

First record of *Bibio bicolor* Walker, 1848 (Diptera, Bibionidae) from India with an updated checklist of *Bibio* (Geoffroy, 1762) species from the Oriental region

Arka Mukherjee, Koustav Mukherjee, Atanu Naskar* and Dhriti Banerjee

Zoological Survey of India, Diptera Section, Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata 700053, West Bengal, India

Email: mukherjee.arka03@gmail.com, koustav.mukherjee107@gmail.com, atanu.diptera@gmail.com*, diptera.zsi@gmail.com

ABSTRACT: This is the first record of *Bibio bicolor* Walker, 1848 (Diptera, Bibionidae) from India. Five females of the species were recorded from roughly 2500m above sea level, ending a 175-year hiatus with no records since the original description from Java. In addition, a checklist of 48 oriental species for the genus *Bibio* Geoffroy, 1762, is also provided. © 2026 Association for Advancement of Entomology

KEY WORDS: Love bug, new record, inventory, March flies, West Bengal

Bibionidae, also known as March flies, are a family of small to medium-sized flies with pronounced sexual dimorphism. They have more than one palpal segment easily distinguishes them costal vein and R_{4+5} ending closely at the wing tip; short antennae with 4-12 compact flagellomeres; the insertion of the antenna below the complex eye; where the robust forefemur is a typical character of Bibioninae (Skartveit, 2017). Around 760 species have been described from around the world (Haarto, 2014), with their phytosaprophagous larvae working as potential nutrient recyclers, occasional pests of various crops, and adults at times serving as pollinators (Hardy, 1945, 1960, 1981; Freeman and Lane, 1985; D'Arcy-Burt and Blackshaw, 1991; Lewis and Smith, 1969; Johnson and Steiner, 1994). In the Oriental realm, the genus *Bibio* is the second most species rich genus (39 species) behind *Plecia* (65 species) (Jikon and Ke, 1988). In 1904, Meijere's description of *B. obscuripennis* from

Darjeeling, West Bengal, launched Bibionid research in India (Meijere, 1904). Brunetti described 13 species from 1911 to 1925, and Hardy was the last person to describe a *Bibio* species from India, *B. brunetti* in 1973 (Brunetti, 1911, 1912, 1913, 1925; Hardy, 1973).

Bibio bicolor Walker, 1848, has long been documented, primarily from Java with Walker describing its type locality as "East Indies" from Archdeacon Clerk's collection, but its existence in the Indian subcontinent has been unknown until now (Walker, 1848, 1849). This paper discusses the first record of *B. bicolor* from India, which will broaden its known geographical range, with its first photographic record, and provides a checklist of *Bibio* species from the Oriental realm.

The study is based on materials from the Zoological Survey of India, Kolkata (ZSI). The specimens were collected during a survey to assess dipteran

* Author for correspondence



Fig. 1 *Bibio bicolor* Walkcr, 1848, dorsal habitus; **Fig. 2** lateral habitus

Fig. 3 wing venation

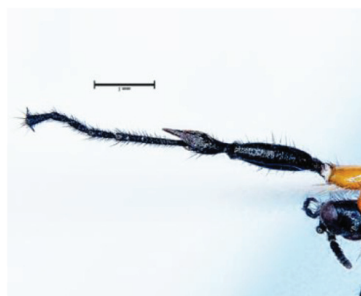


Fig. 4 Foreleg

Fig. 5 Head and forcocoxa

Fig. 6 dorsal view of thorax

fauna of Neora Valley National Park, West Bengal, India, in April 2022. Sampling was primarily done using sweep netting. Collected specimens were preserved in 70 percent ethyl alcohol for further study. A Leica EZ4 stereo microscope was used for the identification of the specimens. Images were stacked with a Leica M205 stereo - microscope coupled with a LEICA DFC 500 camera and software Leica Application Suite LAS V3.6, edited with Adobe Photoshop CC version 13.0.1 and assembled using Adobe Illustrator CS6.

***Bibio bicolor* Walker, 1848 (Figs. 1-6)**

Materials examined: 2♀♀ Rishop, Kalimpong district, 27.1112° N; 88.6526°E, 2591 Mt., 26.x.2022, coll. A. Naskar & party. 3♀♀ Neora valley National Park, Kalimpong district, 27.0824° N; 88.7007° E, 2849 Mt., 22.xi.2022, coll. A. Naskar & party.

Diagnosis: Walker in 1848 described a female from “East Indies”, present day Malay Archipelago. Entire thorax and all coxae appear red or orangish yellow (Figs. 1, 2, 5, 6); mesonotum has rather coarse golden pubescence but not particularly long

(Fig. 6). Front tibia with two spines; one spine large striated and the other much reduced (Fig. 5). Wings blackish brown (Fig. 3).

Distribution: India (West Bengal), Java.

Remarks: *B. bicolor* is similar to *B. pleciodes* (Osten Sacken, 1881) except the coxae which is entirely black and longer (not coarse) thoracic pubescence in *B. pleciodes* (refer to Hardy, 1956: 89). *Bibio imitator* (Walker, 1835) also displays similarity with *bicolor* except the lack of black abdomen which is rufous in *imitator*. Walker described *B. bicolor* from a single type specimen, later Hardy in 1956 redescribed the species using the same type specimen (Hardy, 1956). After 67 years its last description, this work extends its geographic range as well as provides first photographic evidence. Unfortunately, no males were found during the survey, which remains a major gap area in the study of this species as no male has yet been described. Furthermore, this paper provides a checklist of Oriental *Bibio* species (Table 1), which updates the species number from 39 to 48.

Table 1. Checklist of Oriental *Bibio* species

No.	Species	Distribution
1.	<i>Bibio ablusus</i> Hardy, 1965	Nepal
2.	<i>B. aequalis</i> Brunetti, 1912	China
3.	<i>B. affiniproximus</i> Hardy, 1965	Nepal
4.	<i>B. approximatus</i> Brunetti, 1911	India
5.	<i>B. aquilus</i> Hardy, 1967	Nepal
6.	<i>B. araeoceles</i> Hardy, 1967	Nepal
7.	<i>B. baishanzunus</i> Yang & Chen, 1995	China
8.	<i>B. bicolor</i> Walker, 1848	India, Indonesia
9.	<i>B. brevicealcar</i> Edwards, 1928	Malaysia
10.	<i>B. brevineurus</i> Yang & Chen, 1995	China.
11.	<i>B. brunetti</i> Hardy, 1973	India
12.	<i>B. capitaneus</i> Hardy, 1965	Nepal
13.	<i>B. collaripes</i> Brunetti, 1925	India
14.	<i>B. defectus</i> Brunetti, 1911	India
15.	<i>B. depressus</i> Meijere, 1924	Indonesia
16.	<i>B. discalis</i> Brunetti, 1911	India
17.	<i>B. flavicans</i> Edwards, 1928	Malaysia
18.	<i>B. flavissimus</i> Brunetti, 1925	India, Indonesia, Philippines
19.	<i>B. flavohirta</i> Brunetti, 1912	India
20.	<i>B. formosanus</i> Okada, 1938	Taiwan
21.	<i>B. fuscitibia</i> Brunetti, 1911	India, Nepal
22.	<i>B. gutianshanus</i> Yang, 1995	China
23.	<i>B. hainanus</i> Yang & Cheng, 2002	China
24.	<i>B. hennigi</i> Hardy, 1952	Indonesia
25.	<i>B. hortulanoides</i> Brunetti, 1911	India
26.	<i>B. hyalipterus</i> Yang & Chen, 1995	China
27.	<i>B. latifasciatus</i> Yang & Cheng, 1998	China
28.	<i>B. melanonotalus</i> Yang & Cheng, 1998	China
29.	<i>B. nepalensis</i> Hardy, 1967	Nepal
30.	<i>B. nigripennis</i> Brunetti, 1913	India
31.	<i>B. ochrostigmatus</i> Yang & Cheng, 1998	China
32.	<i>B. pallidohirtus</i> Brunetti, 1925	India
33.	<i>B. proximus</i> Brunetti, 1911	India
34.	<i>B. quadrifasciatus</i> Yang & Cheng, 2002	China

35.	<i>B. rubicundus</i> Wulp, 1884	Indonesia, Malaysia
36.	<i>B. rufifemur</i> Brunetti, 1911	India
37.	<i>B. ryukyuensis</i> Hardy & Takahashi, 1960	Japan (Ryukyu Islands)
38.	<i>B. scaber</i> Edwards, 1928	Malaysia
39.	<i>B. scaurus</i> Hardy, 1965	Nepal
40.	<i>B. sillemi</i> Duda, 1935	Pakistan
41.	<i>B. sinensis</i> Ôuchi, 1940	China
42.	<i>B. subrotundus</i> Yang, 1995	China
43.	<i>B. sumatranus</i> Meijere, 1924	Indonesia
44.	<i>B. nigerrimus</i> Duda, 1930	Nepal
45.	<i>B. tianmuanus</i> Li & Yang, 2001	China
46.	<i>B. totonigrum</i> Hardy, 1965	Nepal
47.	<i>B. trifasciatus</i> Yang & Cheng, 2002	China
48.	<i>B. zhaoi</i> Li & Yang, 2001	China

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