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# A New Species of the Ant Subgenus *Orthonotomyrmex* Ashmead, 1906 in the Genus *Camponotus* Mayr, 1861 (Hymenoptera: Formicidae) from Thailand

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## ABSTRACT

*Camponotus siamensis* **sp. nov.** is described from northeastern Thailand, based on minor and major workers. The new species belongs to the subgenus *Orthonotomyrmex* Ashmead, 1906 and is most similar to *Camponotus lasiselene* Wang *et* Wu, 1994 and *Camponotus selene* (Emery, 1889), but it can be recognized by 1) the anterolateral corner of the pronotum in dorsal view is produced and right-angled in the minor worker; 2) erect hairs sparse on the dorsum of the body; 3) the propodeal junction is nearly right-angled, without spines; and 4) the petiole dorsal outline is roundly convex in profile view. The type series was collected from a dead twig hanging on a shrub in a mixed deciduous forest.

**Keywords:** *Camponotus*, distribution, Taxonomy, Thailand.

## INTRODUCTION

*Orthonotomyrmex* Ashmead, 1906 is a small subgenus of the genus *Camponotus* Mayr, 1861 (subfamily Formicinae). The subgenus was originally described by Ashmead, 1905 as *Orthonotus*, with *Formica sericea* as the type species. Unfortunately, this name was preoccupied by a leaf-footed bug genus, *Orthonotus* Westwood (Hemiptera: Coreidae), in Stephens (1829). Ashmead (1906) proposed *Orthonotomyrmex* to replace *Orthonotus*. Members of the subgenus are distributed in Africa, the Arabian Peninsula, Pakistan, Nepal, India, Sri Lanka, South China to Indochina (Collingwood, 1962; Collingwood *et al*., 2011; Umair *et al*., 2012; Khachonpisitsak *et al*., 2020; Antweb, 2022; Bolton, 2022; Subedi *et al*., 2021). Currently, 14 species and 9 subspecies are recognized in the subgenus (Antweb, 2022; Bolton, 2022). Among them, Khachonpisitsak *et al*. (2020) recorded only three species, *Camponotus lasiselene* Wang *et* Wu, 1994; *Camponotus mutilarius* Emery, 1893; and *Camponotus sericeus* (Fabricius, 1798) from Thailand.

Surveys of ants in Mukdahan province, northeastern Thailand under the project "the diversity of ants in Thailand", led to the discovery of a few unidentified *Camponotus* specimens belonging to the subgenus *Orthonotomyrmex*. Having carefully compared them with the type material of closely related species, we concluded that this species is new to science. We here describe and name it *Camponotus siamensis* **sp. nov.** based on the major and minor workers.

## MATERIALS AND METHODS

The type series was collected from northeastern Thailand in Mukdahan Province, Khamcha-i District, Kheang Chang Niam Village. The new species nested in a small dead twig in a mixed deciduous forest. The holotype and paratypes of this new species are pin-mounted dry specimens. The type material of the new species was compared with the high-resolution images of syntypes of the most closely related species, *Camponotus selene* (Emery, 1889), available on Antweb (2022). Most morphological observations were made with a ZEISS Stemi 305 stereoscope. Non-type specimens of *Camponotus lasiselene* Wang *et* Wu, 1994 collected from Thailand were also examined. The type series of the new species is deposited in the Natural History Museum of the National Science Museum, Thailand (THNHM).

Multi-focused montage images were produced using NIS-Elements-D from a series of source images taken by a Nikon Digital Sight-Ri1 camera attached to a Nikon AZ100M stereoscope. The holotype and 10 paratypes were measured for the following parts using a micrometer (accurate to 0.01 mm).

The abbreviations used for the measurements and indices.

**HW** Head width (HW). Maximum width of head in full-face view (including eyes if protruding).

**HL** Head length (HL). Maximum length of head in full-face view, excluding mandibles, measured from anterior clypeal margin to posterior-most point of head vertex.

**SL** Scape length (SL). Maximum length of antennal scape in dorsal view excluding basal neck and condyle.

**EL** Eye length (EL). Maximum diameter of compound eye, measured in lateral view.

**ML** Mesosoma length (MsL). Length of mesosoma measured laterally from anterior margin of pronotum (where the pronotum meets the cervical shield) diagonally to posterior extension of propodeal lobe.

**FeL** Femur length (FmL). Maximum length of metafemur, measured from base to apex.

**PH** Petiolar height. Maximum height of petiole in lateral view (including subpetiolar process).

**PL** Petiole length. Length of petiole measured from anterior margin of peduncle to posteriormost point of tergite in profile.

**CI** Cephalic index. HW / HL × 100.

**SI** Scape index. SL / HW × 100.

**EI** Eye index. EL / HW × 100.

**FeI** Femur index. FmL / HW × 100.

## RESULTS

## TAXOMOMY

Family: Formicidae Latreille, 1809
Subfamily: Formicinae Latreille, 1809
Genus: *Camponotus* Mayr, 1861
Subgenus *Orthonotomyrmex* Ashmead, 1906
*Orthonotomyrmex* Ashmead, 1906: 31. Replacement name for *Orthonotus* Ashmead, 1905: 384. [Junior homonym of *Orthonotus* Westwood, in Stephens, 1829: 344 (Hemiptera).]

***Camponotus siamensis* Jaitrong *et* Jeenthong, sp. nov**. (Figure 1A–F)

**Types. Holotype** (**THNHM-I-24794**, THNHM), minor worker, NE Thailand, Mukdahan Province, Chamcha-I District, Cheang Chang Niam Village, mixed deciduous forest (MDF), 8.VI.2007, W. Jaitrong leg., WJT07-TH-1075. Paratypes. Seven minor workers (**THNHM-I-24795** to **THNHM-I-24801**, THNHM) and 3 major workers (**THNHM-I-24802** to **THNHM-I-24804**, THNHM), same data as holotype; 2 minor workers (**THNHM-I-24805** to **THNHM-I-24806**, THNHM), NE Thailand, Mukdahan Province, Chamcha-I District, Kheang [Cheang] Chang Niam Village, dry evergreen forest (DEF), 4.IX.2007, W. Jaitrong leg.

**Worker Description.**

**Minor worker** (holotype and paratypes, Figure 1A–C). **Measurements.** *Holotype*: HW 1.02; HL 1.06; SL 0.96; EL 0.33; ML 1.32; FeL 1.02; PH 0.33; PL 0.30; CI 97; SI 94; EI 32; FeI 100. *Paratypes* (n = 7): HW 0.99–1.09; HL 1.02–1.16; SL 0.96–0.99; EL 0.30–0.36; ML 1.29–1.42; FeL 0.99–1.06; PH 0.33–0.36; PL 0.30–0.33; CI 94–97; SI 91–97; EI 30–33; FeI 97–100. **Head:** In full-face view almost slightly longer than broad (CI 91–97), with weakly convex lateral margin and very shallowly concave posterior margin. Mandibles subtriangular; masticatory margin with 5 teeth, including large apical tooth. Clypeus slightly shorter than broad; anterior and posterior margins weakly concave. Eye weakly convex and located at 2/3 distance of head (measured from anterior margin of clypeus to posterior margin of head); distance between mandibular insertion and anterior margin of eye 1.67 times (in holotype) as long as maximal diameter of eye; outer margin of eye reaching lateral margin of head. Antennal scape almost as long as head length, when laid backward extending beyond posterior margin of head by its 1/3 length; segment II longer than each of segments III–VI. Frontal lobe narrow, in full-face view not covering antennal socket. Frontal carina narrow, short, and extending little beyond anterior margin of eye. **Mesosoma:** in profile view promesonotum with weakly convex dorsal outline; promesonotal suture present; metanotal groove deep clearly separating mesonotum and propodeum; propodeum relatively short, its dorsal outline almost straight; propodeal junction almost right angled; mesopleuron clearly demarcated from pronotum by deep suture but not clearly separated from metapleuron; metapleuron demarcated from propodeum by indistinct groove; in dorsal view, pronotum subrectangular, shorter than broad, its anterolateral corner produced as triangle; mesonotum round, as long as broad, and narrower than pronotum but broader than propodeum; dorsum of mesosoma laterally marginate along lengths of pronotum and propodeum. **Metasoma:** petiole in profile view, almost as long as heigh, dorsal outline convex. Abdominal segment III (= first gastral segment) as long as each of segments IV and V.

Dorsum of head entirely macropunctate, while ventral face with weaker punctures; mesosoma finely punctate; petiole reticulate with shining interspaces; abdominal segments III–V finely micropunctate. Leg micropunctate but shiny.

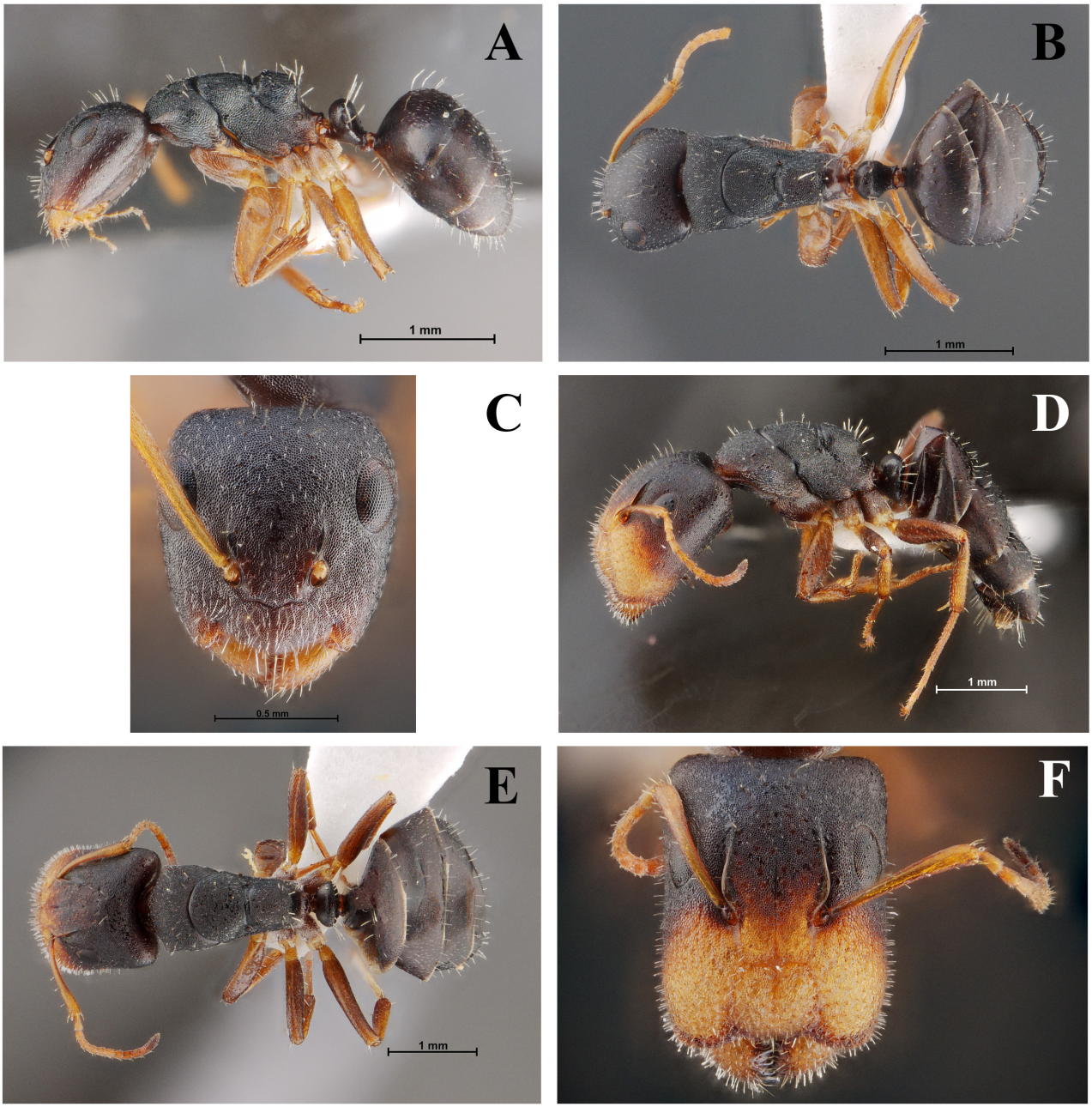


**Figure 1.** *Camponotus siamensis* **sp. nov.** A, D, Body in profile; B, E, dorsal view of body; C, F, head in full-face view; A–C, minor worker, holotype, THNHM-I-24794; D–F, major worker, paratype, THNHM-I-24802.

Pilosity comparatively sparse and short; petiole with 3–4 erect hairs on each lateral side. All erect hairs white.

Entire body black to dark brown, gaster (abdominal segments III–VII) slightly paler. Legs and antennae yellowish brown.

**Major worker** (paratypes, Figure 1D–F).
**Measurements.** *Paratypes* (n = 3): HW 1.35–1.42; HL 1.65–1.78; SL 0.99–1.06; EL 0.43; ML 1.72–1.75; FeL 1.12–1.16; PH 0.50–0.53; PL 0.36; CI 80–82; SI 71–76; EI 30–32; FeI 79–85. **Head:** In full-face view clearly longer than broad (CI 80–82), sub-rectangular with lateral margin feebly concave medially and posterior margin concave; posterolateral corners of head convex. Mandibles subtriangular; masticatory margin with 5 large teeth, including large apical tooth. Clypeus sub-rectangular, slightly longer than broad; lateral and posterior margins of clypeus straight, but anterior margin convex. Eyes elliptical and located just posterior to mid-length of head; distance between mandibular insertion and anterior margin of eye 2.43–2.50 times as long as maximal diameter of eye; in full-face view, outer margin of eye not reaching lateral margin of head. Antennal socket located at mid-length of head. Antennal scape clavate, much shorter than head length, when

laid backward not reaching posterior margin of head; antennal scape 0.73–0.75 times as long as head width. Frontal lobe narrow, flat, in full-face view not covering antennal socket. Frontal carina sharp and reaching level of posterior margin of eye. **Mesosoma:** slightly smaller than head; in profile view promesonotum with weakly convex dorsal outline; promesonotal suture present; metanotal groove deep clearly separating mesonotum and propodeum; propodeum relatively short and its dorsal outline weakly convex; propodeal junction obtusely angulate; mesopleuron clearly demarcated from pronotum by deep suture, and demarcated from pronotum by indistinct suture but not clearly separated from metapleuron; metapleuron demarcated from propodeum by indistinct groove; in dorsal view, pronotum subrectangular, shorter than broad, its anterior margin convex and posterior margin concave; mesonotum almost as long as broad, and narrower than pronotum but slightly broader than propodeum. **Metasoma:** petiole in profile view, sessile, almost as long as high, with convex dorsal outline. Abdominal segment III (= first gastral segment) as long as each of segments IV and V.

Anterior half of head dorsum punctoreticulate, while posterior half finely macropunctate; mesosoma macropunctate but punctation weaker than in minor worker; petiole superficially reticulate, with smooth and shining interspaces; abdominal segments III–V finely micropunctate. Leg micropunctate but shiny.

Pilosity comparatively sparse and short; petiole with 4 erect hairs on each lateral side. All erect hairs white.

Anterior half of head and antenna yellowish brown, remaining body black to dark brown, gaster (abdominal segments III–VII) slightly paler. Legs reddish brown.

**Etymology.** The specific name is an adjective meaning 'of Siam (old name of Thailand)'.

**Distribution.** This species has been known only from the type locality (Mukdahan Province, northeastern Thailand).

**Remarks.** *Camponotus siamensis* **sp. nov.** is similar to *Camponotus lasiselene* Wang et Wu, 1994 (China and Thailand) (Fig. 2) and *Camponotus selene* (Emery, 1889) (China, India, and Myanmar) (Fig. 3). However, in the minor worker *C. siamensis* is clearly distinguished from *C. selene* by the following characteristics (see figures 2 and 3 for comparison): 1) head rectangular, posterior margin weakly concave in *C. siamensis* (round, posterior margin roundly convex in *C. selene*); 2) propodeum without spines, propodeal junction right angled in *C. siamensis* (with blunt spines in *C. selene*); 3) dorsal outline of petiole roundly convex in *C. siamensis* (dorsal outline angulate in *C. selene*); 4) abdominal segments III–VI micorpunctate in *C. siamensis* (smooth and shiny in *C. selene*). Minor worker of *C. siamensis* can be easily separated from minor worker that of C. lasiselene by 1) posterior margin of head concave medially in *C. siamensis* (convex in *C. lasiselene*); 2) dorsal outline of petiole roundly convex (dorsal outline angulate in *C. lasiselene*); 3) propodeum without spines in *C. siamensis* (with spines in *C. lasiselene*); 4) dorsum of mesosoma with less than 30 erect hairs in *C. siamensis* (over 60 erect hairs in *C. lasiselene*, see figures 1A and 2A for comparison). Comparing with major worker, *C. siamensis* is easily separated from *C. lasiselene* by 1) head longer than broad in *C. siamensis* (almost as long as broad in *C. lasiselene*); 2) propodeum without spines in *C. siamensis* (with short spines in *C. lasiselene*); and 3) pilosity sparse (dense but short in *C. lasiselene*); petiole superficially reticulate, with smooth and shining interspaces in *C. siamensis* (finely punctate in *C. lasiselene*).

**Comparative specimens**

***Camponotus lasiselene* Wang *et* Wu, 1994**. (Fig. 2) THAILAND. NORTHERN: 1 minor worker (**THNHM-I-24807**, THNHM), Chiang Mai Province, Mueang District, 1400–1500 m a.s.l., 16.VIII.2004, S. Sonthichai leg.; 1 minor worker (**THNHM-I-24808**, THNHM), same locality and collector, 8-12.XI.2004; 1 worker (**THNHM-I-24931**, THNHM), Chiang Mai Province, Mueang District, Doi Suthep-Pui N.P., 18.VII.2018, W. Jaitrong leg.; 1 minor worker (**THNHM-I-24809**, THNHM), Nan Province, Puar District, hill evergreen forest, 29.V.2004, W. Jaitrong leg. WESTERN: 1 major worker (**THNHM-I-24932**, THNHM) and 5 minor worker (**THNHM-I-24933**, THNHM), Tak Province, Umphang District, Thung Yai Naresuan East W.S., Huai Nam Khiao Station, 23.VI.2015, W. Jaitrong leg., TH15-WJT-911; 1 minor worker (**THNHM-I-24934**, THNHM), same wildlife sanctuary, date and collector, General Coll.; 1 minor worker (**THNHM-I-24935**, THNHM), same wildlife sanctuary and collector, 27.IX.2016; 3 minor workers (**THNHM-I-24936**, THNHM), same wildlife sanctuary and collector, Thung Nanoi Station, 21.III.2016, TH16-WJT-191; 1 minor worker (**THNHM-I-24937**, THNHM), same wildlife sanctuary and collector, Head Quarter, 25.VI.2015; 8 minor workers (**THNHM-I-24938**, THNHM), 6 males (**THNHM-I-24939**, THNHM), 6 alate queen (**THNHM-I-24940**, THNHM), and 2 major workers (**THNHM-I-24941**, THNHM), Tak Province, Umphang District, Umphang W.S.,

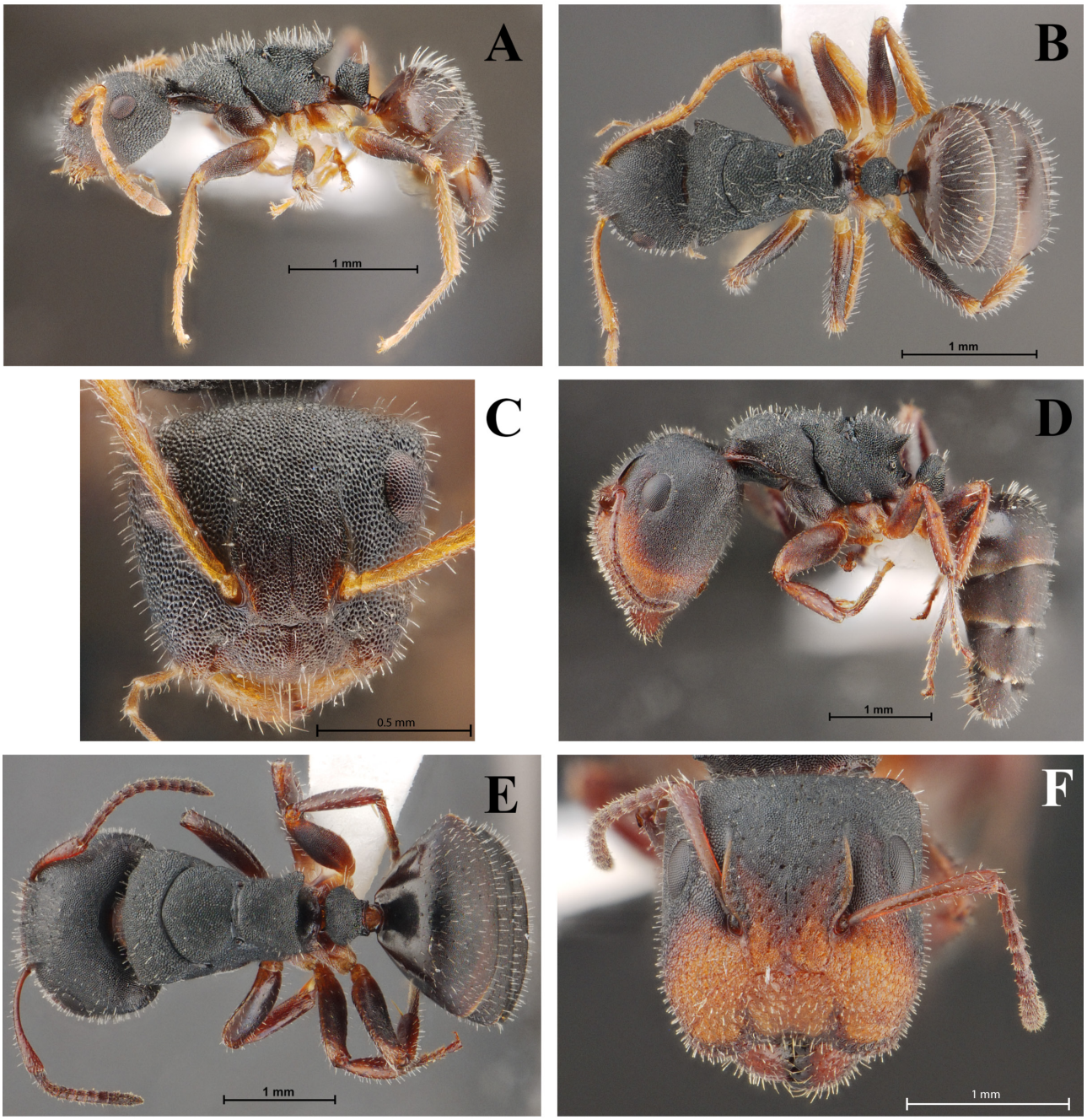


**Figure 2.** *Camponotus lasiselene*. A, D, Body in profile; B, E, dorsal view of body; C, F, head in full-face view; A–C, minor worker, non-type from Thailand, THNHM-I-24820; D–F, major worker, non-type from Thailand, THNHM-I-24822.

25.V.2015, W. Jaitrong leg., TH15-WJT-603; 4 major workers (**THNHM-I-24942**, THNHM), 2 males (**THNHM-I-24943**, THNHM), 12 minor workers (**THNHM-I-24944**, THNHM), same wildlife sanctuary and collector, Mae Klong Ki Station, 26.III.2016, TH16-WJT-268; 1 major worker (**THNHM-I-24945**, THNHM) and 1 minor worker (**THNHM-I-24946**, THNHM), Tak Province, Mae Sod District, near Doi Musur Market, live bamboo stem, 31.I.2015, Sk. Yamane leg., TH15-SKY-131. NORTHEASTERN: 2 minor workers (**THNHM-I-24810** to **THNHM-I-24811**, THNHM), from NE Thailand, Loei Province, Phu Ruar District, hill evergreen forest, 10.V.2007, S. Hasin leg.; 3 minor workers (**THNHM-I-24812** to **THNHM-I-24814**, THNHM), from same locality, mixed deciduous forest, 9.IV.2008, W. Jaitrong leg.; 1 minor worker (**THNHM-I-24815**, THNHM), from E Thailand, Chachoengsao Province, Tha Takeab District, 28.X.2002, W. Jaitrong leg.; 6 minor workers (**THNHM-I-24816** to **THNHM-I-24820**, THNHM) and 2 major workers (**THNHM-I-24821** to **THNHM-I-24822**, THNHM), from E Thailand, Chanthaburi Province, Pong Nam

Ron District, 13.V.2008, W. Jaitrong leg., WJT08-E027.

***Camponotus selene* (Emery, 1889)** (Fig. 3). We did not examine specimens of this species. However, the images of a syntype from Myanmar, Tenasserim was examined.

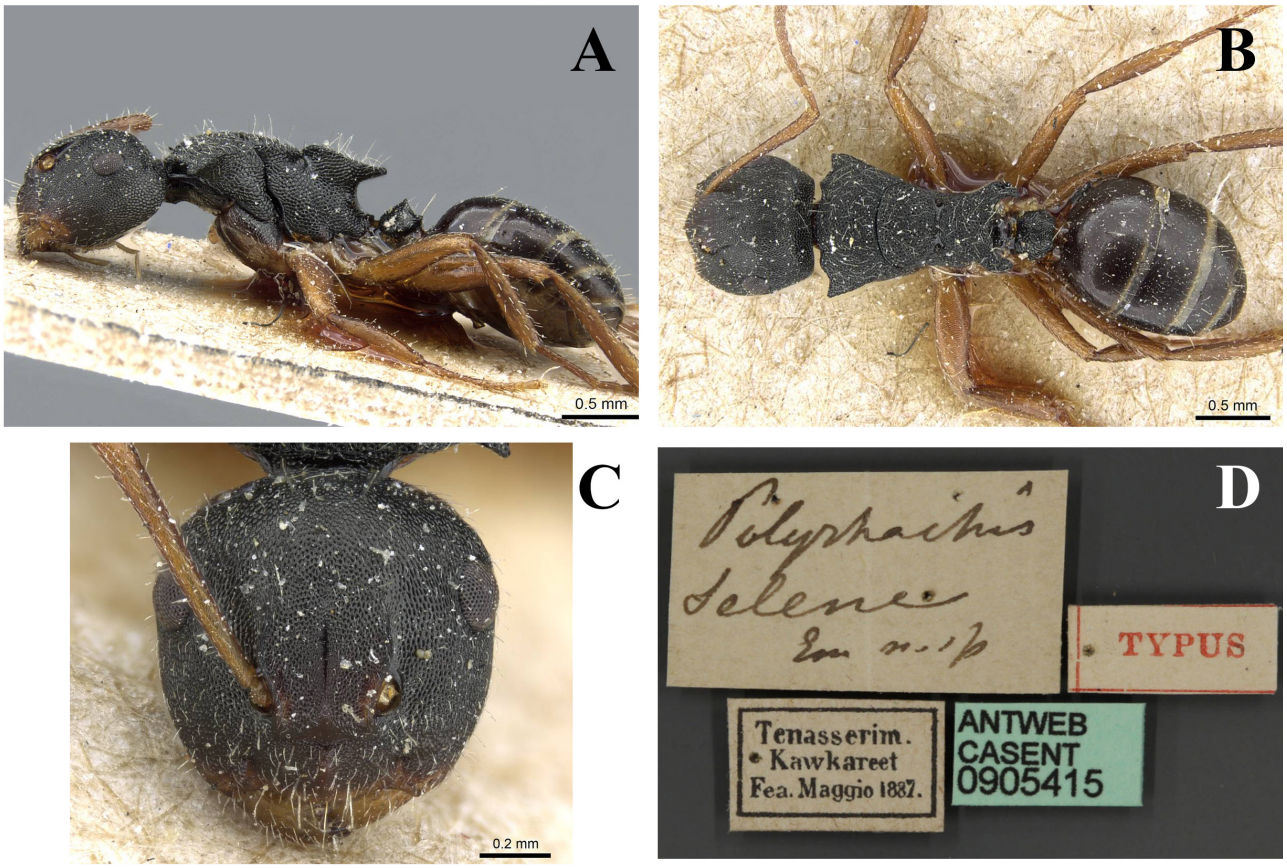


**Figure 3.** *Camponotus selene*, syntype (ANTWEB CASENT 0905415) downloaded from https://www.antweb.org/specimenImages.do?name=casent0905415&project=allantwebants on 24 June 2021. A. Body in profile; B. dorsal view of body; C. head in full-face view; D. label of the syntype specimen.

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