus yellow, base of second tarsus brownish, remaining tarsus black (Fig. 1-D,E), mid femora with a row of black spines on anterolateral and posterolateral sides, a few black spines in the center of these two rows at the apical region, posterior-lateral side have some black spines above this row on the basal side, tibia with a row of spines on anteroventral side, anterior row stronger than posterior but lesser in number, a circlet of strong spines at distal end, basitarsus yellow, second tarsus brownish, remaining black (Fig. 1-F), hind femur at apical side with a row of strong spines on the posterior-lateral side and a short row of approximately six spines on anterolateral side, basitarsus yellow, second tarsus brownish, remaining black (Fig. 1-G), abdomen flat, mostly black, except basal and apical tergite oranges, tergite 1 with numerous short black spines, tergites having some short black hairs on the lateral sides (Fig. 1-B), epandrium well developed, yellow, covered with black hairs (Fig. 1-H), upper part with distinct 5 black spines, 4 black subapical spines on anterolateral side (Fig. 1-J), apical part pointed with a little dentation (Fig. 1-I).

### Remarks

Iwasa (1982, 1984) and Iwasa *et al.* (1991) reported this species from India, Nepal and Bangladesh.

### Material Examined

Dudhu Chak (*Shakargarh*): 1♂, 12.vii.2016, leg. M.A. Hassan.

### Distribution

*Saltella setigera* Brunetti, 1909 is distributed in the oriental Asian; Bangladesh, India, Nepal (Iwasa 1982, 1984; Iwasa *et al.* 1991).

## DISCUSSION

During the current study an oriental species, *Saltella setigera* Brunetti, 1909 is recorded for the first time from Pakistan. Although *Saltella orientalis* (Hendel, 1934) is not reported from Pakistan, based on the remarks of Iwasa (1989) his collected female specimens were very closely related to *S. orientalis*, we have discussed about the diagnostic characters and distribution of both *S. setigera* and *S. orientalis* in this paper.

Iwasa (1989) reported the genus *Saltella* Robineau-Desvoidy, 1830 for the first time from Pakistan. As only the female collected specimens (2 female specimens from Abbottabad and 1 from Miandam (Swat) during 1987-1988) he could not identify the species but he gave the remarks that his female specimens were very closely resemble to *S. orientalis* (Hendel, 1934). *S. setigera* Brunetti, 1909 was considered as a questionable species in the revision of the Oriental species by Zuska (1977). Later, Iwasa (1982, 1984) reported *S. setigera* Brunetti, 1909 from India and Nepal. Iwasa *et al.* (1991) reported *S. setigera* for the first time from Bangladesh and gave the remarks that *S. orientalis* Palaeartic Asian; China, Japan, South Korea, Russia (Ozero 2005, 32; Iwasa and Kanmiya, 1994), while *S. setigera* is Oriental Asian species. So, during our current research, we found *S. setigera* as a new country record. The diagnostic characters of blackish 2<sup>nd</sup> tarsal segments of middle and hind legs and katepisternum without pollen helps to easily separate this species from its closely related species of *S. orientalis*, having brownish 2<sup>nd</sup> tarsal segments of middle and hind legs and katepisternum with pollen in upper posterior corner (Iwasa *et al.* 1991).

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