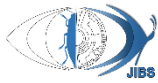


Original Article 

Two new firefly species of the genus *Diaphanes* Motschulsky, 1853 (Coleoptera: Lampyridae: Lampyrinae) from Meghalaya, Northeast India

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ABSTRACT. Two new *Diaphanes* Motschulsky 1853 species, *D. meghalayanus* Nonglang, Das, Shangpliang **sp. nov.**, and *D. mawlynnong* Nonglang, Das, Shangpliang **sp. nov.**, from Meghalaya, Northeast India, are described. *Diaphanes meghalayanus* **sp. nov.**, is characterised by a unique colour pattern of the central disc, the absence of a typical circular pronotal areolet area, brownish-yellow pronotum and elytra, and other specific features of male genitalia. *Diaphanes mawlynnong* **sp. nov.**, is distinct with rare moniliform antennae, circular-shaped pronotal areolet areas with blunt posterior lateral corners, and specific genital aedeagus characters. The female of *D. mawlynnong* **sp. nov.**, which is apterous, was found in the same habitat where its males were associated. 13 *Diaphanes* species have been recorded from India, and with the discovery of these two new species, the number of *Diaphanes* species recorded in the country increases to 15. This knowledge significantly contributes to the existing information gap of *Diaphanes* diversity and distribution in this region.

KEYWORDS: Biodiversity Hotspot, Indo-Burma, Lampyrids, Oriental, taxonomy

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INTRODUCTION

The subfamily Lampyrinae is the largest group within the family Lampyridae, including more than 50 recognized genera (Green 1959; McDermott 1964, 1966; Crowson 1972), which accounts for half of the genera in the family. This group is especially diverse in the Neotropical realm (Wijekoon & Wegiriya 2024). One of its most diverse genera is *Diaphanes*, established by Motschulsky (1853) based on *Diaphanes luniger* from Northern India. It ranks as the fifth most diverse genus of Lampyridae after *Luciola*, *Photuris*, *Licidota*, and *Photinus*, with over 90 species documented from the Afrotropical, Indo-burma, and Palearctic regions (Olivier 1907, 1910; McDermott 1964, 1966).

In Asia, the recent generic description of *Diaphanes* has been presented by Jeng et al. (2001), including the key to the Taiwanese species. However, only a few species have been added to the list of *Diaphanes* in Asia in the subsequent studies. Among them, Li and Liang (2007) described a new species, *Diaphanes pectinealis* Li & Liang, which is characterised by long and strongly pectinate antennae in males from Southwest China, and Wijekoon and Wegiriya (2024) discovered *Diaphanes uvaparanagama* Wijekoon as a new species from freshwater-associated habitats in Sri Lanka. In addition, *D. lutescens* was re-described by Wijekoon and Wegiriya (2021), and *D. oliveiri* was re-recorded with the first record of its female by De Silva et al. (2024) almost 128 years after its first description in 1895.

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Despite the genus being diverse in Asia, there is still very limited information from India. While Olivier (1907) provided the earliest list of 13 *Diaphanes* species from India, and Parvez et al. (2026) later provided a compiled checklist of Indian fireflies, including *Diaphanes* (Table 1), no new species have been described from the country since, leaving a significant gap in our knowledge of their diversity and distribution in this region. The present study reports two new species, *D. meghalayanus* sp. nov. and *D. mawlynnong* sp. nov., both of which have distinct external morphology and genitalia structures.

MATERIAL AND METHODS

The two firefly species were first found in Mawrasai ($-25^{\circ}20' 28.43''\text{N}$, $92^{\circ}0'37.40''\text{E}$) and Mawlynnong village ($-25^{\circ}12'2.40''\text{N}$, $91^{\circ}54'43.87''\text{E}$) of Meghalaya, East Khasi Hills District, Northeast, India (Fig. 1), where the specimens were opportunistically sampled using the “visual encounter method” in dense forest patch, collected by handpicking and with standard-size insect net and preserved using the dry preservation method for later taxonomic examination in the laboratory of the Department of Zoology, Assam Don Bosco University, India. Collection locality was recorded using the GPS feature from the Epicollect mobile application. The specimen collection was carried out from 17.30 to 22.00 on sampling days (18.II.2024, 19.II.2024, 20.II.2024, 21.II.2024) and (1.II.2025, 2.II.2025). Collected specimens were closely examined for their taxonomic characters and compared with the available reference corrections and original descriptions of recorded species in previous studies in Asia. In addition, expert reviews and past literature of the genus *Diaphanes* (Motschulsky 1845, 1853; Olivier 1907, 1910; McDermott 1964, 1966; Jeng et al. 1998, 1999, 2000, 2001, 2003; Li & Liang, 2007; Martin et al. 2019; Wijekoon & Wegiriya 2021, 2024; De Silva et al. 2024) were retrieved, confirming its generic placement within the genus *Diaphanes*.

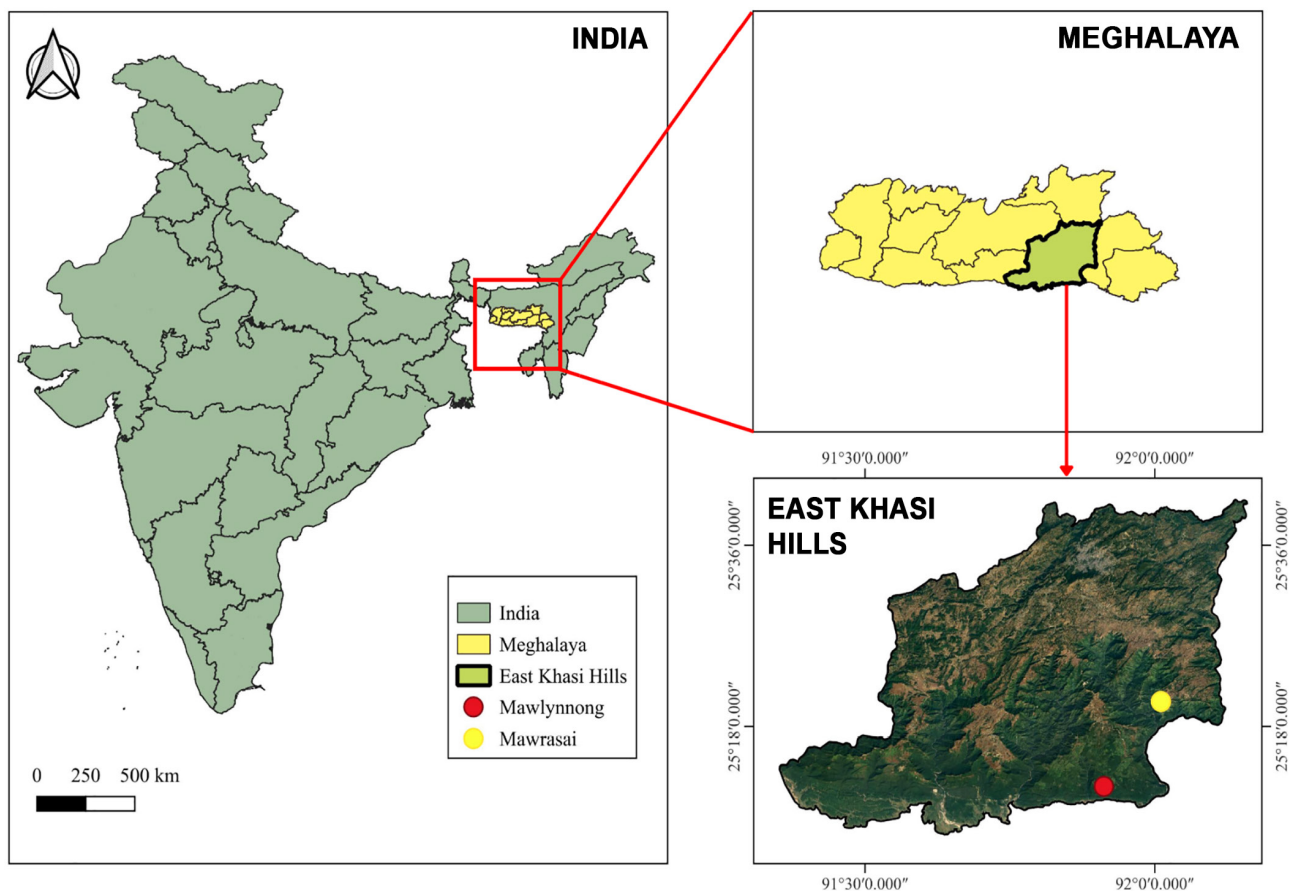


Figure 1. Map showing the locations from where the two species were collected.

The genus *Diaphanes* can be recognized by the combination of the following characters: clear pronotal areolet areas, elytra pale to black, and a semi-circular-shaped pronotum with lateral expansions. Male genitalia were dissected for examination, and the dissected aedeagus and aedeagal sheaths were preserved in glycerol within labelled Eppendorf tubes. Photographs were taken using a Mitutoyo digital vernier calliper (range 0–150 mm (0–6"), resolution 0.01 mm (0.0005") to the nearest 0.1 mm), and measurements were performed using ImageJ software V 1.54. All pinned and labelled specimens have been deposited as a reference collection at the Natural History Museum, Department of Zoology, Assam Don Bosco University, India, under the voucher series ADBU.D/Meg.01–40 for *D. meghalayanus* and ADBU.D/Mawlyn.01–04 for *D. mawlynnong*. The holotypes are deposited in ZSI (Zoological Survey of India), Shillong. The permission to collect firefly samples for the study was given by the Office of the Additional Principal Chief Conservation of Forests, Wildlife and Chief Wildlife Warden, Meghalaya, Shillong (Permission no. FWC/Research/101/3420).

Abbreviations. **ADBU** – Assam Don Bosco University; **ASD** – Smallest distance between the inner margins of antennal sockets; **ASW** – Antennal socket width measured along the same horizontal line as ASD; **ED** – Smallest distance between eyes; **HW** – Head width (across eyes, measured parallel to **ASD**); **LO** – Light organ; **ML** – Median lobe (aedeagus); **T2, T7, T8** – Abdominal tergites 2nd, 7th and 8th; **TBL** – Total body length; **TBW** – Total body width; **V6, V7** – Abdominal ventrites 6th and 7th.

RESULTS

Order Coleoptera Linnaeus, 1758

Suborder Polyphaga Emery, 1886

Family Lampyridae Linnaeus, 1758

Subfamily Lampyrinae Olivier, 1907

Genus *Diaphanes* Motschulsky, 1853

Type species. *Diaphanes luniger* Motschulsky, 1853, by original designation (Northern India).

Diaphanes Motschulsky, 1853:44 (original description) Gorham 1880:90 (general description). Olivier 1885:345 (definition); 1907:40 (definition, catalogue); 1911:81 (definition, female). Tennant 1861 (checklist). McDermott 1964:17 (morphology, taxonomy); 1966:10 (catalogue). Jeng et al. 2001:203–235 (revision). Li & Liang 2007:53 (new species). Martin et al. 2019 (checklist). Wijekoon et al. 2016 (repository records: NMCSL). Wijekoon et al. 2021 (checklist). Wijekoon & Wegiriya 2021:427 (description). De Silva et al. 2024:38 (description). Wijekoon & Wegiriya 2024:137 (new species).

Diaphanes meghalayanus Nonglang, Das, Shangpliang sp. nov.

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Figs 2A–B, 3A–J

Material examined. **Holotype** ♂, India, Meghalaya, Northeast India, East Khasi Hills District, Mawrasai, 25°20'28.43"N, 92°00'37.40"E, 1199 m, 18.II.2024, by Memorial Ryndong. Deposited in ADBU (ADBU.D/Meg.01); **Paratypes** 8 ♂♂. India, Meghalaya, Northeast India, East Khasi Hills District, Mawrasai, 25°20'28.43"N, 92°0'37.40"E, 1199 m, (18.II.2024); 10 ♂♂ (19.II.2024); 10 ♂♂ (20.II.2024); 6 ♂♂ (21.II.2024), by Memorial Ryndong. Deposited in ADBU (ADBU.D/Meg.02–35). Mawlynnong, 25°12'2.40"N, 91°54'43.87"E, 434 m, 1 ♂ (1.II.2025), 2 ♂♂ (2.II.2025) by Emma M. Nonglang. Deposited in ADBU (ADBU.D/Meg.36–38).

Etymology. This species is named after the state of Meghalaya, where it has been recorded at multiple locations. The species name "*meghalayanus*" is used to honour the state, also known as the "abode of clouds", situated in the Northeast of India.

Diagnosis (Male). 9.8 mm long, distinguished from other known *Diaphanes* by a distinct median central disc which is median black with vivid red extending laterally; pronotal areolet area not circular shape,

confined to the central pronotum with compressed lateral margins; brownish yellow pronotum and elytra, (*D. mawlynnong* sp. nov. having red central disc (Fig. 4A), pronotal areolet area circular shape with blunt postereo-lateral corners, pale brown pronotum and elytra); LO in both V6 and V7 well developed and yellow, identical shape, margins not clear (Fig. 3D); aedeagus lobes distinct by having ML about as long as parameres, and slender ML with gradually tapering towards apex and without having a dilated tip (arrowed X in Fig. 3H); parameres apical arm slender with weak thumb-like structure (arrowed Y in Fig. 3I).

Description. — **Male** (Figs 2A–B, 3A–J). TBL=9.8 mm, TBW= 4.4 mm (across the widest point of closed elytra).

Colour. Elytra brownish yellow with grey lateral and sutural margins; pronotum yellowish semitransparent, median central disc of the pronotum with median black and vivid red extending laterally; prosternum, mesosternum, and hypomera vivid red; head black; prothorax and mesothorax red, scutellum and metathorax black, trochanter and coxa yellowish, black femora to tarsi in pro-, mid-, and hind legs; abdominal ventrites 2–5 black, V8 semitransparent and brownish yellow; T2–7 black, and T8 brownish yellow (Figs 2A–B, 3A–J).

Head (Fig. 3A). Completely retracted within a pronotal cavity, and the hypomera open anteriorly, eyes large, HW 2.6 mm; eyes large, ED is 0.3 mm, interspace between eyes almost uniformly wide from frons to ventral surface, about 0.11 times as wide as head width. Mouthparts well developed, about 0.50 times as wide as pronotum width. *Antenna* 2.2 mm long, relatively short, filiform, 11-segmented. ASD: 0.03, ASW 0.19 mm; ASD < ASW.

Thorax. *Pronotum* (Fig. 2A), 2.1 mm long, 3.0 mm wide, semi-elliptical shape, fine punctures on the surface, postereo-lateral corners of pronotal areolet area blunt, slightly broader than long. *Elytra* 7.6 mm long, 4.4 mm wide, yellowish semitransparent, two interstitial lines in each elytron and a smooth surface with obscure punctures. **Legs:** Legs long and slender, and two claws at the apex.

Abdomen. Seven ventrites, abdominal spiracles on the ventral side of the abdomen, tergal apicolateral angles sharp, V6 and V7 with medial flattened transverse yellow light organs (unclear strip-shape), and the LO are the same size in both V6 and V7; pygidium trisinuate, with a slightly longer middle lobe than lateral ones, blunt lateral lobes, and a smooth apical margin on all lobes; V8 emarginated with the slightly raised centre where the aedeagus is positioned with the genital opening exposed at the apical margin. *Aedeagal sheath* (Figs. 3E–G), elongated and narrow, weakly skewed, asymmetric, slightly curved at base in the last $\frac{1}{4}$ of the sheath, tapering at the anterior end and slightly broader at the posterior end, 0.8 mm in length, covering the whole aedeagus. *Aedeagus* (Fig. 3H–J), typical trilobate in form, asymmetric, approximately 0.9 mm in length. ML is elongated, slender, broader in the basal third, and gradually narrows down with a blunt end. ML is distinct, but as long as parameres and gradually tapers from the base without having a dilated tip (greatly or weakly dilated tips with elliptical expansions at the middle of ML are common features in *Diaphanes* recorded to date). It is robust and slightly broad at the base; the lateral side of ML is arched and gradually broadens near the apical $\frac{1}{8}$. It narrows down at the basal $\frac{1}{2}$ (arrowed X in Fig. 3H). The parameres are slender, sub-parallel for almost their length, robust and broad in the basal $\frac{2}{3}$, with the apical arm weak, thumb-like and slender, broad at the base and diverging near the apical fourth into narrow, blunt-tipped lobes that are slightly upturned (arrowed Y in Fig. 3I). The basal piece is shorter than the parameres, asymmetric, sclerotised and weakly y-shaped (a weak y-shaped basal piece is rare and recorded to date only in *D. nubilus* Jeng & Lai, and *D. formosus* Olivier).

Female. Unknown.

Larva. Unknown.

Biology. *D. meghalayanus* sp. nov. was found in a semi-evergreen forest as well as in a dense, tall betel nut plantation interspersed with bamboo patches. It is mostly found in the month of February (Fig. 6A). Temperature recorded as 18–20°C, humidity was 77–80%. The habitat where these fireflies were sighted remained undisturbed at night with no light pollution, with only a few plantations that were not visited frequently by locals. Nocturnal, flying at around 10–15 metres above the ground with a faint green, slow, pulsating flash.

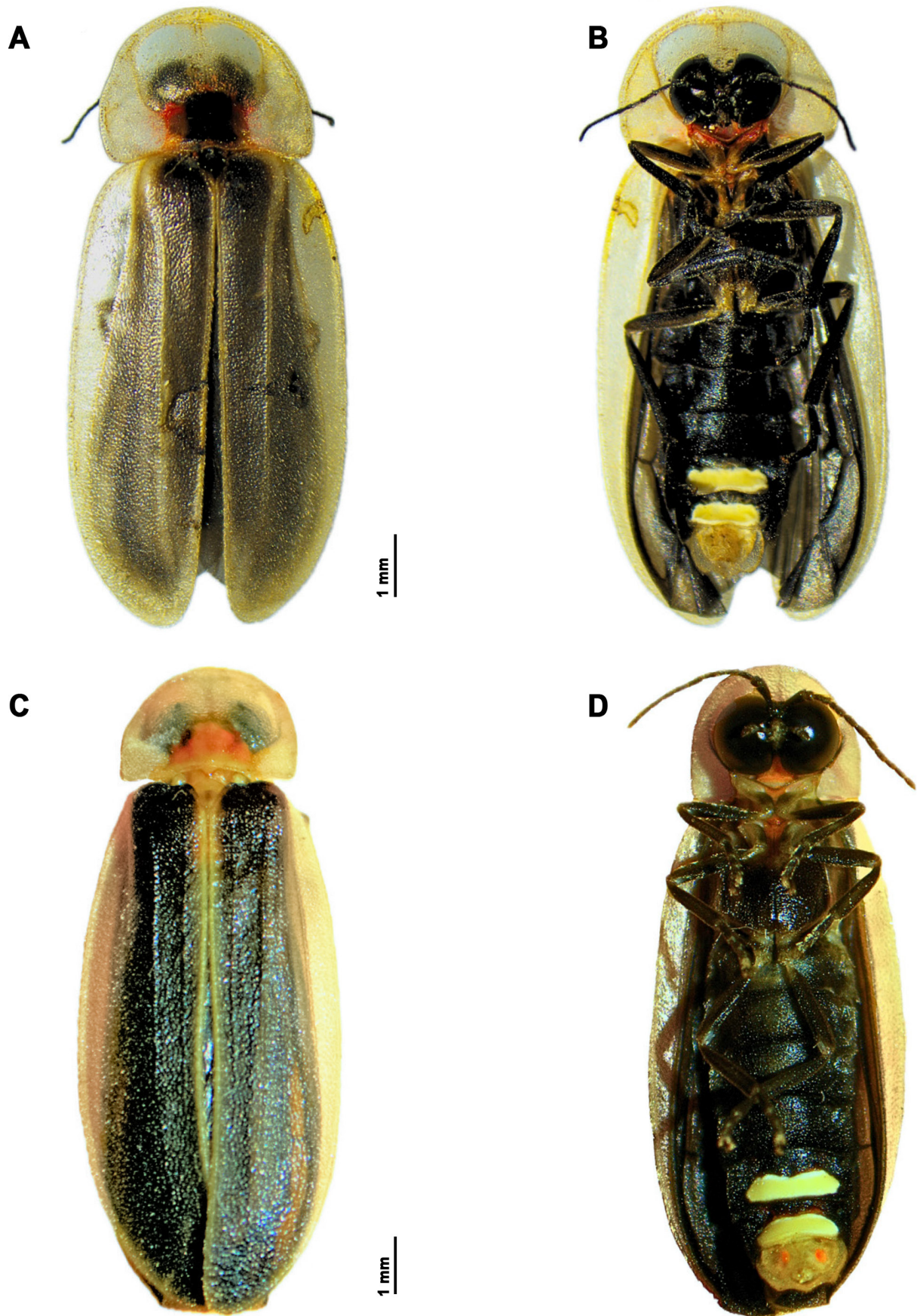


Figure 2. General habitus of two new *Diaphanes* species from India, males. **A–B.** *Diaphanes meghalayanus* sp. nov.; **C–D.** *Diaphanes mawlynnong* sp. nov., **A., C.** Dorsal view; **B., D.** Ventral view.

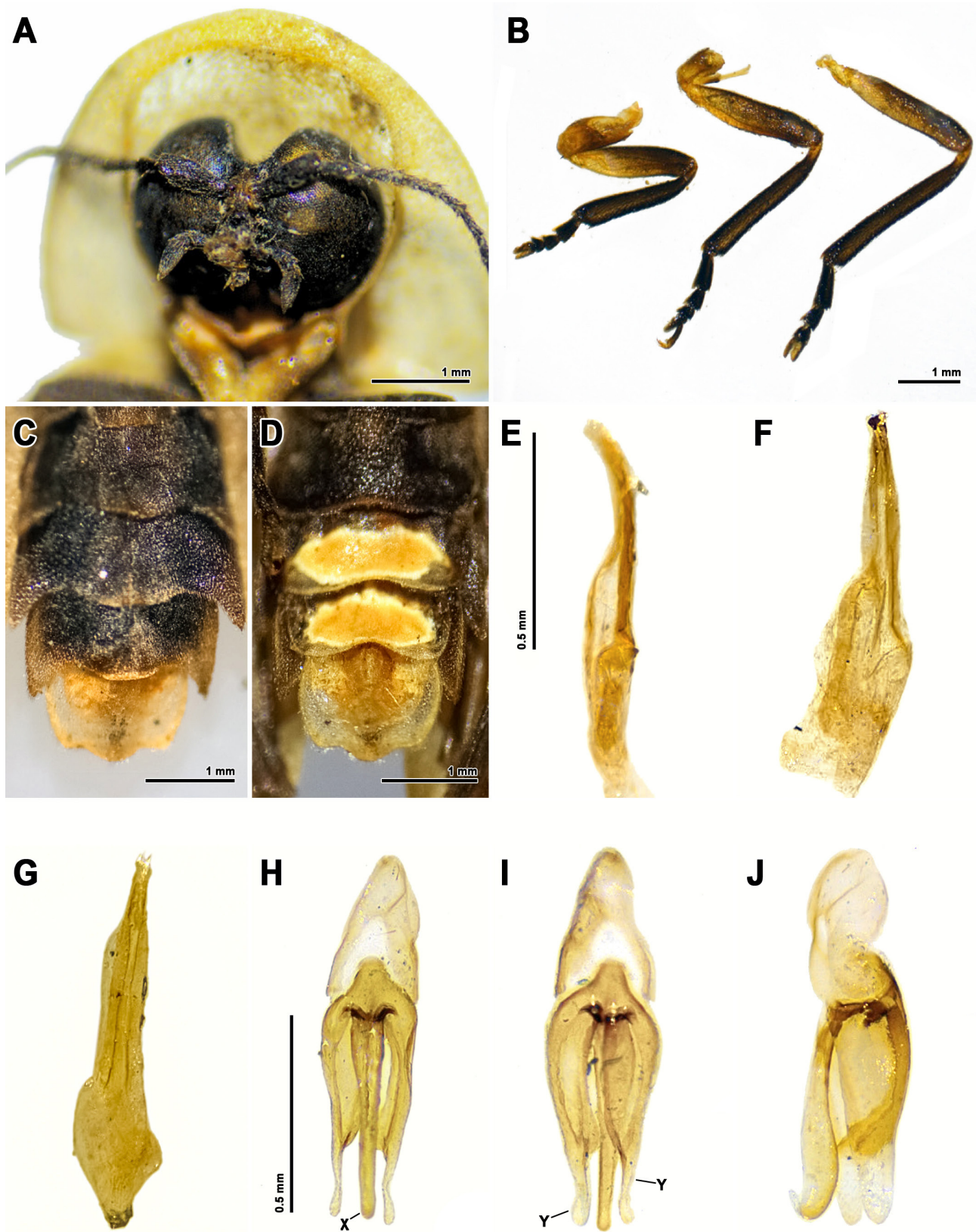


Figure 3. *Diaphanes meghalayanus* sp. nov., male. **A.** Head with eyes, **B.** Legs- (left to right) front leg, mid leg, and hind leg, **C.** Terminal abdominal tergites, **D.** Terminal abdominal ventrites, **E-G.** Aedeagal sheath; **E.** Lateral; **F.** Ventral; **G.** Dorsal; **H-J.** Aedeagus; **H.** Dorsal (**X**- slender ML without having a dilated tip); **I.** Ventral (**Y**-parameres apical arm slender and lack of typical thumb-like structure); **J.** Lateral.

***Diaphanes mawlynnong* Nonglang, Das & Shangliang sp. nov.**

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Figs 2C–D, 4A–L

Material examined. **Holotype** ♂. India, Meghalaya, Northeast India, East Khasi Hills District, Mawlynnong, 25°12'2.40"N, 91°54'43.87"E, 434 m, 1.II.2025, by Emma M. Nonglang. Deposited in ADBU (ADBU.D/Mawlyn.001). **Paratypes.** 3 ♂♂ 1♀, same locality and collector as holotype (1.II.2025); 1 ♂ (2.II.2025). Deposited in ADBU (ADBU.D/Mawlyn.02-06).

Etymology. The species is named after Mawlynnong, where the species was first found, also known as the “cleanest village in Asia”. The species name “*mawlynnong*” is used to honour the village and the local Khasi people.

Diagnosis (Male). 12.5 mm long, distinguished from other known *Diaphanes* by having moniliform antennae (except *D. birmanensis* (Olivier)); central disc red; pronotal areolet area circular-shaped; posterior lateral corners are blunt; pale brown pronotum and elytra (Figs 2C, 4A); aedeagus distinct with slightly longer ML than parameres; ML apical half elliptically expanded with a dilated, blunt, weakly pointed tip (arrowed X in Fig. 4J); parameres with sturdy lobes in basal 3/4, apical 1/3 with blunt-tipped slender lobes which are distinctly laterally curved and lack the typical thumb shape (arrowed Y in Fig. 4K).

Description. — **Male** (Figs 2C–D, 4A–L). TBL=12.5mm long, TBW=4.2 mm wide (across the widest point of closed elytra).

Colour. Elytra pale brown with black hind wings visible beneath, pale yellow lateral, apical and sutural border; interstitial lines not distinct in elytron; head black; pronotum yellowish semi-transparent with a median central disc, and prosternum, mesosternum, and hypomera vivid red central disc of the pronotum red; scutellum, prothorax and mesothorax brownish red; metathorax black; trochanter and coxa of legs yellowish; black femora to tarsi in all legs; abdominal ventrites 2–5 black, V6 and V7 with medial flattened transverse yellow light organs (strip-like), and V8 semi-transparent pale brown; T2–7 are black, and T8 is yellowish.

Head. Completely retracted within a pronotal cavity, and the hypomera open anteriorly, with large eyes and HW 2.2 mm; eyes are large, ED is 0.3 mm, and the interspace between eyes is almost uniformly wide from frons to ventral surface, about 0.13 times as wide as head width. *Antenna* (Fig. 4E) 2.3 mm long, moniliform, 11-segmented. ASD: 0.03, ASW 0.14 mm; ASD < ASW.

Thorax. *Pronotum* (Fig. 4A), 2.1 mm long, 2.6 mm wide, semi-elliptical shape, fine punctures on the surface. *Elytra* (Fig. 2C), 9.6 mm long, 4.2 mm wide, interstitial lines not distinct in elytron. *Legs* long and slender; two claws at the apex.

Abdomen. Seven ventrites, abdominal spiracles on the ventral side of the abdomen; the LO in V6 is wider than that in V7; the areas surrounding the LO in V6 and V7 are red, and the lateral areas of V8 are red (two red spot-like appearances in specimens (Fig. 4D)); the pygidium is trisinate, with a slightly longer middle lobe than lateral ones, and the apical margin of all lobes is smooth and blunt; V8 has the slightly raised centre where the aedeagus is positioned with the genital opening exposed at the apical margin. *Aedeagal sheath* (Figs. 4G–I), elongated and narrow, skewed, slightly asymmetric, curved twice from the basal ½ and apical ¼ towards the apex of the sheath, tapering at the anterior end and slightly broader at the posterior end, 1.1 mm in length, covering the whole aedeagus. *Aedeagus* (Figs. 4J–L), typical trilobate in form, slightly asymmetric, approximately 1 mm in length. ML is slender in the basal half and apical half with a suddenly enlarged elliptical expansion (*D. flavilateralis* Jeng & Yang, *D. lampyroides* (Olivier), and *D. cheni* (Jeng) have ML-elliptical expansions) that tapers down at the apical ¼, which then tapers towards the apex, creating a weak structure with a dilated blunt end, and the tip is weakly pointed (arrowed X in Fig. 4J). *Diaphanes pectinealis* ML is with a distinct bottleneck structure with a dilated tip and without elliptical expansions, and ML is slightly longer than parameres.

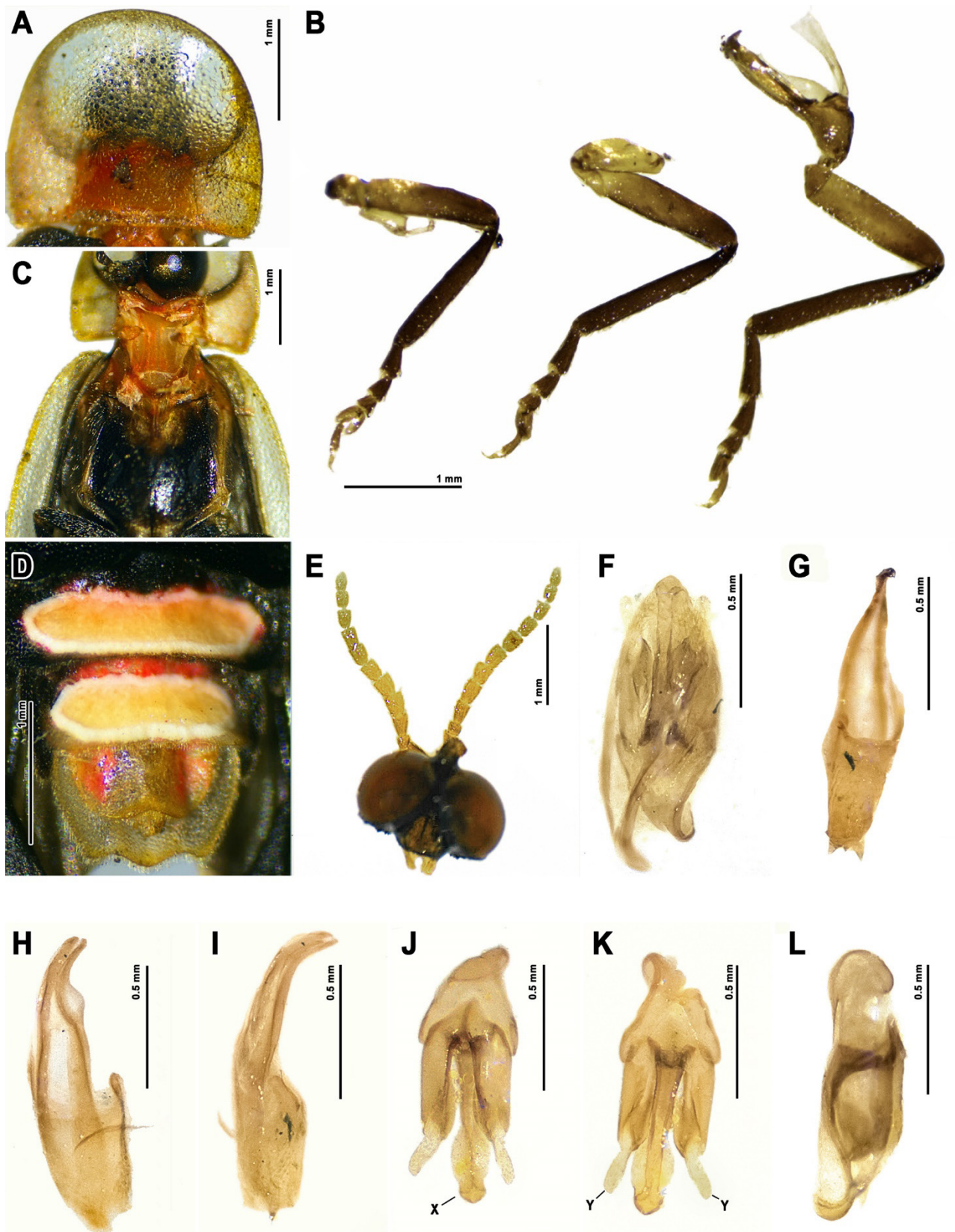


Figure 4. *Diaphanes mawlynnong* sp. nov., male. **A.** Pronotum; **B.** Legs- (left to right) front leg, mid leg, and hind leg; **C.** Thorax; **D.** Terminal abdominal ventrites with LO; **E.** Moniliform antennae; **F.** Aedeagus with the aedeagal sheath, **G-I.** Aedeagal sheath; **G)** dorsal, **H)** ventral, **I)** lateral, **J-L.** Aedeagus; **J.)** Dorsal (X- ML tip with dilated blunt end, and weakly pointed); **K.)** Ventral (Y- laterally curved parameres tips); **L.)** Lateral.

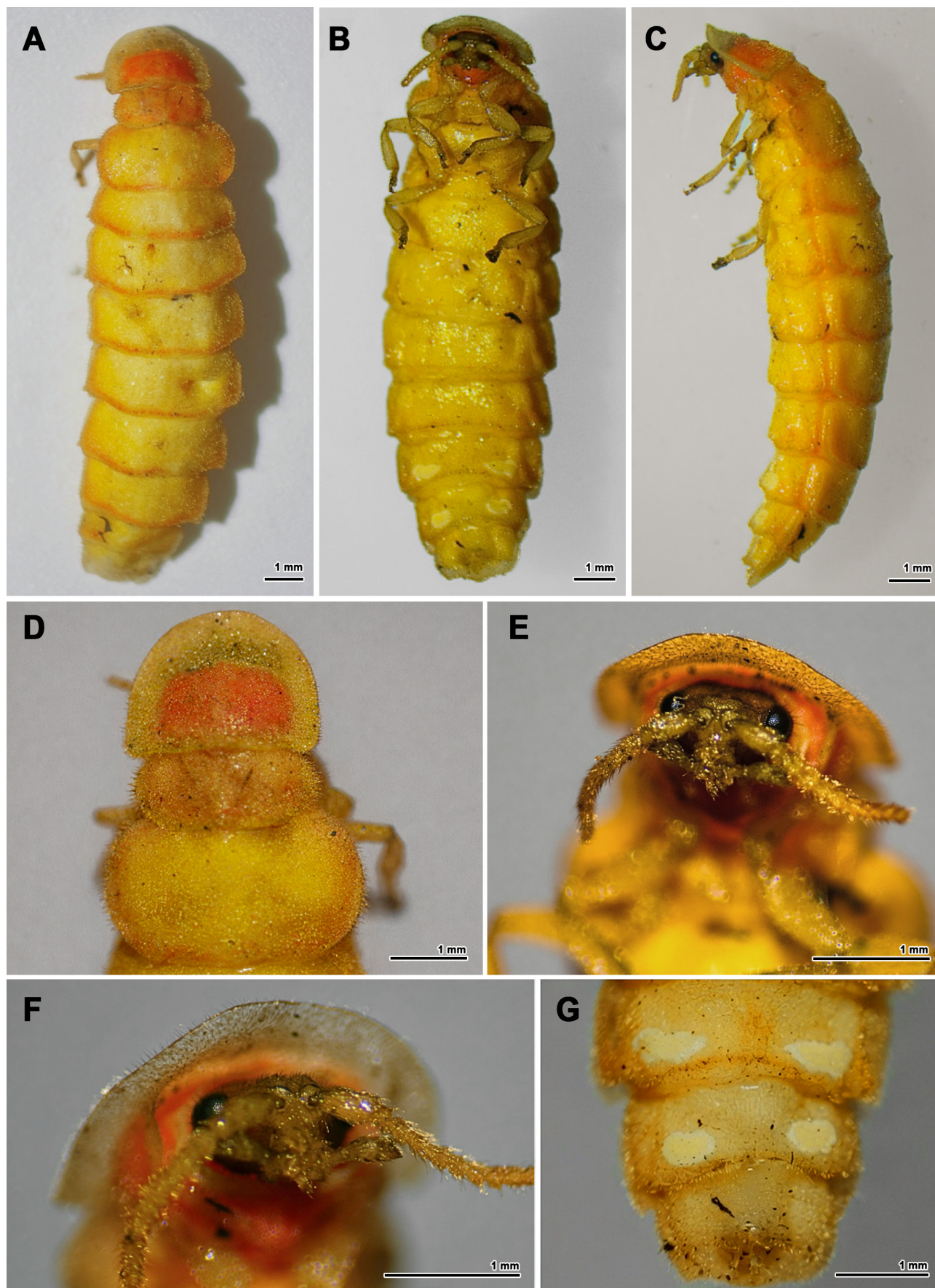


Figure 5. *Diaphanes mawlynnong* sp. nov. Female. **A.** Habitus, dorsal view; **B.** Habitus, ventral view; **C.** Habitus, lateral view; **D.** Pronotum, mesonotum and metanotum; **E-F.** Head with eyes and antenna; **G.** Terminal abdominal segments with LO.

The parameres are sturdy lobes that are sub-parallel in their basal 3/4, diverging distally into slender, blunt-tipped lobes that are distinctly curved laterally, with apical arms slender but not in the typical thumb shape (arrowed Y in Fig. 4K). *Diaphanes niveus* Jeng has slightly laterally curved paramere tips, whereas ML (arrowed in X in Fig. 4J) is slender without any elliptical expansion and dilated tip. The basal piece is shorter than the parameres, asymmetric, and a narrow, sclerotised Y-shaped structure.

Larva. unknown.

Female (Fig. 5A–G). TBL: 21.5 mm, TBW: 4 mm; apterous and larger than male.

Colour. Colouration creamy yellow; central discs of pronotum, thoracic terga and sterna, and lateral margins of abdominal terga and pleurites reddish orange; antennae, frons, palpi, tibiae and tarsi pale brown.

Head (Fig. 5E–F). HW 1.2 mm; eyes smaller than males, eye width 0.2, and ED is 0.7 mm. *Antenna* (Fig. 5E–F) moniliform, 11-segmented, slightly longer than pronotal width; antennomeres 3–11 similar to each other, apical segment pointed at apex; antennal sockets rounded; ASD: 0.06, ASW 0.12 mm; ASD < ASW; clypeus and labrum fused.

Thorax. *Pronotum* (Fig. 5D), semicircular; 1.8 mm long, 2.4 mm wide, broader than long by 1.3 times, with apical margin slightly elevated; areolet area translucent; mesonotum transversely elliptical, narrower than the pronotum, with lateral sides broadly rounded. The metanotum is broadly elliptical, distinctly wider than both the pronotum and mesonotum, measuring 3.3 mm wide and 1.7 mm long; it is about 1.7 times as long as the mesonotum and 1.94 times broader than its own length. **Legs:** Front legs short and robust, with tarsomere 1 slightly longer than tarsomeres 2 and 3; middle and hind legs slender (Fig. 5B), with their 1st tarsomere approximately as long as the 2nd and 3rd tarsomeres.



Figure 6. Habitats, where the new *Diaphanes* species were found. **A.** Semi-evergreen forest, *D. meghalayanus* sp. nov.; **B.** Dense closed-canopy forest with rocky stream, *D. mawlynnong* sp. nov.

Abdomen. The abdomen (Fig. 5B) is slightly expanded in the middle, then weakly narrows toward tergite 7; all tergites have blunt apicolateral angles. A pair of irregularly shaped photogenic organs is endowed on each of abdominal pleuro-sternites 7–8; the last sternite is trisulcate and emarginate at the apex, with a slightly longer middle lobe than the lateral ones, the apical margin of the middle lobe is smooth and blunt, and the lateral lobes have a slightly sharp angle.

Biology. *Diaphanes mawlynnong* **sp. nov.** was recorded from a dense forest along with thick bamboo patches. The forest is densely covered with closed-canopy trees, bamboo patches, plantations, and a rocky, flowing stream; the ground vegetation layer is covered in shrubs, litter, and dry leaves (Fig. 6B). The female was found in the ground under a boulder where the males were flying atop. The temperature recorded was 19°C, and the humidity was 77%. The habitat where these fireflies were collected from remains largely undisturbed by human activities, accessible through a challenging terrain with dense forest, rivers, and large rock boulders. The remoteness of the habitat contributes to the minimal anthropogenic activities. Light pollution is absent, making firefly sightings clear, and the threat to the fireflies in this area remains low at present. Nocturnal, flying at around 15 meters above the ground, emitting a faint green, slow, pulsating flash. Females emit a slower and longer pulsating, faint green flash.

DISCUSSION

This study describes two new species of *Diaphanes*, *D. meghalayanus* **sp. nov.** and *D. mawlynnong* **sp. nov.**, from Meghalaya, Northeast India. This study fills the void to some extent in the existing knowledge gap on the genus *Diaphanes* in the country. Prior to this, the only known reference was a list of species based on Olivier (1907) (Table 1), over a century ago, with very limited taxonomic details, and eventually a checklist of Indian fireflies by Parvez et al. (2026). In addition, recent taxonomic keys and updated species list of this firefly group in the Indo-Burma hotspot are limited (Wijekoon & Wegiriya 2024; Jeng & Yang 2003). However, when confirming these two *Diaphanes* species as new to Science, all available literature, original descriptions of recorded species, museum depositories, and keys were retrieved in addition to getting feedback from the experts. Two new species are distinguished from their congeners based on their male genitalia and unique external morphology. *D. meghalayanus* **sp. nov.** is identified by a distinct pronotal median central disc, which is black medially with vivid red extending laterally. *Diaphanes mawlynnong* **sp. nov.** is characterised by its moniliform antennae (except *D. birmanensis* (Olivier)), a red pronotal central disc, a pronotal areolet area which is circular in shape with blunt posterior lateral corners, and a pale brown pronotum and elytra. The female of *D. mawlynnong* **sp. nov.**, which is wingless, is described here, providing valuable information on the sexual dimorphism. It was found beneath the soil in the crevice under a boulder, and its identity was confirmed through its mating association with males flying atop the same area. The female of *D. meghalayanus*, however, remains unknown.

In this study, *D. meghalayanus* **sp. nov.** and *D. mawlynnong* **sp. nov.** were collected across various parts of Meghalaya during the winter months. *Diaphanes mawlynnong* was found only in Mawlynnong, whereas *D. meghalayanus* **sp. nov.** was recorded from both Mawrasai and Mawlynnong. No other firefly species were recorded at these study sites during the survey period. Additionally, there are anecdotal records of *D. meghalayanus* **sp. nov.** from Mawsynram and Sohra, East Khasi Hills Districts, based on photographs submitted by locals. *Diaphanes mawlynnong* **sp. nov.** were found in a dense forest interspersed with bamboo patches and betel nut plantations, while *D. meghalayanus* **sp. nov.** were found in a broader range of habitats, including semi-evergreen forests, bamboo patches, and plantations. Further study effort is needed to determine whether *D. mawlynnong* **sp. nov.** is native to this specific locality. Both the localities from where these two new species were collected experienced minimal human disturbances and limited impact of urbanisation, as these are remote villages. Compared to areas with human settlements, firefly sightings in these habitats were clear due to the absence of light pollution. Consequently, the threat to these fireflies in these locations at the present time is low. While the subfamily Luciolinae has received considerable attention, the subfamily Lampyrinae remains underexplored due to lack of literature and taxonomic studies, pointing to a major gap in the knowledge of this genus worldwide.

Table 1. Recorded species of the genus *Diaphanes* Motschulsky, 1853 in India.

Sl	Species	Locality	Reference/s
1	<i>D. guttatus</i> Gorham, 1880	Bengal	Gorham (1880); McDermott (1966); Parvez et al. (2026)
2	<i>D. harmandi</i> Pic, 1925	Sikkim	McDermott (1966); Parvez et al. (2026)
3	<i>D. huddi</i> (Gorham, 1880)	Maharashtra	McDermott (1966); Parvez et al. (2026)
4	<i>D. ictericus</i> (Gyllenhal, 1817)	India (locality not specified)	Gyllenhal (1817); Motschulsky (1854); Olivier (1907); McDermott (1966); Parvez et al. (2026)
5	<i>D. indicus</i> Motschulsky, 1854	Himalaya	Motschulsky (1854); McDermott (1966); Parvez et al. (2026)
6	<i>D. limbatus</i> Gorham, 1880	Karnataka	Gorham (1880); Olivier (1900); McDermott (1966); Parvez et al. (2026)
7	<i>D. luniger</i> Motschulsky, 1853	Agra	Motschulsky (1853); McDermott (1966); Parvez et al. (2026)
8	<i>D. marginellus</i> (Hope, 1831)	Bihar, Manipur	Hope (1831); Gorham (1880); Gardner (1947); Kapur (1954); McDermott (1966); Ganguly (1973); Parvez et al. (2026)
9	<i>D. mendicanus</i> Gorham, 1880	Darjeeling	Gorham (1880); Gorham (1903); McDermott (1966); Parvez et al. (2026)
10	<i>D. olivieri</i> Gorham 1895	Belgaum, Kanara	Gorham (1895); McDermott (1966); Parvez et al. (2026)
11	<i>D. planus</i> Gorham, 1895	Calcutta and Belgaum	Gorham (1895); Gardner (1946); Gardner (1947); McDermott (1966); Parvez et al. (2026)
12	<i>D. simulator</i> Olivier, 1913	India (locality not specified)	Olivier (1913); McDermott (1966); Parvez et al. (2026)
13	<i>D. sinuatus</i> Olivier, 1908	India (locality not specified)	Olivier (1908); McDermott (1966); Li & Liang (2007); Parvez et al. (2026)
14	<i>D. mawlynnong</i> sp. nov.	Meghalaya	Current study
15	<i>D. meghalayanus</i> sp. nov.	Meghalaya	Current study

AUTHOR'S CONTRIBUTION

The authors confirm their contribution to the paper as follows: E.M. Nonglang: Conceptualization, fieldwork and data collection, dissections, imaging, and manuscript writing; C.D. Wijekoon: Taxonomic identification and manuscript editing; M. Ryndong and D.K. Das: Fieldwork and data collection; S. Sengupta and J.W. Shangpliang: Conceptualization and supervision. The authors read and approved the final version of the manuscript.

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AVAILABILITY OF DATA AND MATERIAL

The specimens listed in this study are deposited in the museum of Assam Don Bosco University (paratypes), and in ZSI Shillong (holotypes), and are available from the curator upon request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study only included arthropod material, and all required ethical guidelines for the treatment and use of animals were strictly adhered to in accordance with international, national, and institutional regulations. No human participants were involved in any studies conducted by the authors for this article.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTERESTS

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

GENERATIVE AI STATEMENT

The authors hereby declare the non-use of any AI-generated tools in the preparation of the content, tables, and figures of this paper.

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دو گونه جدید سوسک شب‌تاب از جنس *Diaphanes* Motschulsky (Coleoptera: Lampyridae: Lampyrinae) از ایالت مگالایا، شمال شرق هند

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ویراستار علمی
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چکیده: دو گونه جدید متعلق به جنس *Diaphanes* Motschulsky 1853 شامل *D. meghalayanus* Nonglang, *D. mawlynnong* Nonglang, Das, Shangpliang **sp. nov.** و *Das, Shangpliang sp. nov.* از مگالایا، شمال شرق هند توصیف شده‌اند. گونه *Diaphanes meghalayanus sp. nov.* با الگوی رنگی منحصر به فرد دیسک مرکزی، عدم وجود حفره گرد معمولی در پیش‌گرده، رنگ قهوه‌ای – زرد پیش‌گرده و بال‌پوش و سایر ویژگی‌های خاص اندام زادآوری نر متمایز می‌شود. گونه *Diaphanes mawlynnong sp. nov.* با داشتن شاخک‌های تسبیحی نادر، وجود حفرات پیش‌گرده دایروی، لبه‌های جانبی پشتی کُند پیش‌گرده و ویژگی‌های خاص اندام زادآوری جنس نر متمایز می‌شود. جنس ماده در گونه *D. mawlynnong sp. nov.* بدون بال بوده، و در همان زیستگاه که نرهای آن وجود داشتند پیدا شد. پیش از این مطالعه، ۱۳ گونه *Diaphanes* از هند ثبت شده‌اند و با کشف این دو گونه جدید، تعداد گونه‌های این جنس در این کشور به ۱۵ افزایش یافت. این یافته‌ها به طور قابل توجهی اطلاعات موجود در مورد تنوع و مناطق انتشار سوسک‌های شب‌تاب جنس *Diaphanes* را افزایش می‌دهد.

واژگان کلیدی: کانون زیستی، هندو-برمه، شب‌تاب، خاورزمین