

First report of the genus *Mesembrius* Rondani, 1857 (Diptera, Syrphidae) from Kerala

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ABSTRACT: Two hover-flies of the Genus *Mesembrius* Rondani, 1857; *M. bengalensis* (Wiedemann, 1819), and *M. quadrivittatus* (Wiedemann, 1819) are reported for the first time from Kerala along with their diagnosis and key. © 2024 Association for Advancement of Entomology

KEY WORDS: Hover-flies, diagnosis, distribution, key

The genus *Mesembrius* Rondani, 1857 is a widespread Old-World genus with approximately 58 described species altogether from the Oriental Region, Australasian region, the Afrotropical region and Mediterranean Basin of the Palaearctic Region (Jordaens *et al.*, 2021). This genus belongs to the subfamily Eristalinae and Tribe Eristalini. Five species from the genus *Mesembrius* are reported from India namely *M. bengalensis* (Wiedemann, 1819), *M. quadrivittatus* (Wiedemann, 1819), *M. vestitus* (Wiedemann, 1821), *M. tuberculatus* (Brunetti, 1907) and *M. sharpi* Kohli, Kapoor & Gupta, 1988 (Sengupta *et al.*, 2016). In the Brunetti (1923) provided a detailed description of two species, *M. bengalensis* and *M. quadrivittatus* under the genus *Helophilus* Fabricius, 1805 with a key to its species in the 'Fauna of British India'. Male genitalia of *M. bengalensis* are figured by Datta and Chakraborti (1986). Ghorpadé (2014), Mitra *et al.* (2015) and Sengupta *et al.* (2016) discussed the geographical distribution of hover fly

species in India and reported *M. bengalensis* from Andhra Pradesh, Assam, Bihar, Chandigarh, Gujarat, Karnataka, Punjab, Tamil Nadu and West Bengal and *M. quadrivittatus* from Andhra Pradesh, Bihar, Chandigarh, Gujarat, Karnataka, Madhya Pradesh, Orissa, Tamil Nadu and West Bengal. *Mesembrius* are marsh dwellers in both the adult and larval stages, well-adapted to live in in marshes and flooded paddy fields throughout the year (Ghorpadé *et al.*, 2011). *Mesembrius* larvae breed in wet fermenting woody pulp (Ghorpadé, 2015), and are regular visitors of orchards and managed gardens (Mira *et al.*, 2008).

Specimens were collected from the Thrissur district, Kerala from flowers of *Boerhavia diffusa* L. and *Premna serratifolia* L. using a sweep net. The specimens were killed using ethyl acetate and pinned for a thorough examination up to species level was done using Labomed Luxeo 6Z stereo zoom microscope (Brunetti, 1923). Photographs

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were made using a Leica DMC4500 digital camera mounted on a Leica M205 C stereo microscope. The examined specimens were deposited in the insect collection of Shadpada Entomology Research Lab, Kerala, India. The photographs of the host plants were taken and identified with the help of experts. Diagnosis and key to the species under the genera (in Kerala) were prepared using the latest terminology by Van Steenis *et al.* (2023). The species were identified as *M. bengalensis* (Wiedemann, 1819), and *M. quadrivittatus* (Wiedemann, 1819) and are new reports from Kerala.

Family Syrphidae Latreille, 1897; Subfamily Eristalinae Newman, 1834

Tribe Eristalini Newman, 1834; Genus *Mesembrius* Rondani, 1857

Type species: *Helophilus peregrinus* Loew, 1846

Diagnosis (Based on the known species from Kerala): Eyes bare and holoptic in males and dichoptic in females. Thorax black with yellow vittae. Metafemur strongly incrassate. Wings with cell r_1 narrowly open. Abdomen variably coloured, but usually yellow with black markings.

Key to the species of genus *Mesembrius* of Kerala (Modified from Brunetti, 1923):

Holoptic eyes in males contiguous at least for 5 to 6 facets (Fig. 2A); legs in males with mesofemur suddenly constricted at apex (Fig. 2C); metatibia without any dens (Fig. 2E)

M. bengalensis (Wiedemann, 1819)

Eyes in males not contiguous medially (Fig. 2B); Legs in males with mesofemur gradually narrowed towards apex (Fig. 2D); metatibia suddenly constricted apically, at apex with a dens (Fig. 2F)*M. quadrivittatus* (Wiedemann, 1819)

***Mesembrius bengalensis* (Wiedemann, 1819) (Fig. 1A)**

Eristalis bengalensis Wiedemann 1819.

Eumerosyrphus indianus Bigot 1882.

Eumerosyrphus indicus Bigot 1883.

Diagnosis: Eyes in males contiguous at least for 1/3rd of distance between vertex and frons (5 to 6 facets), occiput black. Thorax with three black vittae, and yellow translucent scutellum. Halteres ochre yellow. Abdominal terga black and orange-yellow, with inverted V marks on 4th abdominal tergite. Legs in males with mesofemur suddenly constricted at apex.

Material examined: 3♂, 17.05.2023, Pullazhi, Thrissur district (10°33' 26.98387" N; 76°10' 7.56365" E), Coll. Athul Sankar C., sweep net, host plant: *Boerhavia diffusa* L.

Distribution: Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Karnataka, Tamil Nadu, Himachal Pradesh, West Bengal, Punjab (Ghorpadé, 2019; Mitra *et al.*, 2015). New to Kerala.

Comments: Previously the species were collected from flowers of *Weddelia*, *Tagetes*, *Mentha*, *Cucurbita*, *Rhodiola* and *Sida* spp. (Ghorpadé, 2019; Mitra *et al.*, 2015), while the present study reports it from *Boerhavia diffusa* L.

***Mesembrius quadrivittatus* (Wiedemann, 1819) (Fig. 1B)**

Eristalis quadrivittatus Wiedemann 1819.

Helophilus quadrivittatus Wiedemann: Brunetti 1923.

Mesembrius quadrivittatus Wiedemann: Knutson *et al.* 1975.

Merodon brunetti Sodhi & Awtar 1991.

Diagnosis: Similar to *M. bengalensis*, but differing by the following characters. Eyes in males are not contiguous medially. Legs in males with mesofemur gradually narrowed towards apex, metatibia suddenly constricted apically at apex with a dens. A more extended orange colour on abdomen and black markings on 4th tergum in both sexes. According to Brunetti (1923), the abdominal colour pattern is the only distinguishing feature in the case of female specimens.

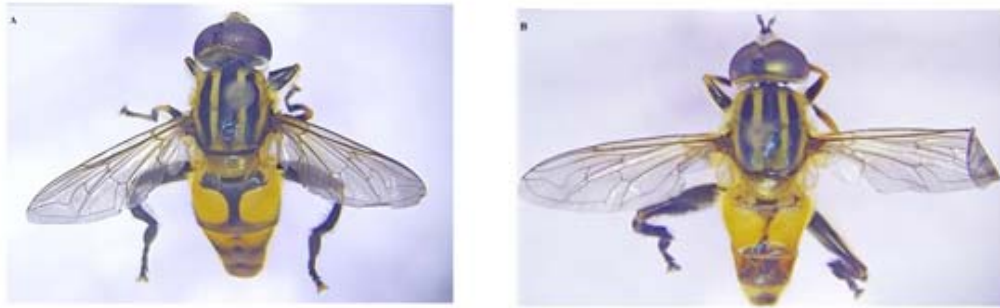


Fig. 1 A - Habitus of male *Mesembrius bengalensis*, B - Habitus of male *M. quadrivittatus*



Fig. 2 (A) *Mesembrius bengalensis* with contiguous eyes at least for 5 to 6 facets, (B) *M. quadrivittatus* without contiguous eyes, (C) *M. bengalensis* mesofemur suddenly constricted at the apex, (D) *M. quadrivittatus* mesofemur gradually narrowed towards the apex, (E) *M. bengalensis* metatibia without a dens, (F) *M. quadrivittatus* apically suddenly constricted mesotibia forming a dens at the apex

Material examined: 3 ♂, 19.04.2023, Vilangan hills, Thrissur district (10°31' 44.3994" N; 76° 9' 57.5994" E), Coll. Athul Sankar C., sweep net, host plant: *Premna serratifolia* L.

Distribution: Andhra Pradesh, Bihar, Chandigarh, Gujrat, Karnataka, Madhya Pradesh, Orissa, Tamil Nadu, West Bengal (Ghorpadé, 2019; Mitra *et al.*, 2015). New to Kerala.

Comments: Previously the species has been collected from flowers of *Weddelia*, *Aegle*, and *Rauvolfia* spp. (Mitra *et al.*, 2008). The present study reported it from *Premna serratifolia* L.

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