

# Two new species of the ant genus *Myrmecina* Curtis, 1829 (Hymenoptera, Formicidae, Myrmicinae) from mountainous areas in Thailand

NOPPAWIT CHAYAKUL<sup>1</sup>, WATTANACHAI TASEN<sup>\*,2</sup> AND WEEYAWAT JAITRONG<sup>\*,3</sup>

<sup>1</sup>Prasarnmit Demonstration School (Secondary), 176, Soi Sukhumwit 23, Khlong Toei Nuea, Wattana, Bangkok 10110, Thailand; myrmicinae2468@gmail.com

<sup>2</sup>Department of Forest Biology, Faculty of Forestry, Kasetsart University, Bangkok 10900, Thailand

<sup>3</sup>Office of Natural Science research, National Science Museum, 39, Moo 3, Khlong 5, Khlong Luang, Pathum Thani 12120, Thailand

\*Corresponding author: weeyawat@nsm.or.th; fforwct@ku.ac.th

#These authors contributed equally to this work.

**ABSTRACT.** Currently, 116 valid species, and one valid subspecies of the genus *Myrmecina* Curtis, 1829 are known from Neotropical, Nearctic, Oceania, Palearctic, Indomalayan, and Australasia realms. Herein *Myrmecina lugsawuti* **sp. nov.** and *Myrmecina siamensis* **sp. nov.** are described from Thailand, based on the workers and dealate queen. Both new species inhabit highland areas (>1,300 m a.s.l.) and nest in decaying twigs in leaf litter. A taxonomic key to the known Thai species of this genus is provided.

**Keywords** distribution, identification key, new species, Southeast Asia, taxonomy

**Zoobank** <https://zoobank.org/References/FC2A6E6C-07A4-4A3E-8770-87F2E118F451>

**Citation** Noppawit Chayakul, Wattanachai Tasen & Weeyawat Jaitrong (2026). Two new species of the ant genus *Myrmecina* Curtis, 1829 (Hymenoptera, Formicidae, Myrmicinae) from mountainous areas in Thailand. *Asian Myrmecology* 19: e019005

**Copyright** This article is distributed under a Creative Commons Attribution License CCBY4.0

**Communicating Editor** Shingo Hosoishi

## INTRODUCTION

The ant genus *Myrmecina* Curtis, 1829 is placed in the tribe Crematogastrini Forel, 1893 within the subfamily Myrmicinae (Ward et al. 2015; Blaimer et al. 2018; AntWiki 2025; AntWeb 2025; Gu et al. 2025). *Myrmecina latreillii* Curtis, 1829, a junior synonym of *Myrmecina graminicola* (Latreille, 1802), served as the type species for the genus (Shattuck 2009; Jaitrong et al. 2019; Okido et al. 2020; AntWeb 2025). Most *Myrmecina* species nest in twigs or decaying wood (Wong & Guénard 2016; Jaitrong et al. 2019; Okido et

al. 2020), leaf litter (Satria & Yamanae 2019), or in the soil (Ogata & Terayama 1992; Sheela et al. 2020), either with or without a covering, and between rocks (Shattuck 2009). Some species in this genus possess an ergatoid queen, defined as a permanently wingless queen (Ito 1996; Jaitrong et al. 2019; Satria & Yamanae 2019; Okido et al. 2020). At least two species, *M. cooperi* Deyrup, 2015 and *M. davisoni* MacGown, 2023 appear to be parasitic species (MacGown, 2023). Recently, this genus comprised 116 valid species and one valid subspecies (Bolton 2025). The highest species richness for this genus occurs in Southeast

Asia (Okido et al. 2020; Bolton 2025; Gu et al. 2025), with 57 species represented. Among Southeast Asian species, 32 have been recorded from Indonesia, six from Vietnam, four from the Philippines, and three from Singapore (AntWeb 2025; Wang et al. 2022). Recently, Gu et al. (2025) reported 28 species from China. In Thailand, six native species have been listed (Jaitrong et al. 2019; Okido et al. 2020; Bolton 2025).

Recently, we have examined *Myrmecina* specimens deposited in the ant collection of the Natural History Museum, Natural Science Museum Thailand. We found two undescribed species inhabiting mountainous areas of Thailand. Following careful examination of the specimens using a stereomicroscope and a comparison with images of the type materials of closely related species, we concluded that these species were new to science. In the present paper we describe these two species based on the workers. The dealate queen of *Myrmecina lugsawuti* **sp. nov.** is also described. A key to the known Thai species based on worker caste is provided.

## MATERIALS AND METHODS

This study is mainly based on specimens deposited at the Natural History Museum of the National Science Museum Thailand (THNHM). The two new species: *Myrmecina lugsawuti* **sp. nov.** and *Myrmecina siamensis* **sp. nov.**, were collected from mountainous areas in Thailand. The type series of both new species were compared against the holotype and paratype images of the closely related species: *M. asthena* Okido, Ogata & Hosoishi, 2020, *M. insulana* Okido, Ogata & Hosoishi, 2020, *M. inthanonensis* Okido, Ogata & Hosoishi, 2020, *M. lombokensis* Okido, Ogata & Hosoishi, 2020, and *M. monticola* Okido, Ogata & Hosoishi, 2020 presented in Okido et al. (2020) and *M. bawai* Aswaj, Anoop & Priyadarsanan, 2021 presented in Aswaj et al. (2021). Most morphological observations were made with a ZEISS Stemi 305 stereomicroscope. Multi-focused montage images were produced using NIS element 3.7 from a series of source images taken by a Nikon MNB42100 digital camera attached to a Nikon ECLIPSE E600 microscope. The holotypes and paratypes of the new species were measured with an ocular micrometer attached to a Carton MS4582 DSZ-

44F stereomicroscope. All measurements are given in millimeters to hundredths place.

The abbreviations used for the measurements and indices are as follows (modified from Wong & Guénard (2016), Jaitrong et al. (2019) and Sheela et al. (2020):

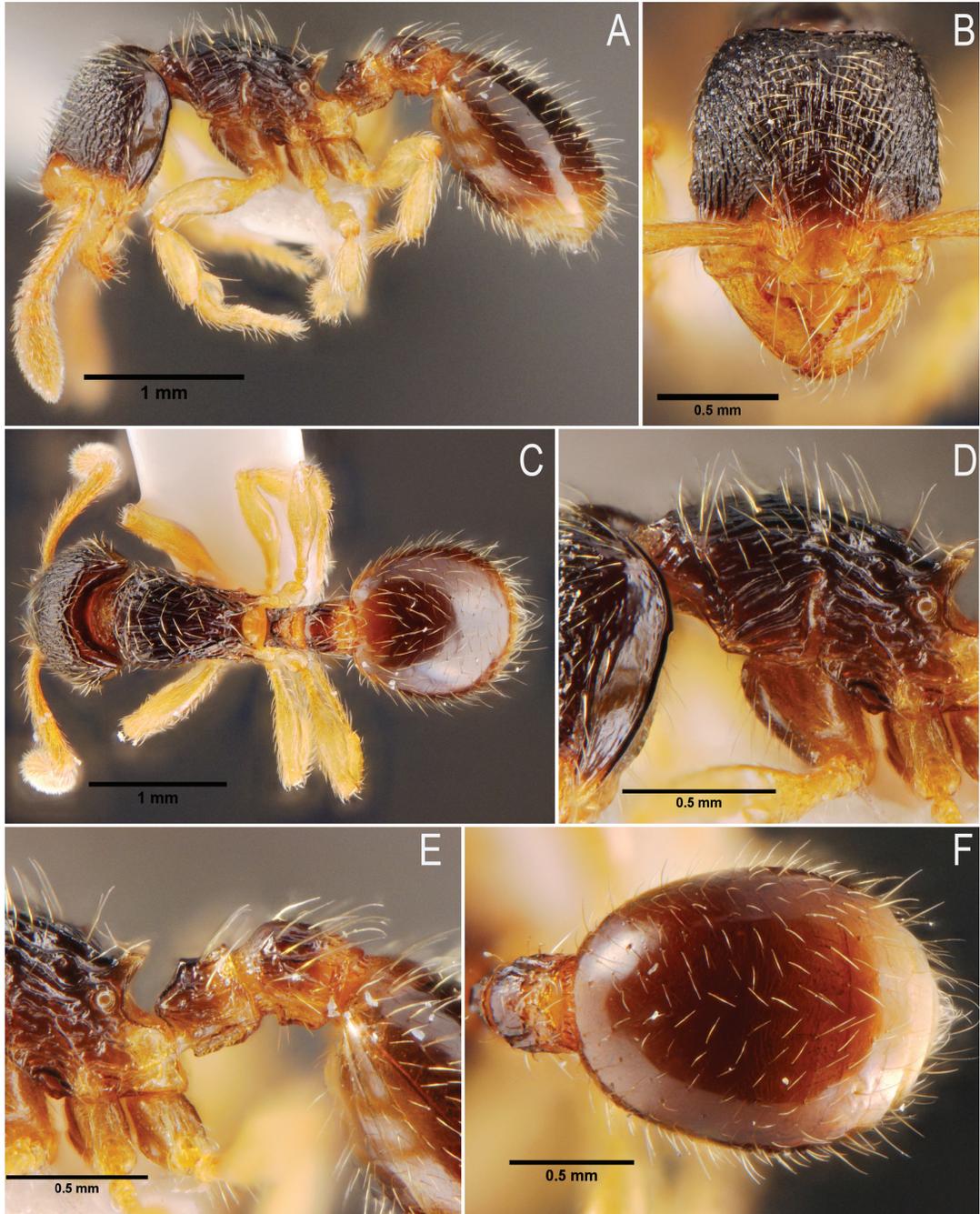
- HL** Head length, Maximum measured distance from anteriormost point of clypeal margin to posterior margin of head in full face view.
- HW** Head width, distance between the ventrolateral margins of head excluding the eyes in full-face view.
- MDL** Mandible length, the length of anterolateral margins of mandibular insertion to apex of mandible in full-face view.
- ED** Eye diameter, maximum eye diameter in profile.
- SL** Scape Length, length of scape excluding the base of radicle in full-face view.
- ML** Mesosoma length, measured from point where pronotum meets basal angle to posteriormost point of propodeal lobe in profile.
- PNW** Pronotum width, measured maximum width of pronotum in dorsal view.
- PSL** Propodeal spine length, measured from tip of propodeal spine to margin near propodeal spiracle in profile.
- PTH** Petiole height, measured from ventral-most point of petiolar process to apex of petiole in profile.
- PTL** Petiole length, maximum length of petiole in profile.
- PPH** Postpetiole height, measured from ventral-most margin of sternal process to dorsal margin of postpetiole, in straight line, in profile view.
- PPL** Postpetiole length, maximum length of postpetiole in profile.
- CI** Cephalic index, (HW x 100)/HL
- SI** Scape index, (SL x 100)/HW
- OI** Ocular index, (ED x 100)/HW

## TAXONOMIC RESULTS

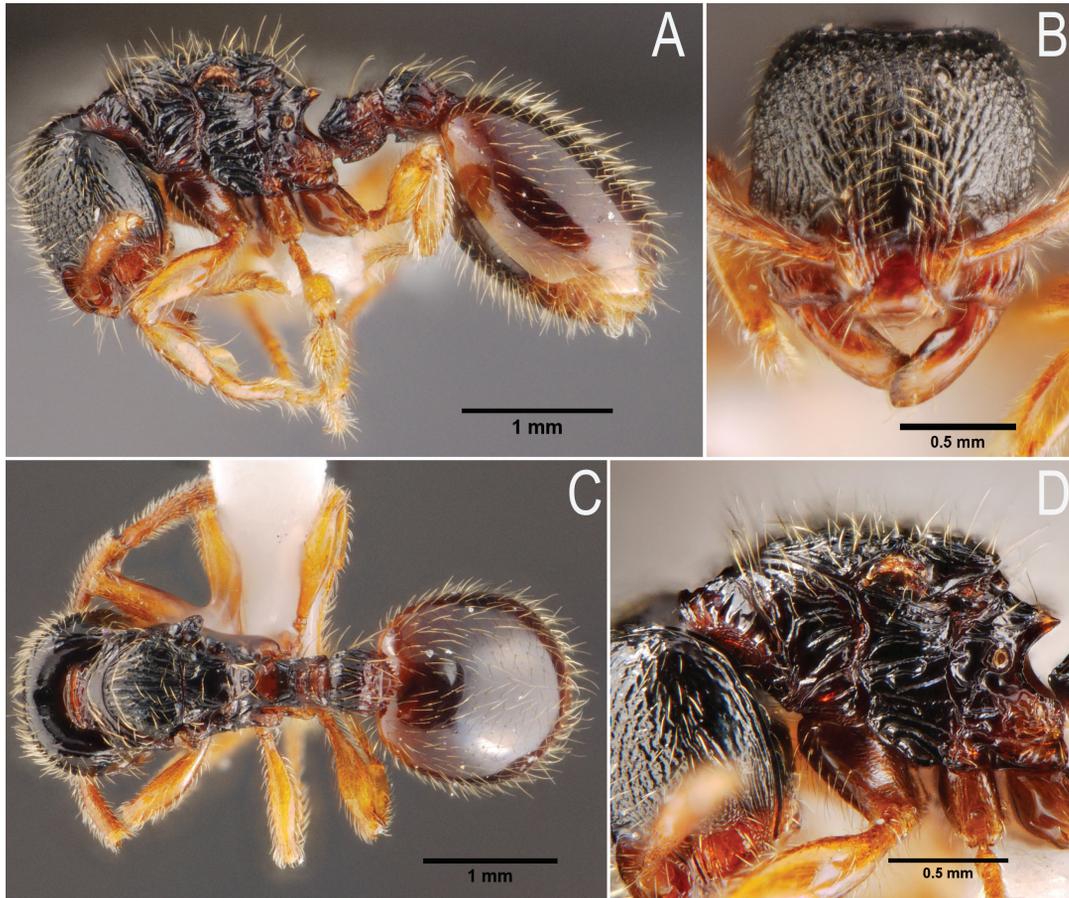
### *Myrmecina lugsawuti* Chayakul, Tasen & Jaitrong, **sp. nov.**

<https://zoobank.org/NomenclaturalActs/cf2bad1a-7d23-49b8-8768-345ba69c6874>

Figs. 1, 2, 4A



**Fig. 1.** *Myrmecina lugsawuti* sp. nov. (holotype worker, THNHM-I-00030517). (A) Body in profile (B) head in full-face view (C) body in dorsal view (D) mesosoma in profile (E) propodeal spine, petiole and postpetiole in profile (F) first gastral tergite in dorsal view. Photos by Yudthana Samung.



**Fig. 2.** *Myrmecina lugsawuti* sp. nov. (paratype dealate queen, THNHM-I-00030516). (A) Body in profile (B) head in full-face view (C) body in dorsal view (D) mesosoma in profile. Photos by Yudthana Samung.

**Etymology.** The specific name is dedicated to Mr. Pisut Lugsawut (Forestry Technical Officer, Thailand), who supported Weeyawat Jaitrong during his field survey in northern Thailand.

**Types.** Holotype: worker (THNHM-I-00030517, THNHM), N Thailand, Chiang Mai Province, Omkoi District, Mae Tuen Subdistrict, Mt. Mon Chong, 18.XI.2016, W. Jaitrong leg., WJT181116-12. Paratypes: 7 workers (THNHM-I-00030509 to THNHM-I-00030515, THNHM) and 1 dealate queen (THNHM-I-00030516, THNHM), same data as the holotype.

**Measurements and indices. Holotype worker:** HL 0.67; HW 0.63; MDL 0.35; ED 0.04; SL 0.53; ML 0.63; PNW 0.42; PSL 0.14; PTH 0.18; PTL 0.18; PPH 0.18; PPL 0.21; CI 95; SI 61.12; OI 6. **Paratype workers (n = 5):** HL 0.67; HW 0.63–

0.67; MDL 0.25–0.32; ED 0.04; SL 0.49–0.56; ML 0.63–0.70; PNW 0.39–0.46; PSL 0.11–0.14; PTH 0.18; PTL 0.18; PPH 0.18; PPL 0.21–0.25; CI 95–100; SI 61–74; OI 6. **Paratype dealate queen:** HL 0.80; HW 0.70; MDL 0.39; ED 0.07; SL 0.60; ML 0.98; PNW 0.56; PSL 0.14; PTH 0.25; PTL 0.21; PPH 0.25; PPL 0.25; CI 91.; SI 85; OI 10.

**Description of workers (Fig. 1).** Head in full-face view, subrectangular, slightly longer than broad or almost as long as broad (in some paratypes); posterior margin feebly concave; posterolateral corners roundly convex; malar spaces 1.18 times as long as diameter of eyes; distance between posterolateral corners of head and eyes about five times as long as diameter of eyes; frontal carinae indistinct, obscured by rugae of head; frontal lobe distinctly present, slightly laterally concave. Clypeus concave in dorsal surface (Fig.

1B); clypeus in full face view without median process, anterior anterolateral corners of clypeus short and blunt. Mandibles in profile long, strongly curved downward at distal portion, mandibles in full-face view subtriangular, broad; masticatory margin bent; large-sized apical tooth with narrow base, fused with preapical tooth; four small blunt teeth usually present at masticatory margin, small-sized 3<sup>rd</sup> tooth and 4<sup>th</sup> tooth distinct from preapical tooth; blunt basal tooth with wide base. Antennae 12-segmented with 3-segmented club; long scape, reaching posterolateral corners of head; segmented II slightly longer and broader than III; segments IV–IX subequal in size; scapes almost as long as II–XI combined. Eyes small, each with 14–15 ommatidia; in full-face view weakly convex, located about mid-length between mandibular base and mid-length of head.

Mesosoma box-like in profile, weakly convex dorsal outline and almost flat lateral faces. Pronotum without denticles on its dorsum; anterolateral portion of pronotum forming blunt corners (Fig. 1D); mesonotum completely fused with pronotum; mesopleuron not differentiated from metapleuron; metanotal groove indistinct; propodeum in profile with impressed area around metanotal spiracles; eumetanotal spines very minute (Fig. 1D–E); Propodeal spines in profile subtriangular, almost as long as width at base; in profile, propodeal spines pointed posterodorsally not extend vertical posteriormost of propodeum (Fig. 1E). Petiole short, in dorsal view slightly broader than long, rectangular; in profile view, as long as high, its anterior slope almost straight, and dorsal face feebly concave; subpetiolar process developed, its ventral outline weakly convex, with blunt anteroventral corner. Postpetiole in dorsal view broader than petiole and almost as long as broad; in profile view globular, with weakly convex dorsal outline; sternopostpetiolar process low, with blunt anteroventral corner. Gaster in dorsal view oval, its anterior margin feebly concave; first gastral tergite weakly convex.

Dorsum of head with irregular longitudinal rugae (Fig. 1B); ventrolateral portions (gena + temple) faintly wrinkled but shiny (Fig. 1D). Clypeus and mandibles smooth and shiny. Scapes smooth and shining; antennal segments II–XII punctate. Mesosomal dorsum with fine longitudinal rugae; in profile, lateral faces of

pronotum and mesopleuron with irregular rugae, while lateral face of propodeum wrinkle; rugae in front of impressed area around metanotal spiracle colliculate. Petiole and postpetiole faintly punctate with a few irregular short rugae. First gastral tergite smooth and shiny with short striations along anterior margin. Legs smooth and shiny.

Body dorsum with dense gray erect hairs; ventrolateral portions of head without hairs; antennae and legs with dense suberect hairs; anterior clypeal margin with long projected hairs; mandibles with suberect hairs.

Anterior one-fourth of head yellowish orange, while posterior three-fourth black to dark reddish brown; mesosoma dark reddish brown; anterior two-third of petiole reddish brown, while posterior one-third yellowish orange; postpetiole similar color pattern as in petiole; first gastral tergite entirely reddish brown but anteriormost portion brownish orange; tip of gaster yellow. Antennae, clypeus, and mandibles yellowish orange; coxae brown, other segments of legs yellow.

**Description of dealate queen (Fig. 2).** Similar to worker caste in structures (head, petiole, postpetiole, and gaster), coloration, and pilosity, with the following notable morphological differences characteristic of the queen caste. Head in full-face view square. Masticatory margin of mandible straight, lacking teeth. Eyes relatively large and round, convex in full-face view, located at approximately one-third of head length. Three ocelli present (Fig. 2B), median ocellus located medially posterior two-fifths of head length in full-face view; distance between lateral ocelli slightly longer than distance between median ocellus and lateral ocelli.

Mesosoma in profile with strongly convex dorsal outline and slightly flattened lateral faces. Pronotum without denticles on its dorsum, anterior portion steep anteriorly. Mesoscutum in dorsal view large, distinctly broader than long, roundly convex anteriorly and laterally, while its posterior margin almost straight; notaular line completely absent; parapsidal line indistinct, present along rugae; in profile mesoscutum weakly convex dorsal outline. Mesoscutellum in dorsal view relatively small compared with mesoscutum, distinctly broader than long; mesoscutellum in profile weakly

convex dorsal outline. Mesopleuron in profile large, anepisternum clearly demarcated from katepisternum by mesopleural sulcus; metanotum short, located lower than mesoscutellum, and clearly demarcated from mesoscutellum and propodeum by distinct sutures. Propodeum in profile short and sloping down to propodeal spines. Forecoxae reticulate, with smooth and shining interspaces.

**Comparative notes:** *Myrmecina lugsawuti* sp. nov. is most similar to *M. inthanonensis* sharing several traits with the latter and other congeners, including dorsal surface of the head with irregular longitudinal rugae; eyes small; anterior anterolateral corners of clypeus blunt, pronotal denticles absent; eumetanotal spines indistinct, petiole cylindrical and postpetiole globular in profile. However, *M. lugsawuti* sp. nov. is distinguished from *M. inthanonensis* by the following characteristics: ventrolateral portion of head with wrinkled sculpture (5–6 rugae in *M. inthanonensis*); propodeal spines broadly triangular and pointed posteriorly (narrow with sharp apices and pointed upward in *M. inthanonensis*); area around metanotal spiracle impressed (straight in *M. inthanonensis*, see Figs. 4A and B for comparison).

*Myrmecina lugsawuti* sp. nov. can be separated from *M. monticola* by the following characteristics: mesosomal dorsal outline in profile slightly convex (strongly convex in *M. monticola*); posterior margin of head in full-face view slightly concave (straight in *M. monticola*); eumetanotal spines ill-defined and blunt and pointed posteriorly (sharp and pointed upward in *M. monticola*); subpetiolar process convex in profile (almost straight in *M. monticola*).

*Myrmecina lugsawuti* sp. nov. differs from *M. insulana* by the following characteristics: lateral margin head in full-face view convex (almost parallel sides in *M. insulana*); ventrolateral portions of head faintly wrinkled (several transverse rugae in *M. insulana*); mesosomal dorsum with longitudinal rugae (waved rugae in *M. insulana*); blunt anterolateral pronotal corner (sharp in *M. insulana*); propodeal spines in profile broadly triangular (narrow with sharp spines in *M. insulana*).

For comparisons with *M. siamensis* sp. nov. see in the “Comparative notes” section under that species.

**Habitat.** This species inhabits mountainous area of northern Thailand, nesting in decaying twig within the leaf litter.

**Distribution.** Northern Thailand (Chiang Mai Province).

***Myrmecina siamensis* Chayakul, Tasen & Jaitrong, sp. nov.**

<https://zoobank.org/NomenclaturalActs/72dcd48f-6adf-43a7-9a70-6212311d6263>

Fig. 3

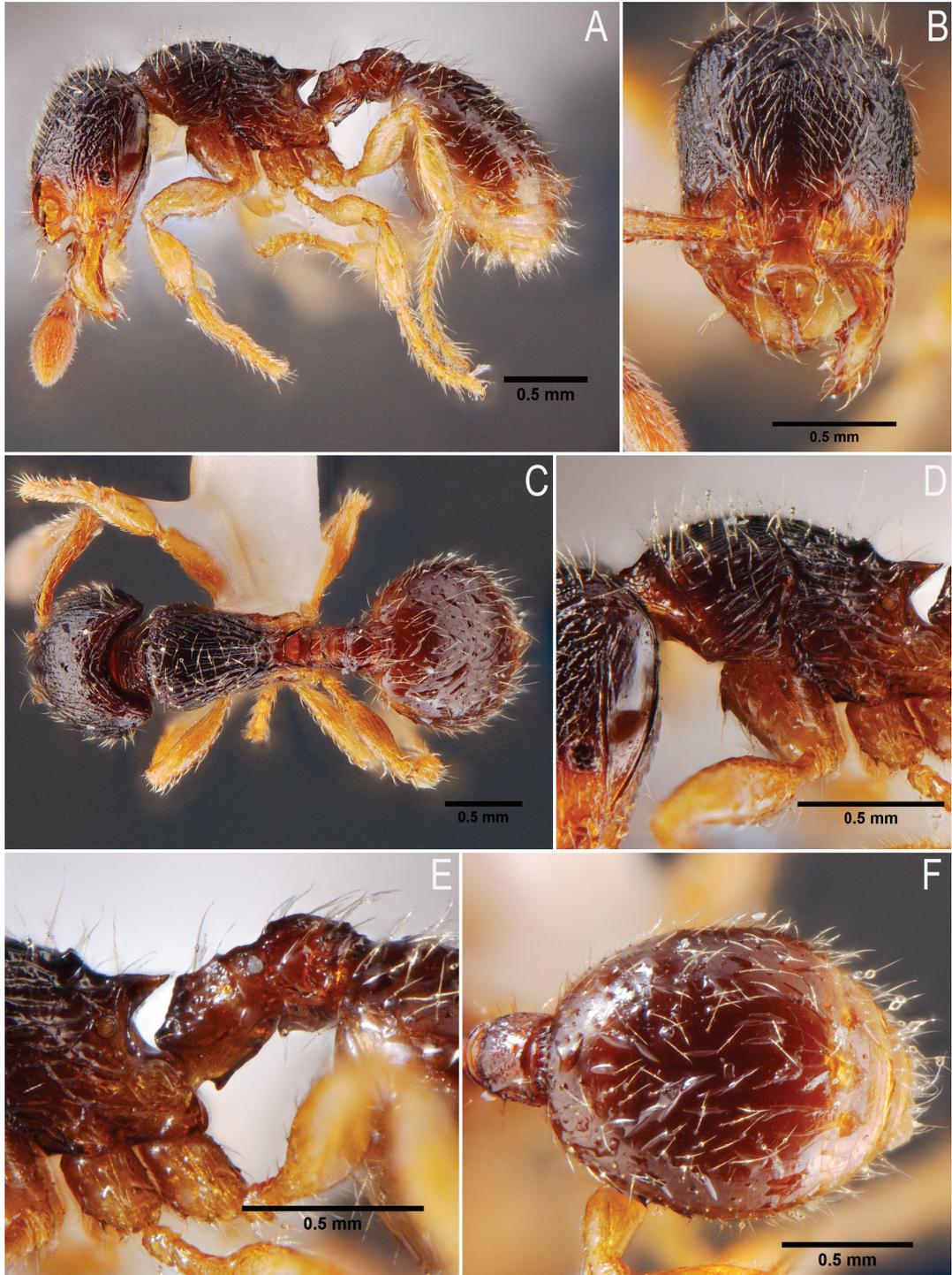
**Etymology.** The specific name is an adjective meaning ‘of Siam’ (historical name of Thailand).

**Types.** Holotype: worker (THNHM-I-00030503, THNHM), E Thailand, Chanthaburi Province, Pong Nam Ron District, Tabsai Subdistrict, Ban Khao Soi Dao Tai, 1,500–1,600 m above sea level, 22.I.2008, W. Jaitrong leg., WJT08-TH-143. Paratypes: 5 workers (THNHM-I-00030504 to THNHM-I-00030508), same data as the holotype.

**Measurements and indices. Holotype worker:** HL 0.56; HW 0.56; MDL 0.25; ED 0.07; SL 0.40; ML 0.63; PNW 0.46; PSL 0.14; PTH 0.18; PTL 0.21; PPH 0.18; PPL 0.21; CI 100; SI 69; OI 13. **Paratypes** (n = 4): HL 0.56–0.63; HW 0.56–0.60; MDL 0.18–0.25; ED 0.04–0.07; SL 0.35–0.42; ML 0.56–0.67; PNW 0.39–0.46; PSL 0.11–0.18; PTH 0.14–0.18; PTL 0.18–0.21; PPH 0.18; PPL 0.18–0.21; CI 94–100; SI 63–69; OI 6–13.

**Other material examined:** 1 worker, Thailand, Chanthaburi Province, Khao Soi Dao, Teak Plantation, 26.XI.2006 (THNHM), W. Saksoowong leg.

**Description of workers.** Head in full-face view, subquadrate (slightly longer than broad in some paratypes); posterior margin of head feebly concave; posterolateral corners of head rounded, not posteriorly projected; malar space 1.73 times as long as diameter of eye in profile; distance between posterior margin of head and eye 4.55 times as



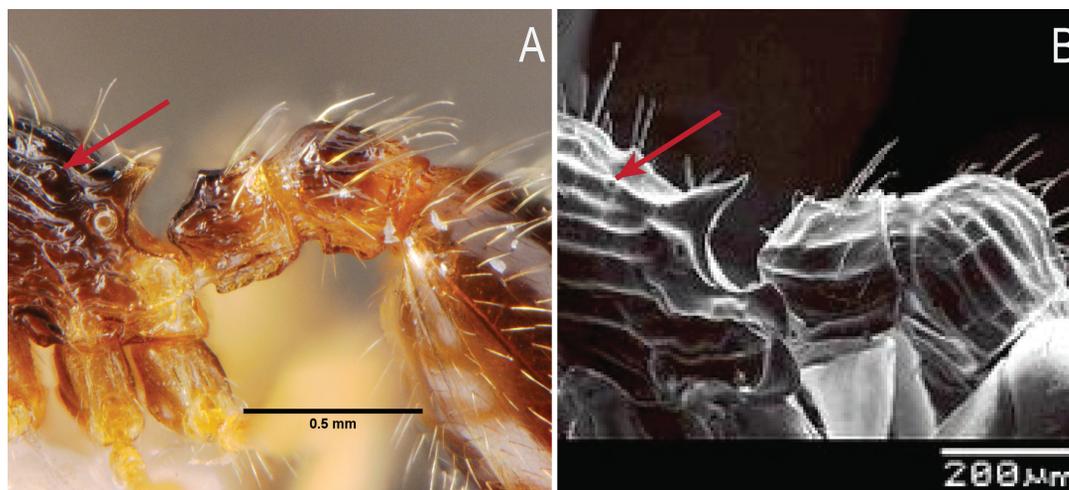
**Fig. 3.** *Myrmecina siamensis* sp. nov. (Holotype worker, THNHM-I-00030503). (A) Body in profile (B) head in full-face view (C) body in dorsal view (D) mesosoma in profile (E) propodeal spine, petiole and postpetiole in profile (F) first gastral tergite in dorsal view. Photos by Yudthana Samung.

long as diameter of eye; frontal carinae invisible; frontal lobes broad, their lateral margins broadly convex, and partly covering antennal sockets. Clypeus in dorsal view trapezoidal, longer than broad, with median tooth, its median portion flat; anterior anterolateral corners of clypeus produced into long teeth (Fig. 3B). Mandibles subtriangular, broad and strongly curved downward in profile; masticatory margin with sharp apical tooth, followed by medium preapical tooth, five smaller teeth, bent, and broad basal tooth; basal margins of mandibles with a broad denticle close to basal tooth. Antennae 12-segmented, with 3-segmented club; scapes reaching posterolateral corners of head; antennal segment II the shortest; segment III longer than each of segments IV–IX and almost as long as segment X; segments II–IX each distinctly shorter than broad; scapes almost as long as II–XII combined. Eyes extremely small, round, each with 13–14 ommatidia; in full-face view eyes flat, located laterally, close to mandibular bases.

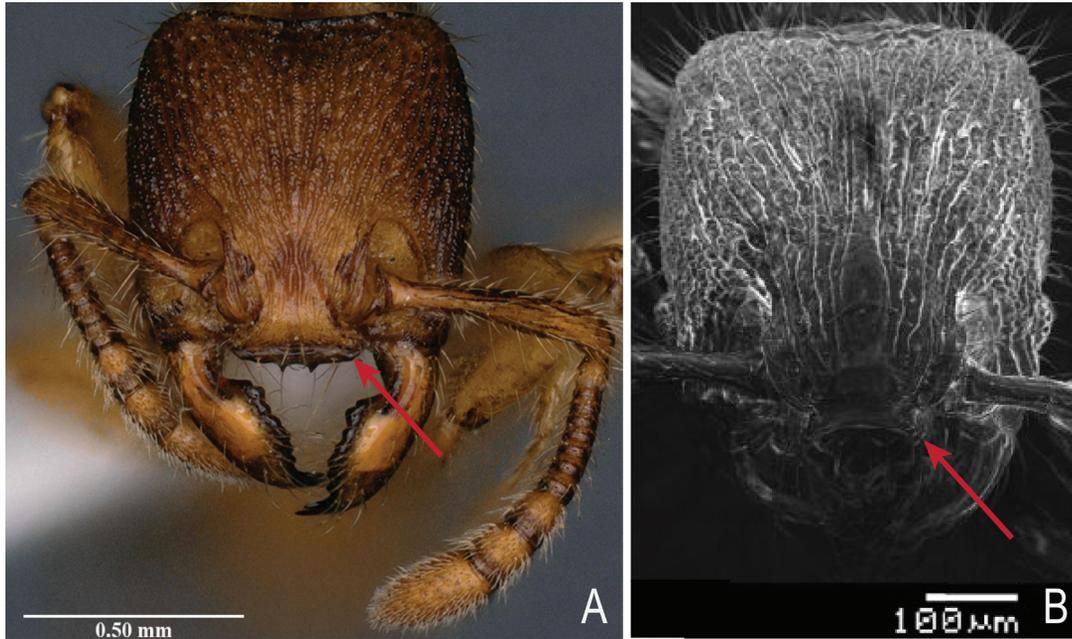
Mesosoma in profile with weakly convex dorsal outline. Pronotum lacks denticles on its dorsum, anterolateral portion forming blunt corners. Mesopleuron in dorsal view fused with pronotum; mesopleuron not demarcated from mesonotum and metapleuron. Propodeum in dorsal view not differentiated from mesonotum; metanotal groove

invisible; eumetanotal spines in profile, triangular, shorter than broad at its base; propodeal spines in profile, subtriangular, longer than broad at its base, propodeal spine in profile pointed posteriorly, just reaching vertical posteriormost of propodeum. Petiole in dorsal view shorter than high; petiolar node elevated posteriorly, its anterior face almost straight and distinctly longer than posterior face. Subpetiolar process well-developed, its ventral outline almost straight, with sharp anteroventral corners. Postpetiole in dorsal view broader than petiole, subsquare, almost parallel sides; in profile, postpetiole globular, distinctly shorter than high; sternopostpetiolar process well-developed, with sharp anteroventral corner. Gaster in dorsal view oval, its anterior margins of tergite feebly concave.

Dorsum of head colliculated (Fig. 3B); ventrolateral portions smooth; clypeus and mandibles smooth and shiny; antennal segments punctate. Mesosomal dorsum punctured with longitudinal rugae; lateral faces of mesosoma with irregular rugae. Propodeum in profile with less irregular longitudinal rugae compared with mesopleuron. Dorsa of petiole and postpetiole wrinkle, while lateral faces rather smooth and shiny. First gastral tergite smooth and shiny with short striation along anterior margin. Legs smooth and shiny.



**Fig. 4.** Characters used in comparative notes, showing propodeal spine, petiole and postpetiole in profile. (A) *Myrmecina lugsawuti* sp. nov. (holotype worker (THNHM-I-00030517), photo by Yudthana Samung (B) *Myrmecina intanonensis* (modified from Okido et al. 2020). Red arrow indicating area around metanotal spiracle.



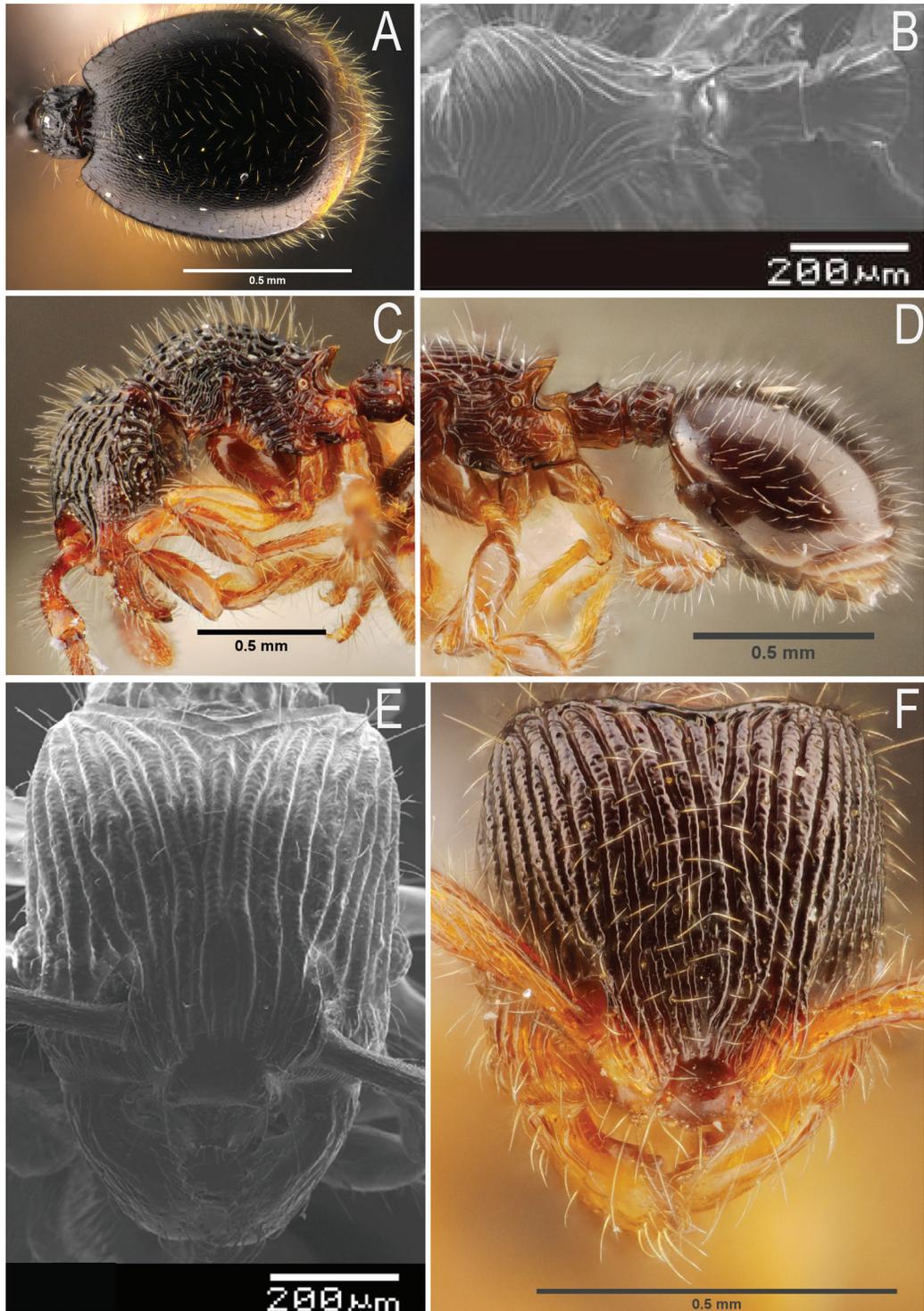
**Fig. 5.** Character used in comparative notes, showing head in full-face view. (A) *Myrmecina bawai* (holotype worker, NBAIRHYM-FOR9421) (B) *Myrmecina lombokensis* (worker). Red arrow indicating the anterior anterolateral corner of clypeus. (A) modified from Aswaj et al. (2021) and (B) modified Okido et al. 2020.

Color pattern is similar to *M. lugsawuti* sp. nov., but with a monochrome reddish-brown petiole, postpetiole, and propodeal lobe.

**Comparative notes:** *Myrmecina siamensis* sp. nov. is morphologically similar to *M. asthena*, *M. bawai*, *M. lombokensis*, and *M. lugsawuti* sp. nov. due to their shared characteristics: dorsum of head with colliculate or irregular sculpture, and short eumetanotal spines. *Myrmecina siamensis* sp. nov. is most similar to *M. lugsawuti* sp. nov., but can be distinguished by the following characteristics: anterior anterolateral corners of clypeus produced into long teeth (blunt and short in *M. lugsawuti* sp. nov.; see Figs. 1B and 3B for comparison); eumetanotal spines distinct with sharp apices (indistinct with blunt apices in *M. lugsawuti* sp. nov.); propodeal spines longer than their basal width, with sharp apices, and (subtriangular, almost as long as their basal width in *M. lugsawuti* sp. nov.); sternopostpetiolar process with sharp anteroventral corner (blunt anteroventral corner in *M. lugsawuti* sp. nov.; see Figs. 1E and 3E for comparison); uniformly reddish-brown petiole and postpetiole (bicolored in *M. lugsawuti* sp. nov.).

*Myrmecina siamensis* sp. nov. can be distinguished from *M. asthena* by the following characteristics: propodeal spines in dorsal view pointed posteriorly, just reaching vertical posteriormost of propodeum in profile (distinctly extending beyond the vertical posteriormost of propodeum in profile in *M. asthena*); eyes flat in full-face view (convex in *M. asthena*); eumetanotal spines distinctly shorter than their basal width (as long as its basal width in *M. asthena*); postpetiole with wrinkled sculpture (distinct longitudinal rugae in *M. asthena*); anteroventral corner of sternopostpetiolar process sharp (blunt corner in *M. asthena*).

*Myrmecina siamensis* sp. nov. can be easily distinguished from *M. bawai* by the following characteristics: anterior anterolateral corners of clypeus produced into long teeth (blunt and short in *M. bawai*; see Figs. 3B and 5A for comparison); ventrolateral portions of head smooth and shiny (possessing several longitudinal rugae in *M. bawai*); dark reddish-brown mesosoma (yellow with a dark tinge in *M. bawai*); dorsal outline of the propodeal spines almost straight (distinctly convex in *M. bawai*); ventral outline of the subpetiolar process almost straight (convex in *M. bawai*).



**Fig. 6.** Characters used in key. (A) First gastral tergite in dorsal view of *Myrmecina rawivonghei* (holotype worker, THNHM-I-05470) (B) Mesosomal dorsum of *Myrmecina dechai* (C) Head and mesosoma in profile view of *Myrmecina inflata* (TH18-SKY-016) (D) Mesosoma, petiole, postpetiole, and gaster of *Myrmecina maryatiae* (SR04-SKY-49) (E) Head in full-face view of *Myrmecina inthanonensis* (F) Head in full-face view of *Myrmecina asiatica* (TH03-SKY-34). (A, C, D, F) Photos by Yudthana Samung (B, E) modified from Okido et al. 2020.

*Myrmecina siamensis* sp. nov. can be separated from *M. lombokensis* by the following characteristics: anterior anterolateral corners of clypeus produced into long teeth (blunt and short in *M. lombokensis*; see Figs. 3B and 5B for comparison); eyes flat in full-face view (convex in *M. lombokensis*); propodeal spines in profile broad, approximately 1.5 times as long as its basal width (narrow, 3 times as long as its basal width in *M. lombokensis*); propodeal spines just reaching vertical posteriormost of propodeum in profile (extending beyond vertical posteriormost of propodeum in *M. lombokensis*).

**Habitat.** The type series was found in a hill evergreen forest at an elevation of approximately 1,500–1,600 m above sea level. This species nests in dead twigs on the forest floor.

**Distribution.** Eastern Thailand (Chanthaburi Province).

#### Key to the Thai species based on worker caste

1. First gastral tergite smooth and shiny (Figs. 1F, 3F). ..... 2  
- First gastral tergite finely punctate (Fig. 6A). ...  
..... *M. raviwonghei* Jaitrong et al., 2019
2. Anterior portion of mesosomal dorsum with transverse rugae, while posterior portion with longitudinal rugae (Fig. 6B). .....  
..... *M. dechai* Okido et al., 2020  
- Mesosomal dorsum with longitudinal rugae (Figs. 2C, 3C). ..... 3
3. Ventrolateral portions of head with transverse rugae (Fig. 6C); masticatory margins of mandible straight; occipital corners project posteriorly. ....  
..... *M. inflata* Okido et al., 2020  
- Ventrolateral portions of head with wrinkles or with longitudinal rugae or smooth; masticatory margins of mandible bent at mid-length; occipital corners not project posteriorly (Figs. 1A, 3A). ...  
..... 4
4. Propodeal spines in profile almost as long as width at base (Fig. 1A). ..... 5  
- Propodeal spines in profile longer than width at base (Fig. 3A). ..... 6
5. Postpetiole bicolor and longer than high, its dorsal outline weakly convex (Fig. 1E). .....  
..... *M. lugsawuti* sp. nov.

- Postpetiole dark brown and shorter than high, its dorsal outline flattened (Fig. 6D). .....  
..... *M. maryatiae* Okido et al., 2020
6. Anterolateral corners of clypeus produced into long teeth; eumetanotal spines distinctly present (Fig. 3B, E). ..... *M. siamensis* sp. nov.
- Anterolateral corners of clypeus forming blunt denticles; eumetanotal spine indistinct. .... 7
7. Posterior margin of head in full-face view strongly concave (Fig. 6E); malar spaces in profile two times longer than diameter of eyes. ....  
..... *M. inthanonensis* Okido et al., 2020
- Posterior margin of head in full-face view feebly concave medially (Fig. 6F); malar spaces in profile three times longer than diameter of eyes or longer. .... *M. asiatica* Okido et al., 2020

#### DISCUSSION

Currently, eight named species of the genus *Myrmecina*, including the two new species, have been recorded in Thailand. However, several unidentified specimens from various parts of the country housed in ant collections in Thailand await to be identified with some of these possibly being new species. Most *Myrmecina* species inhabit primary forests from lowland to highland (200–1,600 m above sea level). Therefore, Thailand serves as a critical habitat for this ant genus, as its extensive primary forests offer ideal nesting environments. Habitat loss from deforestation and climate change in Thailand might threaten the survival of some species of *Myrmecina*.

At least three species of this genus have been discovered and named from highlands (over 1,300 m above sea level) in Thailand. These three species are found exclusively in high-altitude mountains and are distinctly allopatric. Therefore, high-altitude mountains may serve as a dispersal barrier for ants in this genus. However, several *Myrmecina* species occurring at elevations below 800 m a.s.l. in Thailand have also been recorded in neighboring countries. These include *M. asiatica* (China, Malaysia, and Indonesia: Okido et al. 2020), *M. maryatiae* (Singapore: Wang et al. 2022; Indonesia: Okido et al. 2022), and *M. raviwonghei* (China: Liu et al. 2022; Gu et al. 2025). Nevertheless, further comprehensive studies on the distribution patterns of *Myrmecina* remain essential for a better understanding of their biogeography.

Based on external morphology, several populations of unidentified specimens in ant collections appear to be the same species, despite being collected from vastly different localities (e.g., from the south and the north, or from low-lying and high-altitude areas). We cannot definitively confirm their identity. Therefore, future molecular (DNA) analysis will be crucial in determining whether they are indeed distinct species.

## ACKNOWLEDGEMENTS

We would like to sincerely thank Pisut Lugsawat (Forestry Technical Officer, Thailand), who kindly supported Weeyawat Jaitrong in his field surveys. We also thank Yutthana Samung (Department of medical entomology, Mahidol University, Thailand) who kindly helped us in taking ant pictures. The animal use protocol (No. FTM-ACUC 001/2024E) was approved by the Faculty of Tropical Medicine – Institutional Animal Care and Use Committee, Mahidol University. We are deeply grateful to Dr. Okido and his collaborators for kindly allowing us to use several figures from their published article.

## REFERENCES

- AntWeb, 2025. Genus *Myrmecina* Curtis. Downloaded from <https://www.antweb.org/images.do?subfamily=myrmecinae&rank=subfamily&project=allantwebants1829> on 25 July 2025.
- Antwiki, 2025. Downloaded from <https://antwiki.org/wiki/Myrmecina>. on 26 July 2025.
- Aswaj P, Anoop K and Dharma RP, 2021. Description of two new species of ants of the genus *Myrmecina* Curtis, 1829 (Hymenoptera: Formicidae: Myrmicinae) from the Eastern Himalayas. *Zootaxa* 4990(1): 160–171. <https://doi.org/10.11646/zootaxa.4990.1.10>
- Blaimer BB, Ward PS, Schultz TR, Fisher BL and Seán GB, 2018. Paleotropical diversification dominates the evolution of the hyperdiverse ant tribe Crematogastrini (Hymenoptera: Formicidae). *Insect Systematics and Diversity* 2(5): 3. <https://doi.org/10.1093/isd/ixy013>
- Bolton B, 2025. An Online Catalog of the Ants of the World by Barry Bolton. Downloaded from <https://www.antcat.org/>. on 26 July 2025.
- Gu Z, Zhang C, Du C and Chen, Z, 2025. Synopsis of the ant genus *Myrmecina* Curtis, 1829 from China (Hymenoptera, Formicidae, Myrmicinae), with description of eleven new species. *Deutsche Entomologische Zeitschrift* 72(2). <https://doi.org/10.3897/dez.72.162491>
- Ito F, 1996. Colony characteristics of the Indonesian myrmicine ant *Myrmecina* sp. (Hymenoptera, Formicidae, Myrmicinae): polygynous reproduction by ergatoid queens. *Annals of the Entomological Society of America* 89(4): 550–554. <https://doi.org/10.1093/aesa/89.4.550>
- Jaitrong W, Samung Y, Waengsothorn S and Okido H, 2019. A new species of the ant genus *Myrmecina* Curtis, 1829 (Hymenoptera: Formicidae, Myrmicinae) from Thailand. *Far Eastern Entomologist* 383: 1–7. <https://doi.org/10.25221/fee.383.1>
- Liu C, Fischer G, Liu Q, Peng YQ, Economo EP and Guénard B, 2022. Updating the taxonomy of the ant genus *Myrmecina* (Hymenoptera, Formicidae) in China with descriptions of three new species. *Zootaxa* 5182(2): 152–164. <https://doi.org/10.11646/zootaxa.5182.2.2>
- MacGown JA, 2023. Description of a new species of *Myrmecina* (Hymenoptera: Formicidae: Myrmicinae) from the southeastern United States. *Transactions of the American Entomological Society* 149(1): 109–117. <https://doi.org/10.3157/061.149.0106>
- Ogata K and Terayama M, 1992. Kadofushiari-zoku *Myrmecina*. In The Myrmecological Society of Japan (ed.), A Guide for the Identification of Japanese Ants (III), Myrmicinae and supplement to Leptanillinae (Hymenoptera: Formicidae). The Myrmecological Society of Japan, Tokyo, 54–56. 94.
- Okido H, Ogata K and Hosoishi S, 2020. Taxonomic revision of the ant genus *Myrmecina* in Southeast Asia (Hymenoptera: Formicidae). *Bulletin of the Kyushu University Museum* 17, 1–108.
- Satria R and Yamane S, 2019. Two new species of the ant genus *Myrmecina* (Hymenoptera: Formicidae: Myrmicinae) from Sumatra. *Zoosystematica Rossica* 28(1): 183–193. <https://doi.org/10.31610/zsr/2019.28.1.183>
- Shattuck S, 2009. A revision the Australian species of the ant genus *Myrmecina* (Hymenoptera: Formicidae). *Zootaxa* 2146(1): 1–21.
- Sheela S, Kazmi SI and Roy S, 2020. Two new species of the genus *Myrmecina* Curtis, 1829 (Hymenoptera: Formicidae: Myrmicinae) from India. *Far Eastern Entomologist* (403): 13–19. <https://doi.org/10.25221/fee.403.2>

- Wang W, Soh E, Yong G, Wong M, Guénard B, Economo EP and Yamane S, 2022. Remarkable diversity in a little red dot: a comprehensive checklist of known ant species in Singapore (Hymenoptera: Formicidae) with notes on ecology and taxonomy. *Asian Myrmecology* 15: 1–152.
- Ward PS, Brady SG, Fisher BL and Schultz TR, 2015. The evolution of myrmicine ants: phylogeny and biogeography of a hyperdiverse ant clade (Hymenoptera: Formicidae) *Systematic Entomology* 40(1): 61–81. <https://doi.org/10.1111/syen.12090>
- Wong MK and Guénard B, 2016. First confirmed record of the ant genus *Myrmecina* (Hymenoptera Formicidae) from the Malay Peninsula: description of a new species and a key to *Myrmecina* species from Sundaland. *Journal of Hymenoptera Research* 50: 129–140. <https://doi.org/10.3897/jhr.50.8652>