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Review of the genera *Orionis* Shaw and *Stenothremma* Shaw (Braconidae) from India, with description of three new species

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Abstract. The Indian species of the genera *Orionis* Shaw and *Stenothremma* Shaw (Braconidae, Euphorinae) are reviewed. Both genera are reported for the first time from India. Three new species, *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov. from north-eastern India (Meghalaya), *O. femorator* Gupta, van Achterberg & Pattar sp. nov. from southern India (Karnataka and Tamil Nadu) and *Stenothremma flavator* Gupta & van Achterberg sp. nov. from southern India (Karnataka) are illustrated and described. A key to the Old World species of *Orionis* Shaw is provided.

Keywords. *Orionis*, *Stenothremma*, Euphorinae, India, new species.

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Introduction

Recently, two new species of *Orionis* Shaw, 1987 (Braconidae, Euphorinae) were collected from the northern, north-eastern and southern regions of India and a new species of *Stenothremma* Shaw, 1984 (Braconidae, Euphorinae) from southern India. The genera *Perilitus* Nees, 1819 and *Orionis* are closely related (Stigenberg *et al*. 2015) and especially *Perilitus* is morphologically variable (Chen & van Achterberg 1997; Haeselbarth 1999; Belokobylskij 2000). Shaw (1987), Bortoni *et al*. (2016) and

Broad & Stigenberg (2021) proposed a set of characters for their separation, but the morphological separation of *Orionis* and *Perilitus* remains challenging. The biology of *Orionis* is still largely unknown, but *Perilitus* have been reared mainly from adult Chrysomelidae Latreille, 1802 (Stenberg 2015) and Curculionidae Latreille, 1802 (Coleoptera) (Wilkinson 1929) and rarely from last instar larvae or pupae. *Orionis* is known from the Neotropical, Oriental and Palaearctic regions and *Perilitus* has a cosmopolitan distribution.

Both the new species of *Orionis* described in this paper are classified in the genus *Orionis* because of the combination of many generic characters as mentioned in Shaw (1987) and Bortoni *et al*. (2016) which include eyes extremely large and bulging anteriorly, with minute setae; frons rugose; occipital carina complete; malar space very short; malar suture present. Notauli sharply impressed; mesopleuron mostly smooth with wide rugose sternaulus; propodeum areolate. Fore wing vein 3RS not strongly curved, reaching wing margin near apex, vein 1-R1 distinctly longer than stigma; r-m absent. First tergite at most three times as wide apically as basally; spiracles on petiole very prominent and placed near middle; ovipositor straight to slightly curved and equal to or longer than first tergite. However, the important deviation of both these newly described species from the previous definitions of *Orionis* is the only variable character of the first tergite which is narrowly separated ventrally in the anterior half and fully separated in the posterior half.

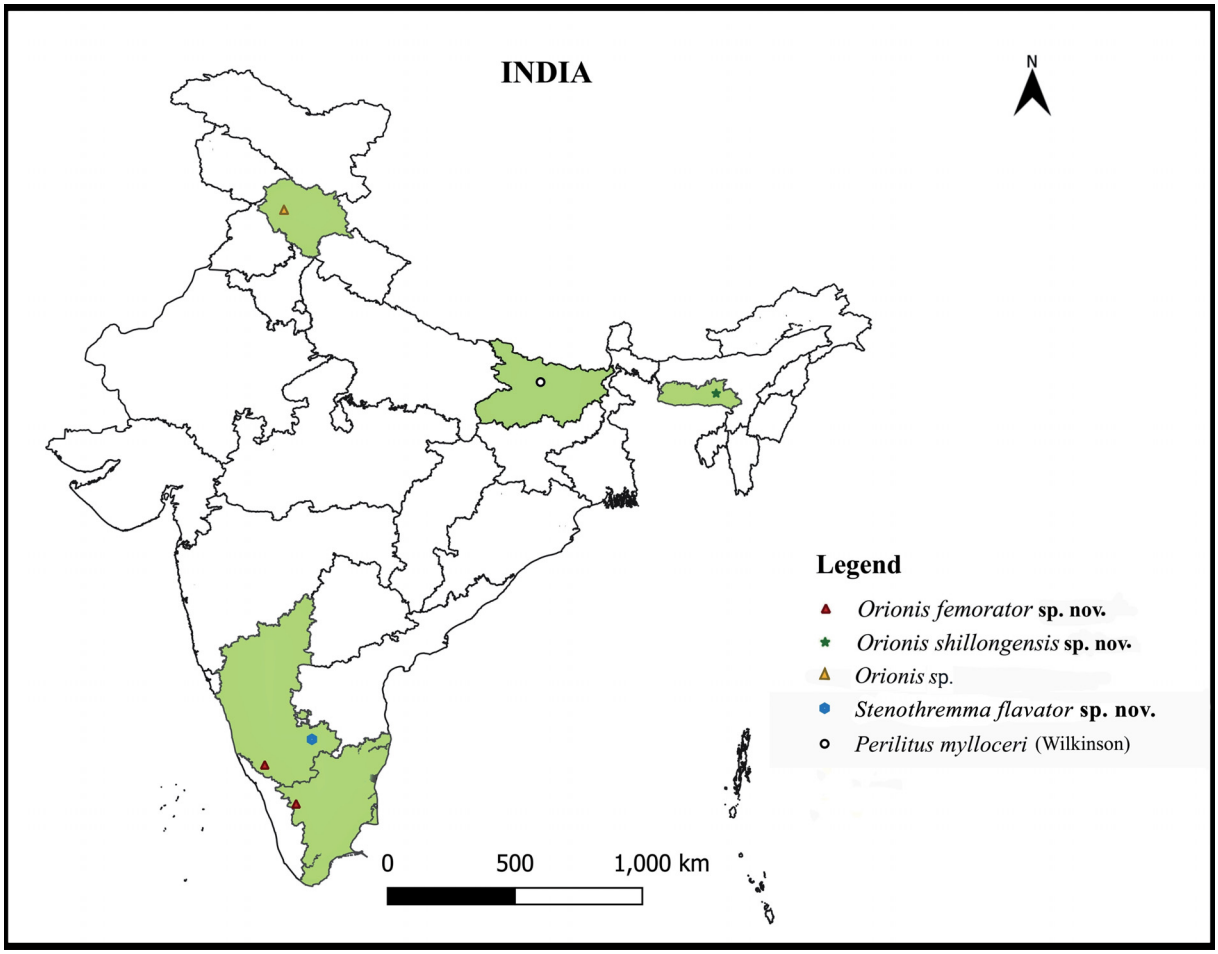

Fig. 1. Species distribution map of *Orionis* Shaw, 1987, *Perilitus* Nees, 1819 and *Stenothremma* Shaw, 1984 in India.

The genus *Stenothremma* is known from Australia and New Caledonia (Shaw 1984), and Vietnam from the Oriental region (Belokobylskij 1993). The genus *Stenothremma* as per Shaw (1984) can be identified by the long, sickle-like mandibles; median frontal carina; areolate-rugose propodeum; strong postero-medial propodeal impression; deep petiolar notch; long slender petiole, entirely fused ventrally; glymma and dorsope absent. *Stenothremma* may be distinguished from genera with a similarly long first tergite by its strongly compressed metasoma. In the present paper the genera *Orionis* and *Stenothremma* are reported for the first time from India.

Material and methods

Specimens were collected with a sweep net or in yellow pan traps at various locations in India, as shown in Fig. 1. The map was prepared using QGIS ver. 3.32 software.

The following abbreviations are used in the descriptions:

F1, F2 = first and second flagellomere, respectively
OD = Ocellar Diameter
OOL = Ocular Ocellar Line
POL = Posterior Ocellar Line
T1 = first metasomal tergite

Morphological terminology in general follows van Achterberg (1993). Photos were taken with a Leica M 205 A stereo-zoom microscope with Leica DC 420 inbuilt camera using automontage software (ver. 3.8). The specimens are deposited in the National Insect Museum (NIM) of ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru, India.

Results

Taxonomic account

Class Insecta Linnaeus, 1758
Order Hymenoptera Linnaeus, 1758
Family Braconidae Nees, 1811
Subfamily Euphorinae Foerster, 1863
Genus *Orionis* Shaw, 1987

Orionis shillongensis Gupta, van Achterberg & Pattar sp. nov.
urn:lsid:zoobank.org:act:9B5DAB79-CEA3-4AEC-97A5-FF2F01852632
Figs 2–6; Table 1

Diagnosis

Orionis shillongensis Gupta, van Achterberg & Pattar sp. nov. can be distinguished by having the hind coxa dorso-apically rugose-punctate, apical part of the first tergite parallel-sided in dorsal view (Fig. 4C), hind femur 5.8 × as long as wide, POL 1.1 × OOL (Fig. 3B), eye in dorsal view 3.1 × as long as temple (Fig. 3B) and the ovipositor sheath about 1.3 × length of the first tergite.

Etymology

Named after its type locality.

Type material

Holotype

INDIA • ♀, on card; Meghalaya, Shillong; 1525 m a.s.l; 15 Jun. 2013; A. Gupta and V. Naveen leg.; sweep net; NIM/NBAIR/Hym/Brac/Orio/150613-H.

Paratype

INDIA • 1 ♂, on card; same data as for holotype; NIM/NBAIR/Hym/Brac/Orio/150613-P.

Description

Female (holotype (NIM/NBAIR/Hym/Brac/Orio/150613-H), Fig. 2)

Colour. Head, mesosoma and T1 black; antenna brown; mandibles, labial and maxillary palpi yellowish brown; metasomal tergites beyond T1 dark brown dorsally; ovipositor yellow with sheath dark brown; legs mainly brown (Fig. 2). Wings weakly tinged brown, veins and pterostigma dark brown.

Measurements. Body length 6.3 mm; ovipositor length 1.7 mm; fore wing length 4.7 mm.

Head. Antenna more than 26 antennomeres (apex of antenna missing), third antennomere as long as fourth antennomere, and both 2.7× as long as wide; minute ocular setae present; face densely setose, becoming denser above clypeus; in dorsal view temples strongly curvedly narrowed behind eyes, eye 3.1× as long as temple (Fig. 3B), face distinctly narrowed below (Fig. 3A); occipital carina visible in dorsal view. POL:OOL:OD (relative) 23:21:11. Eye 2.3× as long as minimum distance between eyes in anterior view; malar space 0.4× as long as basal width of mandible.

Mesosoma. Pronotum rugose-punctate, partially smooth medially and concave anteriorly; middle lobe of mesoscutum coarsely punctate posteriorly, notauli crenulate, lateral lobes of mesoscutum with fine punctures, setae present near its apical margin, scutellar sulcus with 7–8 crenulae; propleuron with coarse spaced punctures; mesopleuron mostly setose, irregularly crenulate-rugose, smooth medially; propodeum coarsely irregularly areolate-rugose and punctate; median depression of propodeum relatively shallow (Fig. 3F). Hind femur 5.8× as long as wide; hind coxa dorsally rugose-punctate or coarsely reticulate (Fig. 4C).

Wings. Fore wing: m-cu clearly postfurcal (= distad to 2-SR); 1-R1 1.2× as long as pterostigma. Hind wing cu-a:1-M: 1r-m = 25:54:27.

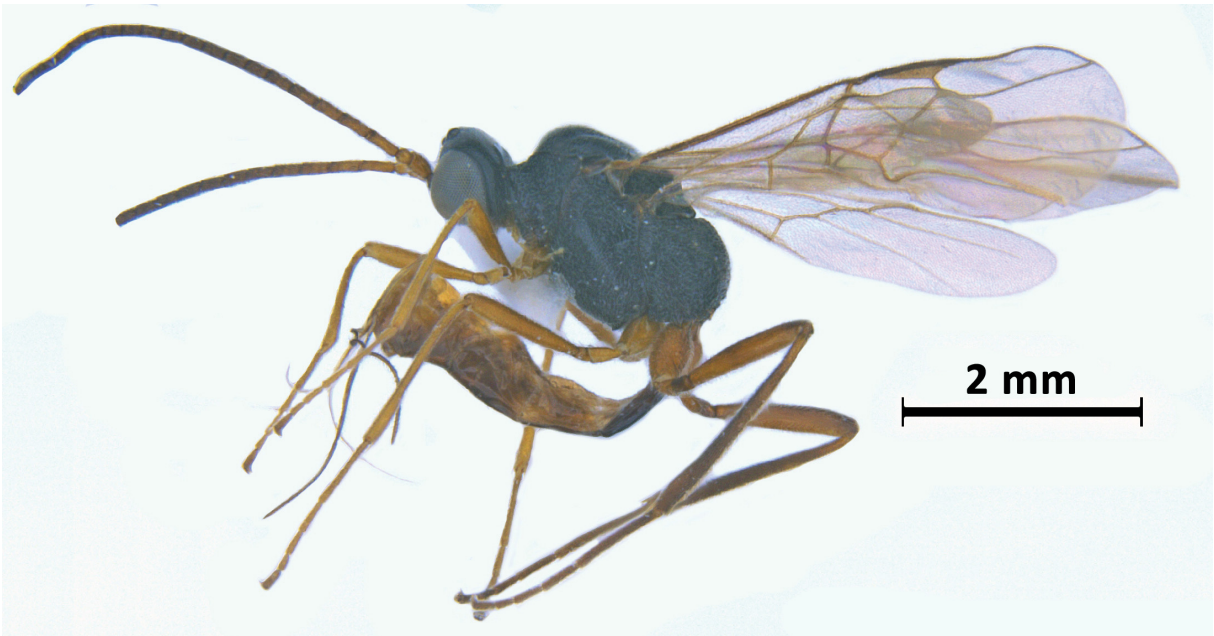

Fig. 2. *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/150613-H). Habitus, in lateral view.

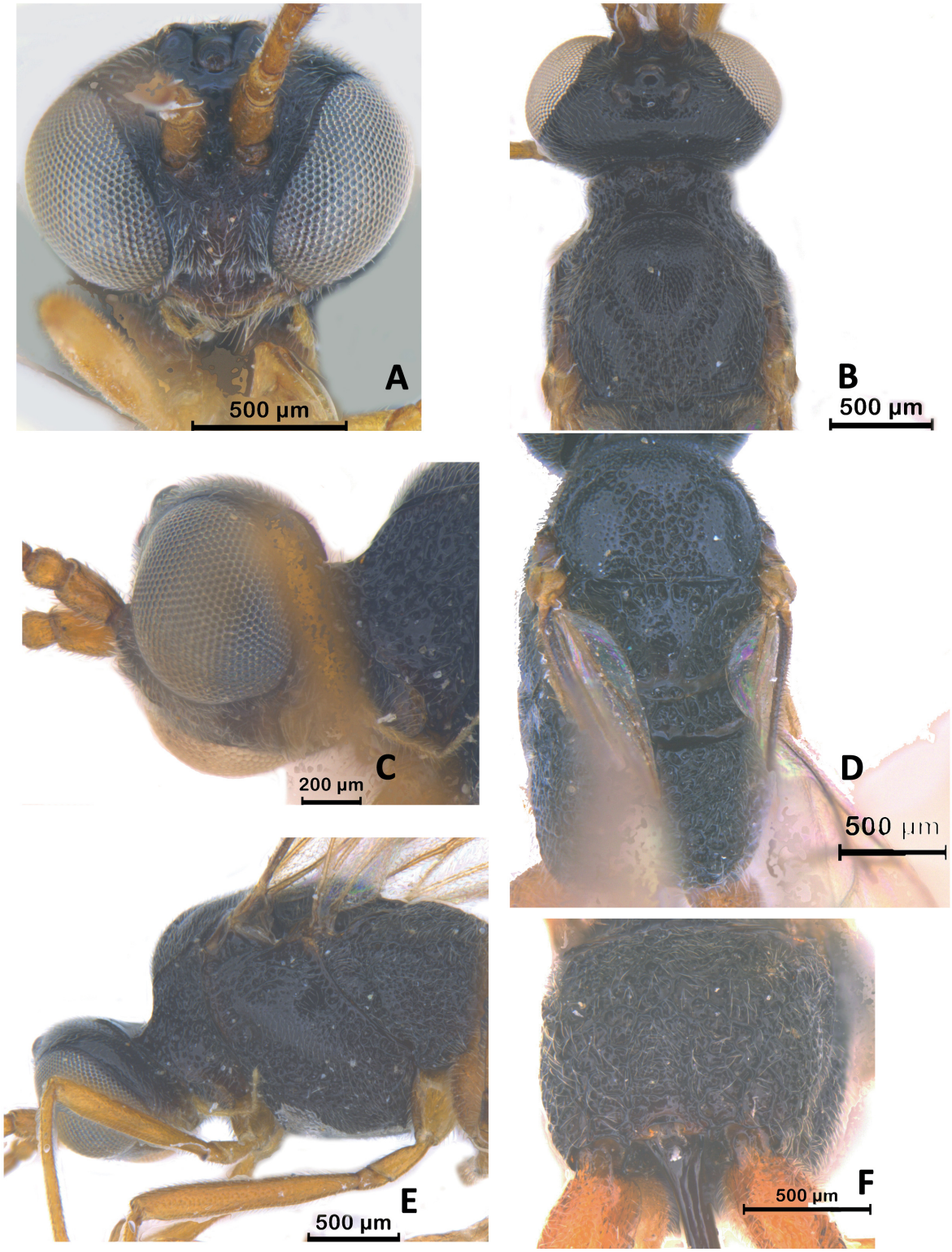

Fig. 3. *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/150613-H). **A**. Head, anterior view. **B**. Head and mesoscutum, dorsal view. **C**. Head, lateral view. **D**. Mesosoma, dorsal view. **E**. Head and mesosoma, lateral view. **F**. Propodeum, dorsal view.

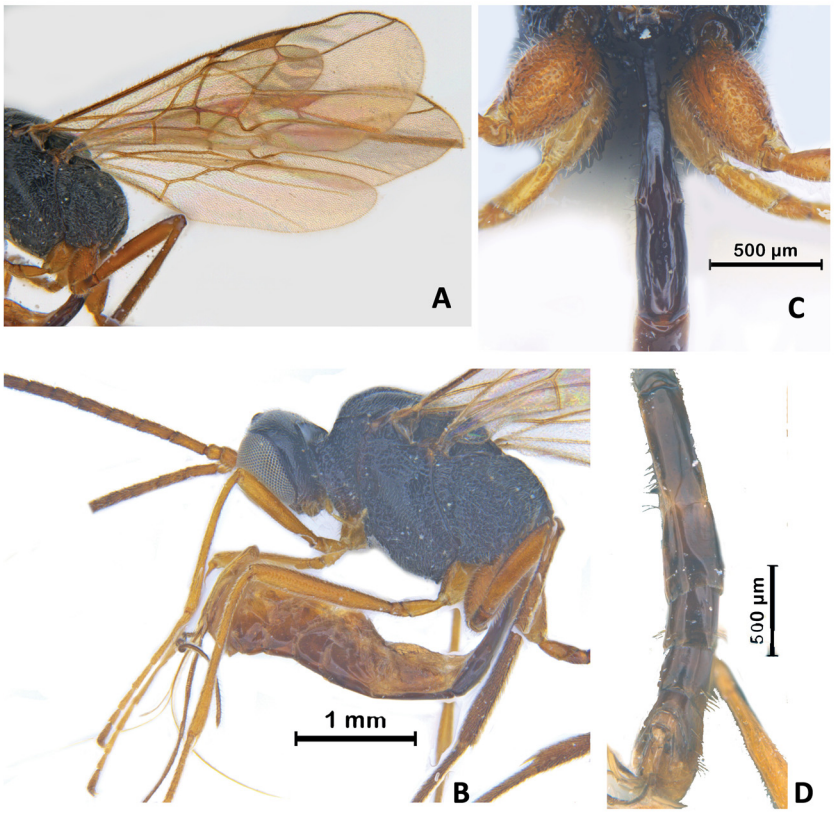

Fig. 4. *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/150613-H). **A**. Wings. **B**. Body in part, lateral view. **C**. T1, dorsal view. **D**. Metasoma, dorsal view, in part.

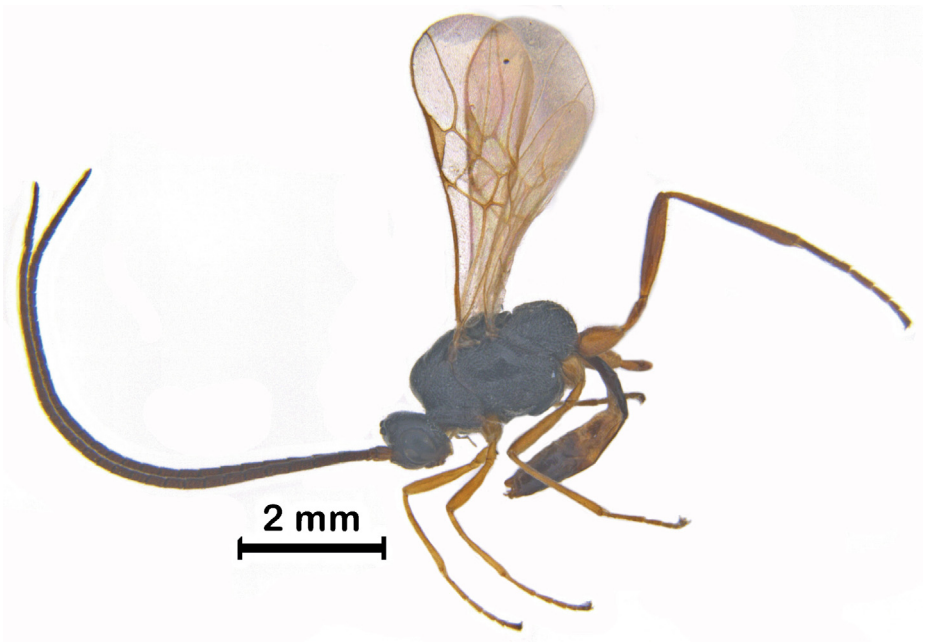

Fig. 5. *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov., paratype, ♂ (NIM/NBAIR/Hym/Brac/Orio/150613-P). Habitus, lateral view.

Metasoma. Tergites mainly smooth, but T1 with some coarse punctures (Fig. 4C). T1 0.6× as long as mesosoma; T1 about 6.2× as long as its apical width; apical width of T1 2.5× its narrowest subbasal width (Fig. 4C); ventrally anterior half of T1 nearly closed and spiracles near middle of tergite; ovipositor sheath about 1.3× as long as T1.

Male (paratype (NIM/NBAIR/Hym/Brac/Orio/150613-P), Figs 5–6)
Similar to female in general appearance. Body length 6.4 mm; fore wing length 6.4 mm. Antenna with 37 antennomeres. T1 about 7.6× as long as its apical width. Hind femur 5.6× as long as wide. Differs from female in having malar space 1.1× as long as basal width of mandible, longer interocular distance and longer flagellomeres.

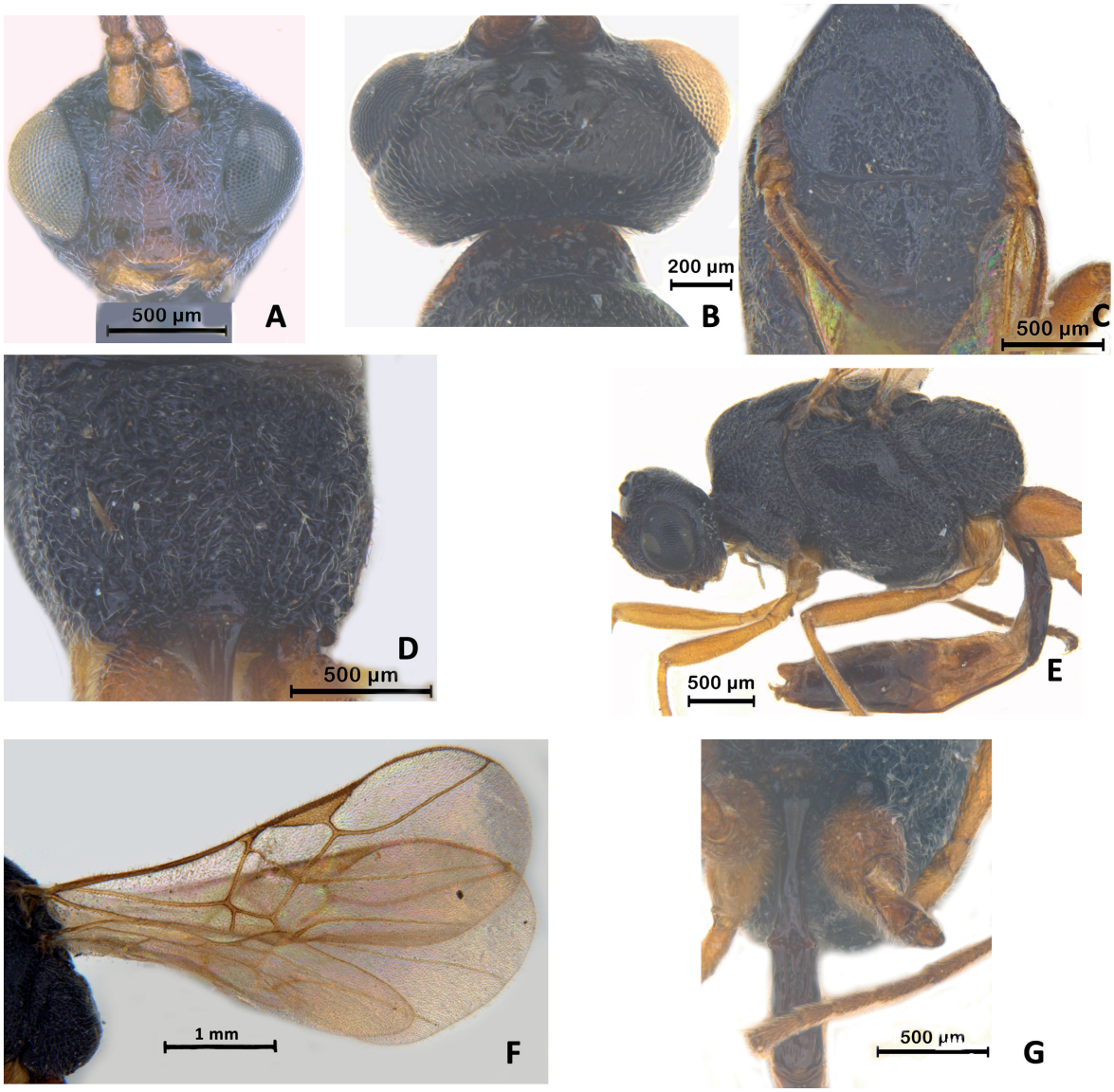

Fig. 6. *Orionis shillongensis* Gupta, van Achterberg & Pattar sp. nov., paratype, ♂ (NIM/NBAIR/Hym/Brac/Orio/150613-P). **A**. Head, anterior view. **B**. Head, dorsal view. **C**. Mesosoma, dorsal view. **D**. Propodeum, dorsal view. **E**. Body, lateral view. **F**. Wings. **G**. T1, dorsal view.

Comments

The new species differs from the closely similar *O. coxator* (Belokobylskij, 1995) in having the ovipositor sheath about 1.3 × length of first tergite (vs 1.4–1.6 × in *O. coxator*); hind coxa dorso-apically rugose-punctate (vs hind coxa dorso-apically with curved striae in *O. coxator*); in dorsal view posterior part of T1 parallel-sided and mainly smooth (vs in dorsal view posterior part (= behind spiracles) of T1 widened and densely longitudinally striate in *O. coxator*); hind femur 5.6–5.8 × as long as wide (vs 4.3–4.8 × in *O. coxator*).

Distribution

Known only from Shillong, Meghalaya in north-eastern India.

Orionis femorator Gupta, van Achterberg & Pattar sp. nov.
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Figs 7–10; Table 1

Diagnosis

Second flagellar segment (F2) of female of *Orionis femorator* Gupta, van Achterberg & Pattar sp. nov. is nearly as long as first segment (F1) and more than 2.5 × as long as wide, apical third of antenna yellowish (Figs 7–8), POL slightly shorter than OOL (Fig. 9B), length of eye in dorsal view 1.9 × temple, hind femur 6.6 × as long as wide (Figs 7–8) and ovipositor sheath 0.9–1.5 × as long as first tergite.

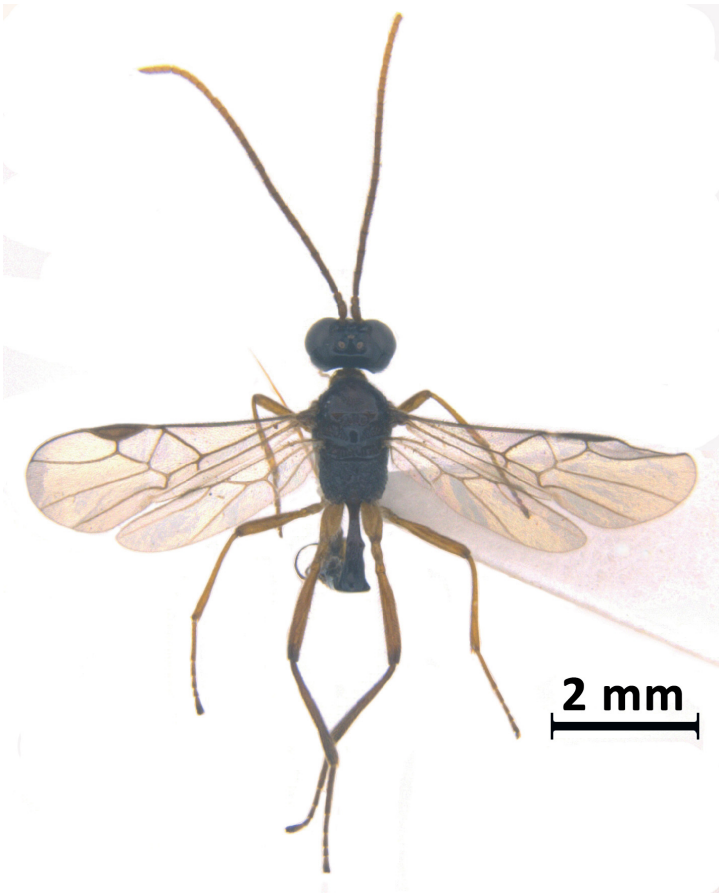

Fig. 7. *Orionis femorator* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/10715-H). Habitus, dorsal view.

Etymology

Named after the comparatively elongate hind femur.

Material examined

Holotype

INDIA • ♀, on card; Tamil Nadu; 411 m a.s.l; 10 Jul. 2015; NBAIR team leg.; yellow pan trap; NIM/NBAIR/Hym/Brac/Orio/10715-H.

Paratypes

INDIA • 1 ♀, on card; same data as for holotype; NIM/NBAIR/Hym/Brac/Orio/10715-P1 • 1 ♀, on card; Karnataka, Chettalli; 513 m a.s.l; 13–16 Feb. 2023; R. Pattar and H. Kumar leg.; yellow pan trap; NIM/NBAIR/Hym/Brac/Orio/160223-P2.

Description

Female (Figs 7–8)

Colour. Largely black. Frons and clypeus yellowish brown, vertex black, ocelli pale yellow; pronotum and propleuron yellowish brown; mesosoma largely reddish brown; propodeum and T1 black; antenna brown with 11 apical antennomeres yellowish; mandibles except brown tip, labial and maxillary palpi pale yellowish; metasomal tergites beyond T1 dark brown; ovipositor yellowish brown; legs mainly yellowish brown but apex of hind femur, hind tibia and tarsus darkened. Wings weakly tinged brown, veins and pterostigma dark brown.

Measurements. Body length 6.3 mm; ovipositor length 2.4 mm; fore wing length 3.8 mm.

Head. Antenna with 25 antennomeres, third antennomere (F1) 1.1 × as long as fourth antennomere (F2), third and fourth antennomere almost similar in width, third antennomere 4.2 × as long as wide; setae

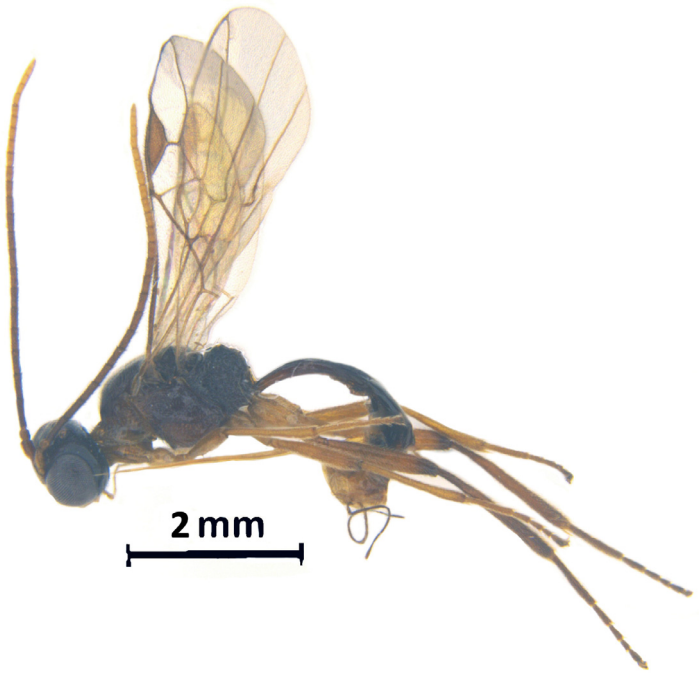

Fig. 8. *Orionis femorator* Gupta, van Achterberg & Pattar sp. nov., paratype, ♀ (NIM/NBAIR/Hym/Brac/Orio/10715-P1). Habitus, lateral view.

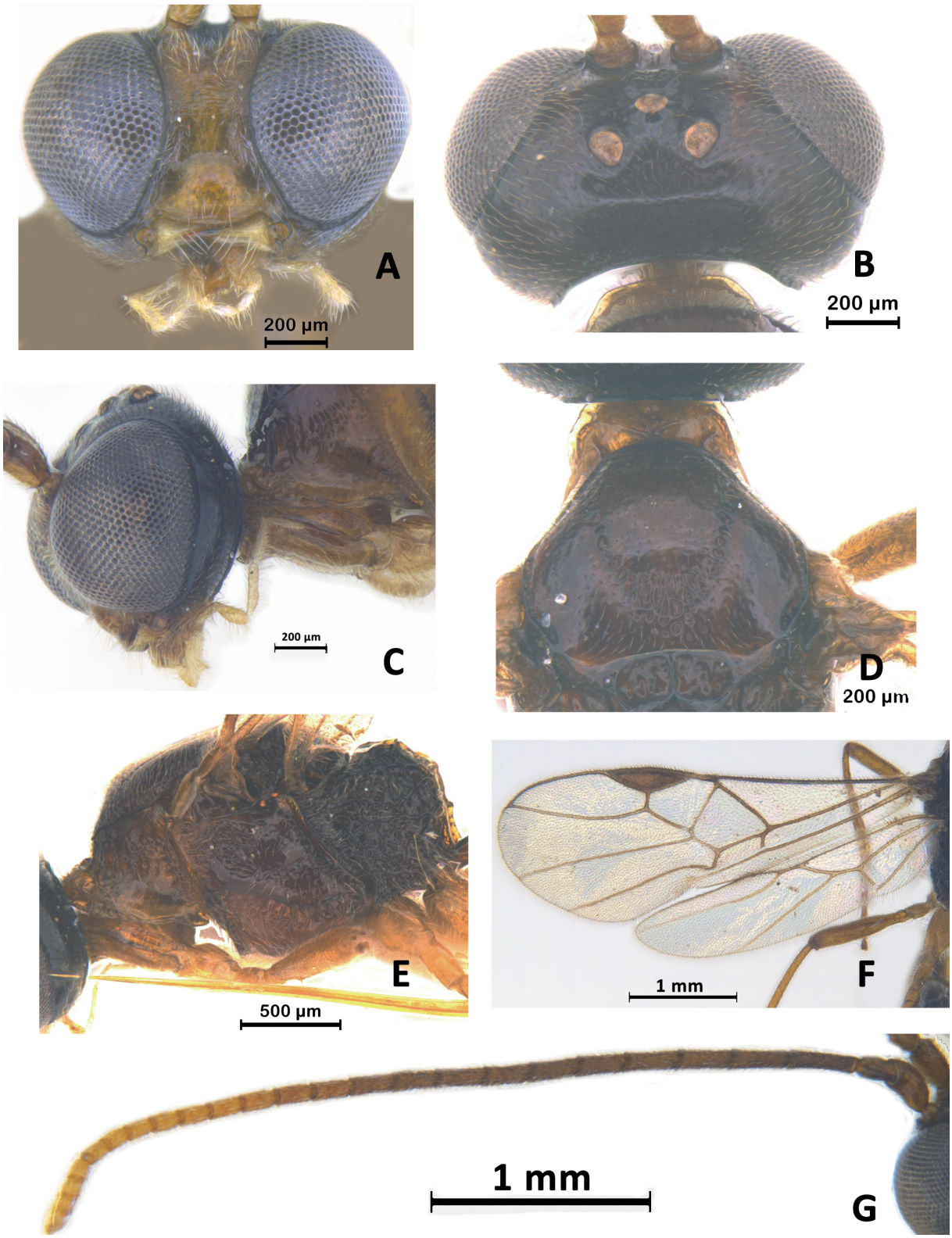

Fig. 9. *Orionis femorator* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/10715-H). **A**. Head, anterior view. **B**. Head, dorsal view. **C**. Head, lateral view. **D**. Mesoscutum, dorsal view. **E**. Mesosoma, lateral view. **F**. Wings. **G**. Antenna.

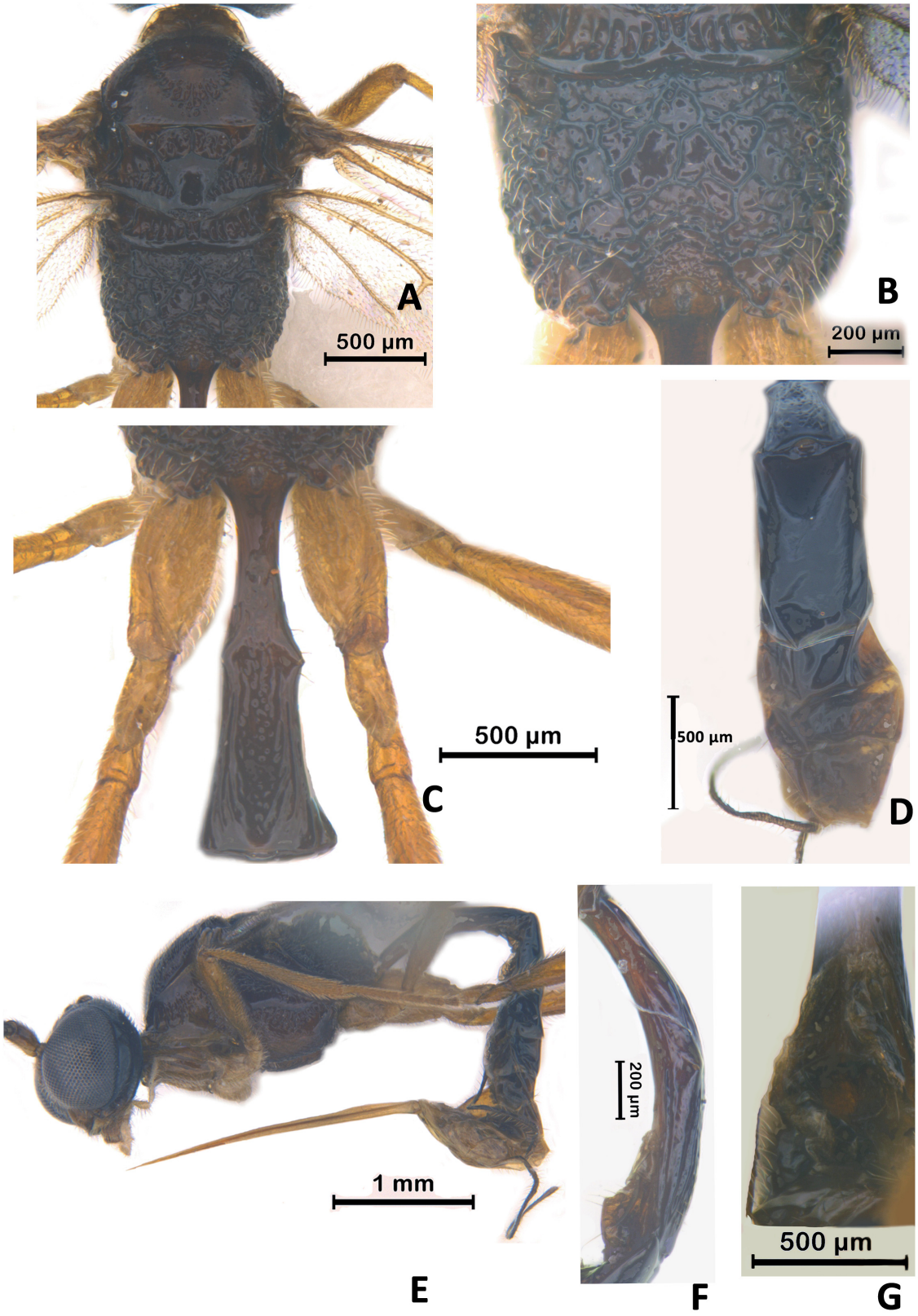

Fig. 10. *Orionis femorator* Gupta, van Achterberg & Pattar sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Orio/10715-H). **A**. Mesosoma, dorsal view. **B**. Propodeum, dorsal view. **C**. T1, dorsal view. **D**. Metasoma in part. **E**. Body, lateral view. **F**. T1, lateral view. **G**. T1, ventral view.

more concentrated surrounding torular region and adjacent to eye margin in posterior half, few above clypeus, evenly and sparsely scattered on vertex; frons smooth except few transverse rugae; vertex smooth; in dorsal view temples slightly curved and directly narrowed behind eyes, eye 1.9 × as long as temple in dorsal view (Fig. 9B), occipital carina visible in dorsal view. POL almost equidistant to OOL. POL:OOL:OD = 16:17:9. Eye 2.5 × as long as minimum distance between eyes in anterior aspect; face strongly narrowed below (Fig. 9A); malar space 0.3 × as long as basal width of mandible.

Mesosoma. Pronotum mostly smooth medially except for two incomplete lateral rugae, diverging laterally from apical margin, and two sublateral rugae converging medially; mesoscutum finely and sparsely punctulate, sparsely setose; notauli crenulate, meeting posteriorly; scutellar sulcus with two prominent costulae and three carinae; mesopleuron with irregular pattern of rugae marginally, but smooth medially; precoxal sulcus deep and crenulate; propodeum with irregularly arranged large areolae, coarsely rugose, angulate in lateral view (Fig. 9E); median depression of propodeum indistinct. Hind femur 6.6 × as long as wide; coxa dorsally rugose-punctate (Fig. 10C).

Wings. Fore wing: m-cu clearly postfurcal (= distad to 2-SR); 1-R1 1.1 × length of pterostigma. Hind wing veins cu-a:1-M:1r-m = 20:23:25.

Metasoma. Fist tergite with scattered punctures in posterior half with few longitudinal striae laterally, anterior half with faint rugosity (Fig. 10C). T1 0.6 × as long as mesosoma and about 3.5 × as long as its apical width; apical width of T1 2.8 × its narrowest subbasal width, ventrally basal half of T1 nearly closed and spiracles near middle of T1; ovipositor sheath about 1.5 × as long as T1.

Variation. Ovipositor sheath 0.9–1.5 × as long as T1.

Male

Unknown.

Comments

The new species differs from the similar *O. orientalis* Shaw & Shimbori, 2016 by having the face yellowish brown (vs yellow in *O. orientalis*); the apical segments of antenna brownish yellow (vs dark brown in *O. orientalis*); in lateral view propodeum angulate (vs rounded in *O. orientalis*); T1 0.6 × as long as mesosoma (vs 0.7 × in *O. orientalis*); T1 about 3.5 × as long as its apical width (vs 3.7 × in *O. orientalis*) and ovipositor sheath 0.9–1.5 × as long as T1 (vs 1.6 × in *O. orientalis*).

Distribution

Known from southern India (Tamil Nadu and Karnataka).

Orionis sp.

Material examined

INDIA • 1 ♂; Himachal Pradesh, Palampur; 1250 m a.s.l.; 24 Oct. 2017; A. Gupta leg.; sweep net; NIM/NBAIR/Hym/Brac/Orio/241017-P3.

Comments

Only a single male was collected, hence the species identity could not be ascertained.

Distribution

Known from northern India (Himachal Pradesh).

Table 1. Comparison of differentiating characters of the new species.

Differentiating characters	***Orionis shillongensis*** sp. nov.	***Orionis femorator*** sp. nov.	***Stenothremma flavator*** sp. nov.
Ratio of malar space vs basal width of mandible	0.4 ×	0.3 ×	1.1 ×
1-R1 vs pterostigma	1-R1 of fore wing about as long as pterostigma	1-R1 of fore wing about as long as pterostigma	1-R1 of fore wing 0.6 × as long as pterostigma
Hind femur	Hind femur 5.8 × as long as wide	Hind femur 6.6 × as long as wide	Hind femur 4.9 × as long as wide
T1 ventral and position of spiracles	basal half of T1 nearly closed ventrally and spiracles near middle of T1	basal half of T1 nearly closed ventrally and spiracles near middle of T1	basal half of T1 closed ventrally and spiracles at apical 0.3 × of T1
Ovipositor sheath	about 1.3 × length of first tergite	0.9–1.5 × as long as first tergite	about 0.7 × as long as first tergite

Genus *Stenothremma* Shaw, 1984

Stenothremma flavator Gupta & van Achterberg sp. nov.
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Figs 11–14; Table 1

Diagnosis

Malar space of female of *Stenothremma flavator* Gupta & van Achterberg sp. nov. is slightly longer than basal width of mandible (Fig. 12A), spiracles of first tergite situated at posterior 0.3–0.4 of tergite (Fig. 13B), head, pterostigma, mesosoma and metasoma dorsally yellowish brown; vein 1-R1 of fore wing 0.6× as long as pterostigma (Fig. 13A); posterior half of first tergite partly finely reticulate; posterior face of propodeum oblique in lateral view (Fig. 13A), ovipositor sheath about half as long as metasoma without first tergite and first tergite apically narrower than at level of spiracles.

Etymology

Named after the yellowish body colour ('*flavus*' is Latin for 'yellow').

Material examined

Holotype

INDIA • ♀, on card; Karnataka, Doddaballapura; 880 m a.s.l; 18 Dec. 2020; R. Prajwal leg.; sweep net; NIM/NBAIR/Hym/Brac/Sten/181220-H.

Paratypes

INDIA • 1 ♀, on card; Karnataka, Doddaballapura; 880 m a.s.l; 10 Aug. 2023; Hemanth Kumar leg.; sweep net; NIM/NBAIR/Hym/Brac/Sten/100823-P1 • 1 ♂, on card; same data as for preceding; R. Pattar leg.; NIM/NBAIR/Hym/Brac/Sten/100823-P2.

Description

Female (holotype (NIM/NBAIR/Hym/Brac/Sten/181220-H), Fig. 11)

Colour. Largely yellowish brown except for black eyes, brown tip of mandibles, brownish 11–12 apical antennomeres and dark brown ovipositor sheath.

Measurements. Body length 4.7 mm; ovipositor length 0.9 mm; fore wing length 3.0 mm.

Head. Antenna with 20 antennomeres, third antennomere 1.1–1.2× as long as fourth antennomere, and 4× as long as wide; face densely and evenly setose, finely reticulate; vertex shallowly rugose; in dorsal view temples hardly curved and directly narrowed behind eyes, eye 1.5× as long as temple (Fig. 12B), occipital carina visible in dorsal view; POL:OOL:OD = 15:29:8. Eye 0.7× as long as minimum distance between eyes in anterior aspect; malar space 1.1× as long as basal width of mandible (Fig. 12A).

Mesosoma. Pronotum partially smooth medially (dorsal aspect), laterally with prominent longitudinal striae; middle lobe of mesoscutum finely punctulate, notauli crenulate, lateral lobes of mesoscutum almost smooth, setae present throughout except on middle lobe, scutellar sulcus with eight crenulae; propleuron irregularly rugose; mesopleuron finely reticulate with few setae at its apical 0.3; postpectal carina present; propodeum coarsely irregularly areolate-rugose and punctate except for finely punctate medio-longitudinal depression in posterior half. Hind femur 4.9× as long as wide; coxa dorsally rugose (Fig. 13B).

Wings. Fore wing: m-cu weakly postfurcal (= distad to 2-SR); 1-R1 0.6× length of pterostigma. Hind wing cu-a:1-M:1r-m = 15:19:13.

Metasoma. Tergites smooth, but T1 partly finely reticulate in posterior half, irregularly rugose in anterior half (Fig. 13B). T1 0.8 × as long as mesosoma; T1 about 6.3 × as long as its apical width; apical width of T1 1.9 × its narrowest subbasal width; T1 apically narrower than at level of spiracles (Fig. 13D); ventrally basal half of T1 closed, laterally angulate and spiracles situated at apical 0.3 × of T1; ovipositor sheath about 0.7 × as long as T1.

Variation. Third antennomere 1.1–1.2 × as long as fourth antennomere; ovipositor sheath about 0.6–0.7 × as long as T1.

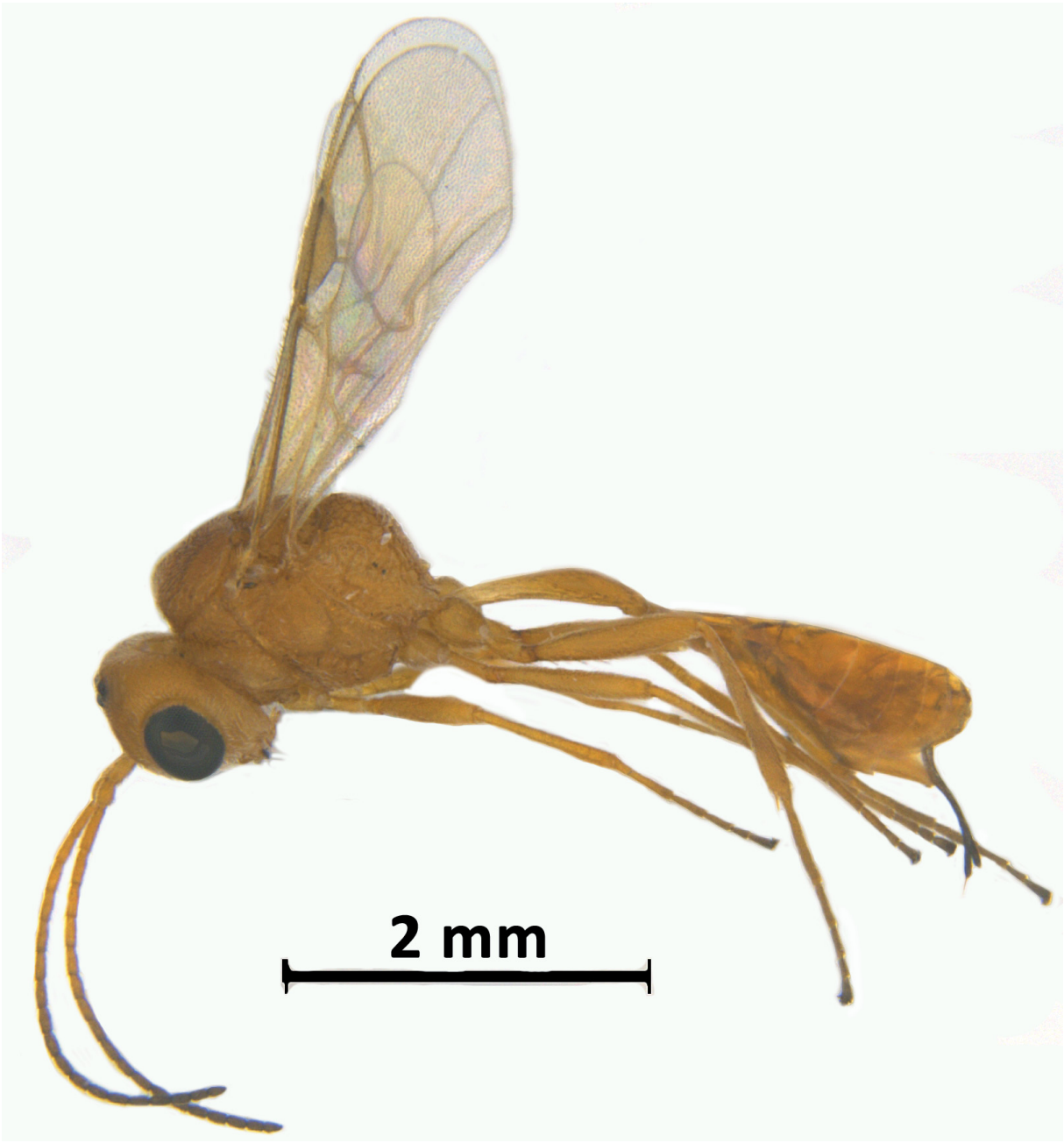

Fig. 11. *Stenothremma flavator* Gupta & van Achterberg sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Sten/181220-H). Habitus, lateral view.

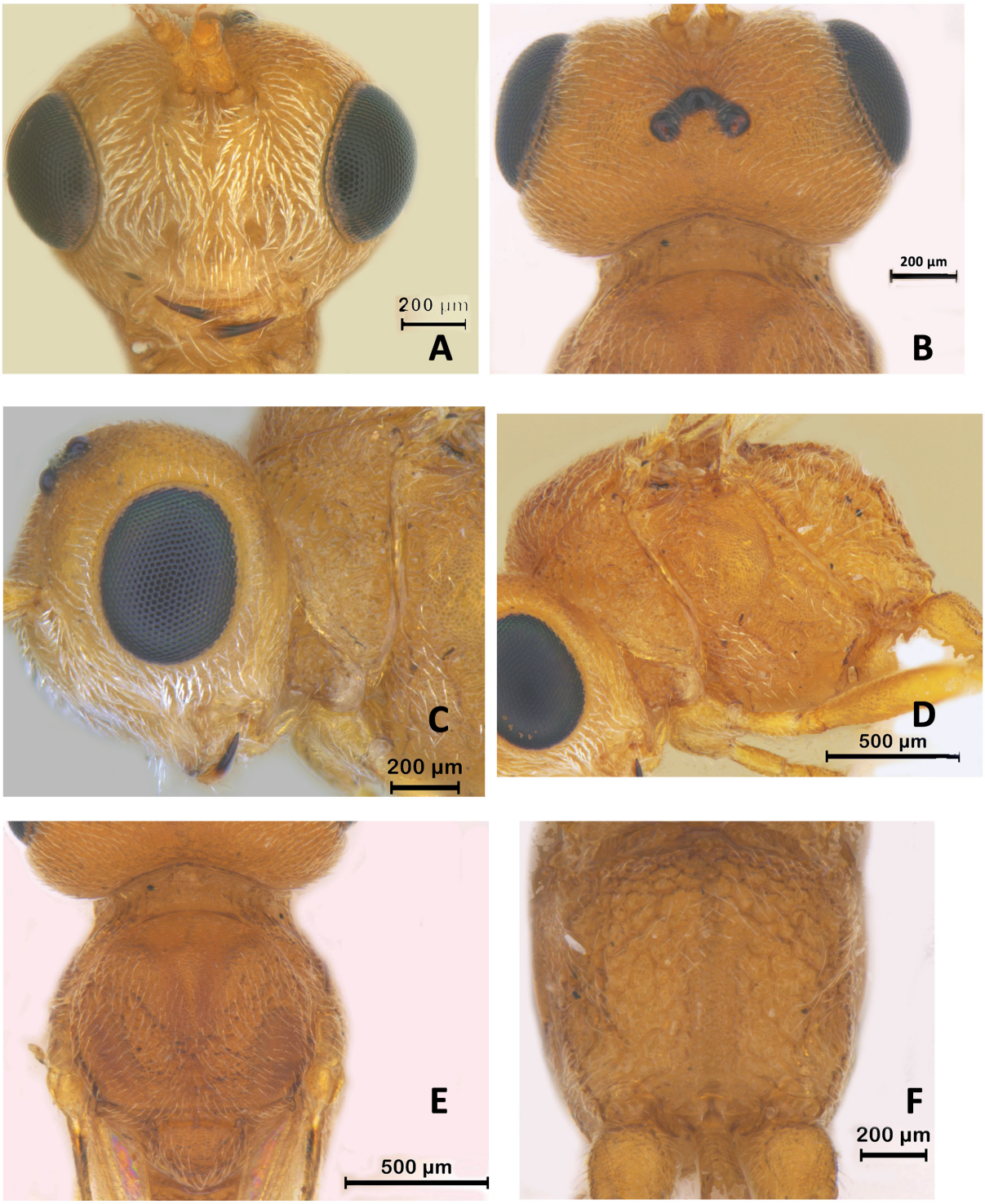

Fig. 12. *Stenothremma flavator* Gupta & van Achterberg sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Sten/181220-H). **A**. Head, anterior view. **B**. Head, dorsal view. **C**. Head, lateral view. **D**. Mesosoma, lateral view. **E**. Mesoscutum, dorsal view. **F**. Propodeum, dorsal view.

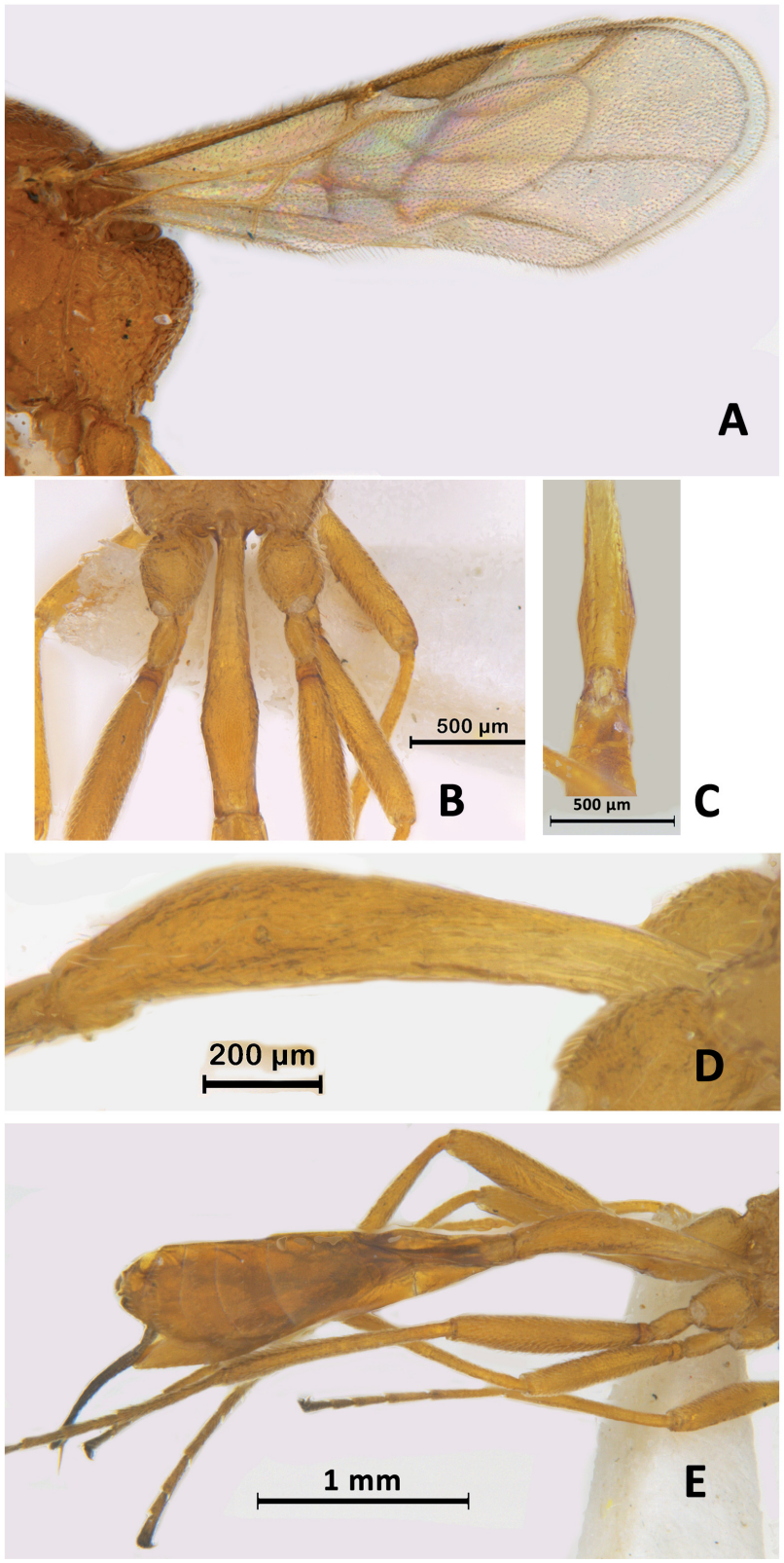

Fig. 13. *Stenothremma flavator* Gupta & van Achterberg sp. nov., holotype, ♀ (NIM/NBAIR/Hym/Brac/Sten/181220-H). **A**. Wings. **B**. T1, dorsal view. **C**. T1, ventral view. **D**. T1, lateral view. **E**. Metasoma, lateral view.

Male (paratytpe (NIM/NBAIR/Hym/Brac/Sten/100823-P2) Fig. 14)
Body yellow. Antenna with 19 antennomeres. Remaining characters similar to female except for ovipositor.

Distribution

Known from southern India (Karnataka).

Fig. 14. *Stenothremma flavator* Gupta & van Achterberg sp. nov., paratype, ♂ (NIM/NBAIR/Hym/Brac/Sten/100823-P2). Habitus, lateral view.

Comments

The new species differs from the similar *Stenothremma vieti* Belokobylskij, 1993 by having yellowish brown basal half of flagellum (vs dark brown in *S. vieti*); eye length 3.9 × malar space (in lateral view) (vs 2.8 × in *S. vieti*); POL 2 × OD (vs 1.6 × in *S. vieti*); first tergite unicolourous (vs anterior one fifth dark brown in *S. vieti*); length of first tergite 5.2 × its maximum width (vs 5.6 × in *S. vieti*).

Key to Old World species of the genus Orionis Shaw, 1987

1. Pronotum and propleuron yellow; first metasomal tergite dorsally weakly rugose or finely reticulate; m-cu of fore wing distad to 2-RS; [Oriental: Thailand] ..... ***O. orientalis*** Shaw & Shimbori, 2016
– Pronotum and propleuron black; other characters variable 2

2. First metasomal tergite dorsally entirely striate; POL 1.7−2 × Od, 0.8−0.9 × OOL; m-cu of fore wing antefurcal of subinterstitial to 2-RS; ovipositor sheath narrow, 1.4−1.5 times as long as first tergite; [Eastern Palaearctic] ..... ***O. flavifacies*** (Belokobylskij, 2000)
– First metasomal tergite not always entirely striate; other characters variable 3

3. Second flagellar segment of ♀ much shorter than first segment and about twice as long as wide; ovipositor sheath about 2.0 × length of first tergite; hind coxa dorso-apically rugose-punctate; [China and Korea] ..... ***O. erratus*** (Chen & van Achterberg, 1997)
– Second flagellar segment of ♀ nearly as long as first segment and more than 2.5 × as long as wide or 2.5–4.2 × as long as wide (Figs 4B, 9G); ovipositor sheath 0.9–1.6 × length of first tergite; sculpture of hind coxa variable 4

4. Apical third of antenna yellowish (Figs 7–8); hind femur 6.6 × as long as wide (Figs 7–8); ovipositor sheath 0.9–1.5 × as long as first tergite; [POL slightly shorter than OOL (Fig. 9B); length of eye in dorsal view 1.9 × temple]; [Oriental: South India] ..... ***O. femorator*** Gupta, van Achterberg & Pattar sp. nov.
– Apical third of antenna dark brown; hind femur 4.3–5.8 × as long as wide (Fig. 4B); ovipositor sheath 1.3–1.6 × as long as first tergite; [Palaearctic] 5

5. Hind coxa dorso-apically with curved striae; in dorsal view posterior part (= behind spiracles) of first tergite widened; hind femur 4.3–4.8 × as long as wide; POL 0.7–0.9 × OOL; eye in dorsal view 1.3–1.6 × as long as temple; ovipositor sheath 1.4–1.6 × as long as first tergite; [West and East Palaearctic] ..... ***O. coxator*** (Belokobylskij, 1995)
– Hind coxa dorso-apically rugose-punctate; in dorsal view posterior part of first tergite parallel-sided (Fig. 4C); hind femur 5.8 × as long as wide; POL 1.1 × OOL (Fig. 3B); eye in dorsal view 3.1 × as long as temple (Fig. 3B); ovipositor sheath about 1.3 × length of first tergite; [South Palaearctic] ... ***O. shillongensis*** Gupta, van Achterberg & Pattar sp. nov.

Discussion

Based on the comparative morphological analyses of specimens of the genus *Orionis* and *Stenothremma* from India it can be concluded that the species of the genus *Stenothremma* have a predominantly yellowish brown mesoscutum and metasoma in comparison to dark reddish brown or black in *Orionis*. The malar space of females is slightly longer than the basal width of the mandible in *Stenothremma* whereas in *Orionis* it is about 0.3–0.4 × the basal width of the mandible. Additionally, either the spiracles of the first tergite are at the posterior 0.3–0.4 of the tergite or the posterior half of the tergite is distinctly widened in *Stenothremma*, whereas in *Orionis* the spiracles of the first tergite are near the middle of the tergite and the posterior half of the tergite is at most slightly widened.

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