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A NEW SPECIES OF THE ANT GENUS *STIGMATOMMA* ROGER, 1859 (HYMENOPTERA: FORMICIDAE) FROM THAILAND

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Summary. *Stigmatomma magnum* **sp. n.** is described from a primary evergreen forest of eastern Thailand. The new species is notably the largest known *Stigmatomma* species. A key to four *Stigmatomma* species known from Thailand based on worker caste is provided. *Stigmatomma rothneyi* (Forel) has been excluded from the list of Thai ants.

Key words: ant, Amblyoponinae, distribution, taxonomy, new species, key, South-East Asia.

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Резюме. Из вечнозелёных лесов восточного Таиланда описан новый вид *Stigmatomma magnum* **sp. n.** Новый вид, несомненно, является самым крупным из известных видов рода *Stigmatomma*. По рабочим особям составлена определительная таблица четырех видов, известных из Таиланда. *Stigmatomma rothneyi* (Forel) исключен из списка тайских муравьёв.

INTRODUCTION

In this work, we continue our investigations of the ants from Thailand (Tanansathaporn *et al*., 2019; Jaitrong *et al.,* 2020; Jaitrong *et al*., 2021; Jaitrong *et al*., 2022; Jarernkong *et al*., 2023; Duanchay *et al*., 2024; Phosrithong *et al*., 2024). However, the taxonomy and distribution of the genus *Stigmatomma* Roger, 1859 (Formicidae: Amblyoponinae) in Thailand remain poorly understood. To date, only four species have been identified in the country: *S. crenatum* (Xu, 2001), *S. quadratum* Karavaiev, 1935, *S. reclinatum* (Mayr, 1879), and *S. rothneyi* (Forel, 1900) (Khachonpisitsak *et al*., 2020).

Recently, while examining ant specimens at the Natural History Museum of the National Science Museum, Thailand (THNHM), we found a few unidentified specimens of *Stigmatomma* that were collected from a primary rainforest in eastern Thailand and belongs to the *Stigmatomma reclinatum* species-group. This group is recognized for its primitive traits, hidden lifestyles, and gamergate reproduction (Ito *et al*., 2010). These characteristics often

lead to specialized niches and limited distribution. This species group is particularly intriguing, known for its subterranean habits and predation on arthropods (Brown, 1960). After carefully examining the unidentified specimens under a stereomicroscope and comparing them with the closely related species, we concluded that they belong to a new species which is described below. A key to the *Stigmatomma* species of Thailand, based on workers, is also provided.

MATERIALS AND METHODS

The new species was collected from eastern Thailand. The locality was covered by a primary evergreen forest. The type series of the new species were compared with high-resolution images of the holotypes, paratypes, and syntypes of closely related species: *S. crenatum* (CASENT0104983), *S. quadratum* (CASENT0916797), *S. reclinatum* (CASENT0915649), and *S. rothneyi* (CASENT0102517) available in AntWeb (2025). Morphological observations were made using a RELIFE R-M5T-B1 stereoscope.

Multi-focused montage images were generated with NIS-Elements-D, compiled from a series of images captured by a Nikon Digital Sight-Ri1 camera mounted on a Nikon AZ100M stereoscope. The following parts of the holotype and paratype were measured using a micrometer (accurate to 0.01 mm).

Abbreviations for these measurements and indices follow those modified from Matthew *et al*. (2023) and Hsu *et al*. (2017): **TL** – total length, measured from mandibular apex to gastral apex; **HL** – maximum length of head in full-face view, measured from transverse line spanning anteriormost points of clypeus to that of posteriormost points of head; **HW** – maximum width of head in full-face view (excluding eyes); **HW2** – width of head immediately posterior to posterolateral margin of clypeus (as in Taylor, 1978); **SL** – scape length, maximum length of antennal scape excluding basal condylar bulb; **EL** – eye diameter, maximum diameter of eye; **ML** – mandible length, outer length of mandible (as in Taylor 1978); **WL** – weber's length, diagonal length of mesosoma in profile, measured from base of anterior slope of the pronotum to metapleural lobe; **PPW** – propodeal posterior width, width of propodeum in dorsal view, measured across posterior margin of propodeum; **PnW** – pronotal width, maximum width of pronotum in dorsal view; **PL** – petiolar length, maximum length of petiole in profile view (excluding helcium); **PH** – petiolar height, maximum height of petiole in profile view (including subpetiolar process); **DPW** – dorsal petiole width, maximum width of petiole in dorsal view; **CI** – cephalic index, HW × 100/ HL; **SI** – scape index, SL × 100/ HW; **MI** – mandibular index, ML × 100/ HL; **PI** – petiolar index, DPW × 100/ PL.

Holotype and paratype of the new species are deposited in the Natural History Museum of the National Science Museum, Thailand (THNHM).

DESCRIPTION OF NEW SPECIES

***Stigmatomma magnum* Wimolsuthikul, Jaitrong et Chomphuphuang, sp. n.**
https://zoobank.org/NomenclaturalActs/60331065-496F-4751-8542-CC48C4AEBEE9
Fig. 1

TYPE MATERIAL. Holotype – worker (THNHM-I-00030246, THNHM), Eastern Thailand, Chanthaburi Province, Khao Soi Dao District, Khao Soi Dao WS., Q8, lowland rainforest (MEF), 30.IX 2006, leg. W. Sakshoowong (THNHM). Paratype – worker (THNHM-I-00030247, THNHM), same data as holotype.

DESCRIPTIONS. **Worker**. Measurements and indices. Holotype: TL 13.10, HL 2.4, HW 2.55, HW2 2.48, SL 1.64, EL 0.18, ML 2.44, WL 3.49, PPW 1.13, PnW 1.46, PL 1.16, PH 1.06, DPW 1.24, CI 106.06, SI 64.29, MI 98.51, PI 94.12. Paratype: TL 12.74, HL 2.44, HW 2.55, HW2 2.44, SL 1.64, EL 0.22, ML 2.4, WL 3.42, PPW 1.13, PnW 1.42, PL 1.2, PH 1.06, DPW 1.27, CI 104.48, SI 64.29, MI 101.52, PI 94.29.

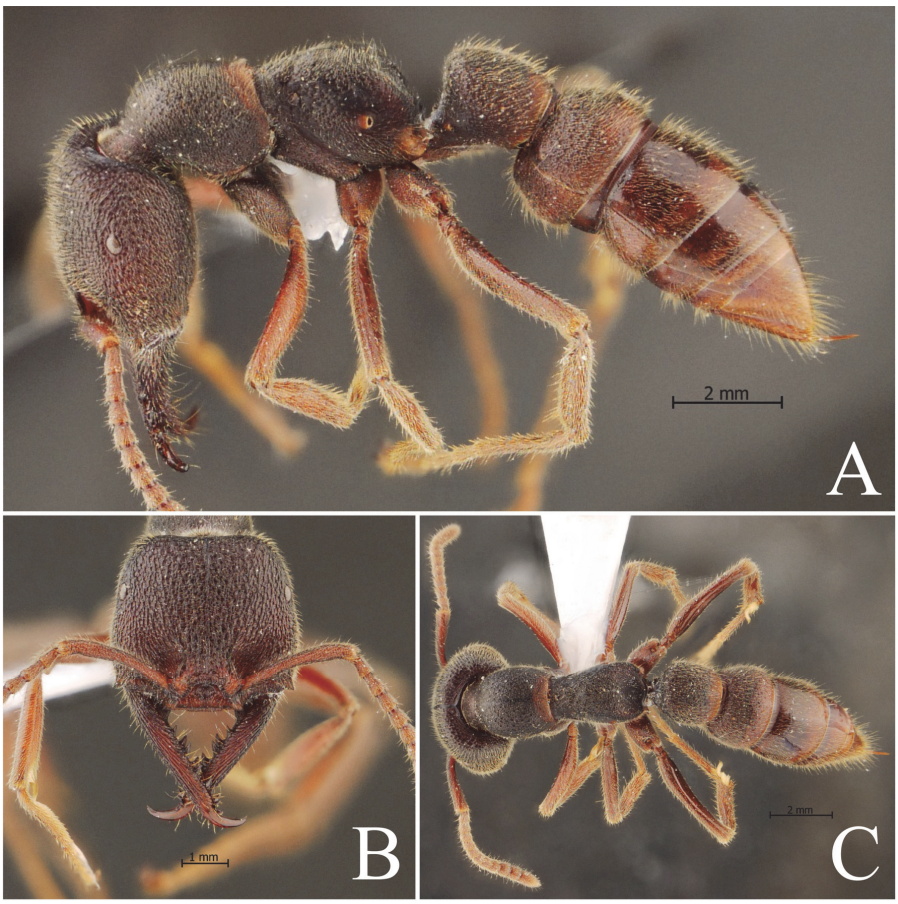

Fig. 1. *Stigmatomma magnum* sp. n., holotype worker (THNHM-I-2012-03270): A – body in profile view; B – head in full-face view; C – body in dorsal view.

Head: in full-face view, almost as long as broad, broader anteriorly, lateral margin convex and posterior margin weakly concave medially; cephalic median ridge well developed, running from posterior clypeal margin to posterior margin of head; genal tooth present, broadly triangular. Mandible longer than head length, slender clearly longer than broad; masticatory margin of mandible with two rows of large teeth; apical tooth large, curved, with a sharp apex. Clypeus broad, anterior margin almost straight with 17–19 small denticles. Frontal lobe developed, extends laterally at obtuse angle, partially covering antennal socket;

frontal carina short, reaching 1/3 of head length. Eye elliptical, its maximum width almost as broad as maximum width of scape, and located laterally posterior 1/3 of head length. Antenna 12-segmented; scape clavate, short, reaching level mid-length of eye.

Mesosoma: in profile longer than head length excluding mandible but shorter than gaster; pronotum in profile almost as long as propodeum and convex dorsal outline; mesonotum distinctly shorter and narrower than pronotum and propodeum; pronotum in dorsal view slightly longer than broad, lateral margin convex, while posterior margin feebly concave; promesonotal suture distinct; mesonotum in dorsal view short and narrow, metanotal groove indistinct; mesopleuron in profile narrow clearly demarcated with mesonotum and metapleuron by distinct groove; metapleuron not demarcated from lateral face of propodeum; propodeal dorsal outline straight and round into declivity; propodeal declivity shallowly concave and marginated laterally with ridge; propodeum in dorsal view longer than broad and clearly narrower than pronotum; distance between propodeal spiracle and propodeal declivity distinctly shorter than distance between propodeal spiracle and propodeal dorsum.

Petiole: in profile view subsessile, slightly longer than high; anterior margin of petiole feebly concave, anterodorsal conner strongly convex, while dorsal outline weakly convex. Subpetiolar process weakly developed, its ventral outline convex.

Gaster: in profile relatively long compared with head and mesosoma; gastral segment I shorter than high and separated from segment II by girdling constriction; gastral segment II slightly longer than another segment.

Mandibular dorsum longitudinally costate. Clypeus entirely longitudinally striate but slightly shiny. Head dorsum puncto-reticulate. Pronotum, mesonotum, propodeum, petiole, and gastral segment I densely punctate; remaining gastral segments superficially shagreened with smooth and shining interspaces; antennal scape densely punctate; legs micropunctate but shiny.

Body dorsum with dense long erect hairs mixed with dense shorter hairs; hairs on gaster distinctly longer hairs on head dorsum; mandible covered with sparse erect hairs; lateral face of propodeum with sparse short decumbent hairs. Body dark reddish brown; tip of gaster, antenna, and legs paler than mesosoma.

DIAGNOSIS. Workers of *Stigmatomma magnum* sp. n. (Fig. 1) are most similar to *S. reclinatum* (Fig. 2) but it can be distinguished from the latter by: 1) body larger (TL 12.70–13.10 mm, HW 2.55 mm in *S. magnum*; TL 9.65–10.45 mm, HW 1.67–1.82 mm in *S. reclinatum*); 2) head slightly round, with convex sides (square, with almost parallel sides in *S. reclinatum*); 3) head sculptures different (see Figs. 1B and 2B for comparison); 4) body entirely reddish-brown (dark to black in *S. reclinatum*).

REMARKS. Members of the *Stigmatomma reclinatum* species-group are monomorphic in the worker caste, exhibiting small size variation (Ward & Fisher 2016; Guénard *et al*., 2013; Hsu *et al*., 2017). Thus, body size can be effectively used to differentiate between larger and smaller species within the group. The new species is clearly the largest species within *Stigmatomma reclinatum* species-group.

HABITAT. The new species was found in the lowland primary rainforest of eastern Thailand. The type series was collected from leaf litter.

DISTRIBUTION. Thailand (Chanthaburi Province).

ETYMOLOGY. The species epithet "*magnum*" is a Latin word meaning large. This refers to the largest species of the *Stigmatomma reclinatum* species group.

Key to Thai species based on worker caste

1 In full face view anterior clypeal margin with about 12 denticles, smaller species (TL 6.62–7.92 mm; HW 1.13–1.2 mm) ……..……..…… ***S. crenatum*** (Xu, 2001)
– In full face view anterior clypeal margin with more than 12 denticles; larger species (TL > 8.2 mm; HW > 1.3 mm) ……..……..…….. 2
2 In full face view mandible length slightly shorter than head length ….....…… ……..……..…… ***S. quadratum*** Karavaiev, 1935
– In full face view mandible length slightly longer than head length ……..……..… 3
3 In full face view lateral margin of head square, with parallel sides ……..…… ……..…… ***S. reclinatum*** (Mayr, 1879)
– In full face view lateral margin of head round, with convex sides (Fig. 1) …… ……..…… ***S. magnum* sp. n.**

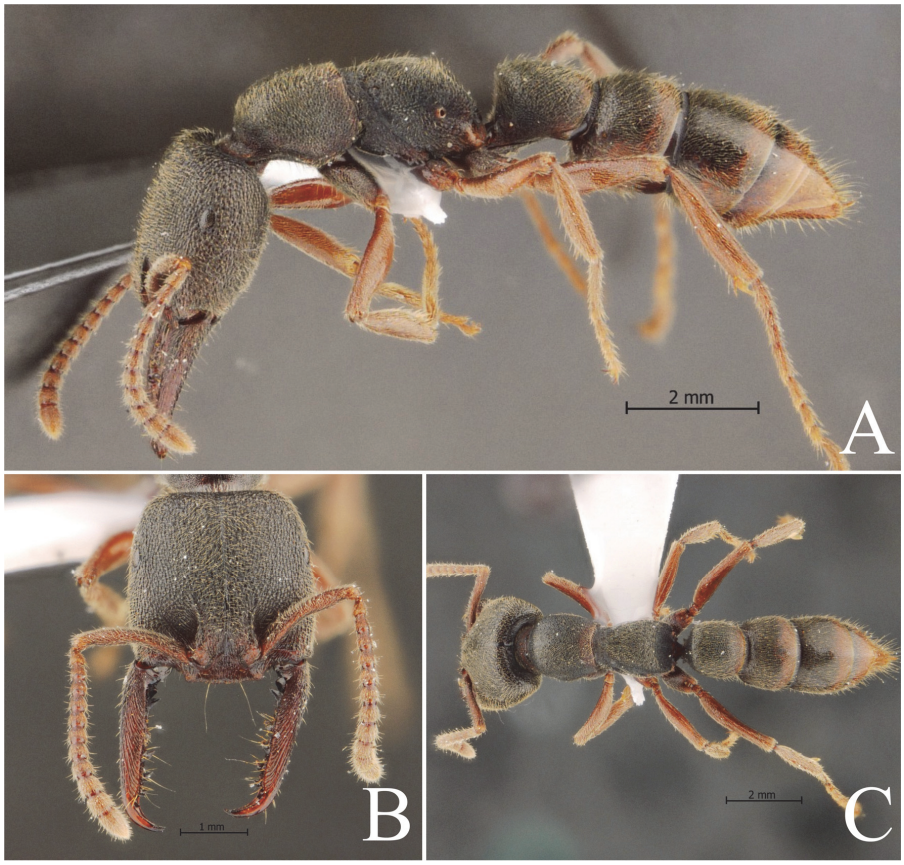

Fig. 2. *Stigmatomma reclinatum*, nontype worker (TH24-CHW-001): A – body in profile view; B – head in full-face view; C – body in dorsal view.

DISCUSSION

Khachonpisitsak *et al*. (2020) reported *S. rothneyi* from northern Thailand (Chiang Mai Province) based on the specimen (CASENT0102186) available on AntWeb (2025). After carefully examining images of this specimen and comparing them with type material of the *S. reclinatum* species group, we concluded that this specimen is actually *S. crenatum* (Xu, 2001). Furthermore, additional specimens collected from northern Thailand were also identified as *S. crenatum*. As no confirmed *S. rothneyi* specimens have been found in Thailand to date, we are excluding this species from the Thai ant list.

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The research protocol was approved by the Institutional Animal Care and Use Committee of Khon Kaen University (Approval No. IACUC-KKU-81/67), in compliance with the Ethics of Animal Experimentation from the National Research Council of Thailand (Reference No. 660201.2.11/606(91), dated 5 August 2024).

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