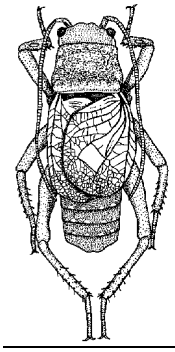

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REVIEW OF THE THAI SPECIES OF THE GENUS *SPHINCTOMYRMEX* MAYR, 1866 (HYMENOPTERA: FORMICIDAE, DORYLINAE), WITH DESCRIPTION OF A NEW SPECIES

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The Thai species of the ant genus *Sphinctomyrmex* Mayr, 1866 are revised. *S. furcatus* Emery, 1893 is firstly recorded from Thailand (Saraburi and Trang provinces). *S. siamensis* Jaitrong, **sp. n.** is described from Chiang Mai Province based on worker caste. Both Thai species were collected from soil, under leaf litter. A key to Asian species of *Sphinctomyrmex* is provided.

KEY WORDS: ant, Dorylinae, *Sphinctomyrmex*, new species, fauna, Thailand.

В. Джайтронг, Д. Виватвитая*, В. Сакчувонг. Обзор муравьев рода *Sphinctomyrmex* Mayr, 1866 (Hymenoptera: Formicidae, Dorylinae) из Таиланда с описанием нового вида // Дальневосточный энтомолог. 2016. N 305. С. 1-9.

Дан обзор таиландских видов рода *Sphinctomyrmex* Mayr, 1866. Впервые для Таиланда (провинции Сарабури и Транг) приводится *S. furcatus* Emery, 1893. Из провинции Чианг Май по рабочим описан новый вид *S. siamensis* Jaitrong, **sp. n.** Оба таиландских вида собраны на почве среди растительного опада. Приведена определительная таблица азиатских видов рода *Sphinctomyrmex*.

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INTRODUCTION

The genus *Sphinctomyrmex* Mayr, 1866 was originally described from Brazil by Mayr (1866) with *Sphinctomyrmex stali* Mayr, 1866 as the type species, and assigned to the subfamily Cerapachynae (Bolton, 2003). Recent molecular phylogenetic study by Brady *et al*. (2014), which showed the monophyly of all the dorylomorph genera, treated the genus as belonging to Dorylinae. Currently 24 valid species names are listed (Antweb, 2015). Most of the members of the genus (17 species) are distributed in the Australasian region (Brown, 1975; Bolton, 1995); three species are found in the Neotropical region (Brazil) (Feitosa *et al*., 2012); two in tropical Africa (Brown, 1975; Bolton, 1995) and the other two, *Sphinctomyrmex furcatus* (Emery, 1893) and *S. taylori* Forel, 1900, in Asia (India and Myanmar) (Brown, 1975; Bolton, 1995). So far no species of the genus have been recorded from Thailand.

In the course of our examination of *Sphinctomyrmex* specimens collected from Thailand, two species were recognized; one of which is new to science and one is newly recorded in Thailand. In this paper the *Sphinctomyrmex* species from Thailand are revised, with a description of a new species and a key to the Asian species, based on the worker caste.

MATERIALS AND METHODS

This study is mainly based on the materials deposited in the Ant Museum of Kasetsart University, Thailand, (AMK) and the Natural History Museum of the National Science Museum, Thailand (THNHM). Most morphological observations were made with a ZEISS Discovery.V12 stereoscope. Materials used in this study were compared with the high resolution images of syntypes and paratypes of *Sphinctomyrmex furcatus* Emery, 1893, *S. taylori* Forel, 1900, and all the related forms which were described from Australasian regions (Antweb, 2015).

Multi-focused montage images were produced using Helicon Focus 4.75 Pro from a series of source images taken by a Canon EOS Kiss×4 digital camera attached to a Nikon ECLIPSE E600 microscope. Specimens were measured for the following parts using a micrometer (accurate to 0.01 mm).

The abbreviations used for the measurements and indices are as follows:

HL – Head length. Length of head proper, excluding mandibles, measured in straight line from anterior clypeal margin to mid-point of a line drawn across posterior margin of head.

HW – Head width. Maximum width of head capsule measured in full-face view, excluding compound eyes.

EL – Eye length. Maximum measurable length of eye in profile.

SL – Scape length. Maximum straight length of antennal scape excluding basal constriction and condylar bulb.

WL – Mesosomal length (Weber's legth). Diagonal length of mesosoma in profile, from the point at which pronotum meets cervical shield to posterior margin of metapleuron.

PL – Petiole length measured from anterior margin to posteriormost point of tergite in profile.

PW – Petiole width. Maximum width of petiole in dorsal view.

TL – Total length, roughly measured from anterior margin of head to tip of gaster in stretched specimens.

CI – Cephalic index. HW × 100/HL.

SI – Scape index. SL × 100/HW.

OI – Ocular index. EL × 100/HW.

The general terminology the worker ants follows Hölldobler & Wilson (1990), and Bolton (1994). For the important characters in the genus *Sphinctomyrmex* used in this paper, see Brown (1975) and Feitosa *et al*. (2012).

SYSTEMATICS

Family Formicidae

Subfamily Dorylinae

Genus *Sphinctomyrmex* Mayr, 1866

Key to Asian species of *Sphinctomyrmex* based on worker caste

1 Antenna 12-segmented; eyes absent; pygidial apex truncate as seen from above; smaller species (WL 0.89-0.92 mm); gastral segments II, III, and IV nearly equal to one another in width and length (Fig. 7) (Thailand) ..... ***S. siamensis* sp. n.**

– Antenna 11-segmented; eyes present but small; pygidial apex deeply notched as seen from above; larger species (WL 1.27-1.78 mm); gastral segment II clearly larger than each of segments III and IV in width and length (Fig. 3) 2

2 Larger species (WL 1.68-1.78 mm); body deep reddish brown; petiolar node longer than broad (India, Myanmar, and Thailand) ... ***S. furcatus* (Emery, 1893)**

– Smaller species (WL 1.27 mm); body light reddish brown; petiolar node broader than long (India) ..... ***S. taylori* Forel, 1900**

***Sphinctomyrmex furcatus* (Emery, 1893)**
Figs 1–4

Eusphinctus furcatus Emery, 1893: 275 (syntypes – workers from Myanmar, Palon, Pegu, VIII.IX 1887, L. Fea leg.).

Sphinctomyrmex furcatus: Emery, 1895: 457; Bingham, 1903: 25; Brown, 1975: 75; Bolton, 1995: 392.

MATERIAL. **Thailand**: Trang Province, Nayong District, evergreen forest, 16.IV 2000, colony no. WJT160400-1, 5 workers (THNHM-I-00001 to THNHM-I-00005), W. Jaitrong leg.; Saraburi Province, Ched Kod, dry evergreen forest, 4.VII 2003, 1 worker (THNHM-I-00006), S. Hasin leg.

REDESCRIPTION. Head in full-face view almost as long as broad, subrectangular, slightly broader posteriorly with side convex and posterior margin feebly concave; posterior corners of head bluntly angular; occipital margin bearing a narrow collar. Eye present, located in a foveola at middle of lateral face of head. Antenna 11-segmented; antennal scape relatively short, reaching midlength of head; II-VI each shorter than broad; XI slightly longer than VII+VIII+IX+X. Frontal carina short, extending 1/3 of head length, fused at posteriormost portion to form a single carina; parafrontal ridge extending posteriorly less than 1/3 of head length. Clypeus narrowly inserted between frontal carinae; median portion of clypeus with a distinct tubercle, anterior clypeal margin strongly concave. Mandible subtriangular, with basal margin rounding into masticatory margin; the latter apparently edentate.

Mesosoma stout and swollen, in profile with almost flat dorsal outline; promesonotal suture and metanotal groove obliterated; mesopleuron clearly demarcated from promesonotum by a deep groove and from metapleuron and lateral face of propodeum by a carina; propodeal junction obtusely angulated; declivity of propodeum shallowly concave, and encircled with a distinct rim.

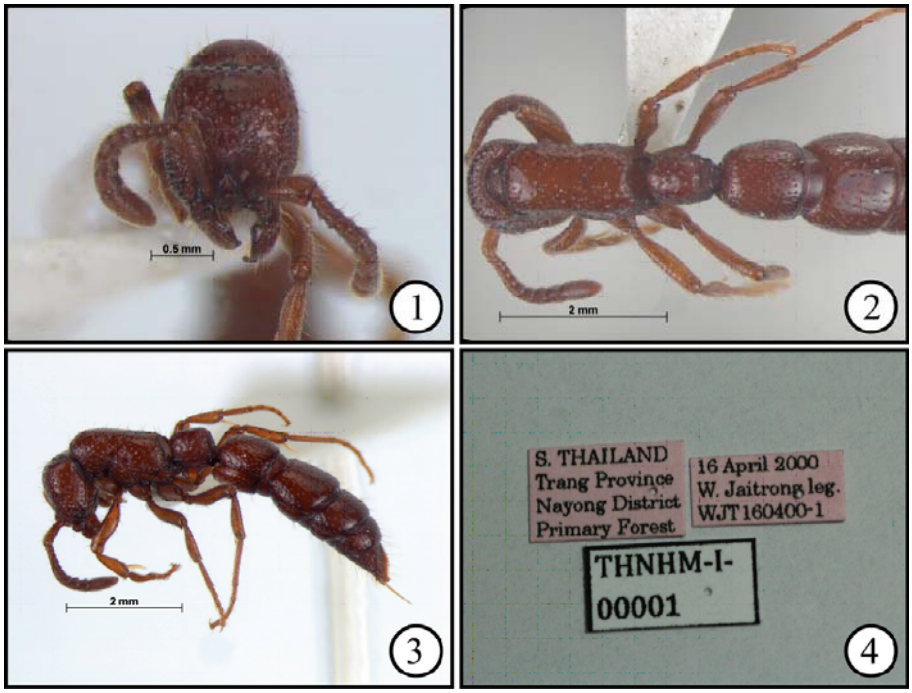
Petiole in profile rectangular and sessile, clearly longer than broad, its dorsal outline straight, anterior and posterior faces vertical; subpetiolar process well developed, subtriangular, its apex truncate and directed downward, anterior margin convex, while posterior margin concave.

Gaster elongate, gastral segments I and II clearly separated by distinct constrictions, segments III, IV, and V separated from each other by deeply impressed, short constrictions; in dorsal view, gastral segment I (abdominal segment III) slightly narrower than gastral segment II, as broad as segment III, and broader than segment IV; segment III larger than IV in width and length; dorsum of pygidium shallowly concave with a row of spines laterally, pygidial apex deeply notched as seen from above.

Head with dense foveolae, foveolar intervals broad, smooth and shiny; antennal scrobe finely superficially reticulate but shiny; dorsum of mesosoma largely smooth and shiny with sparse, very shallow foveolae; lateral faces of pronotum, mesopleuron, metapleuron and propodeum with dense foveolae, foveolar intervals superficially shagreened but shiny; lateral face of petiole reticulate; each gastral segment with generally smooth and shiny.

Pilosity comparatively sparse; dorsum and lateral face of head with sparse standing hairs mixed with sparse short decumbent hairs; dorsa of mesosoma, petiole, gaster with sparse standing hairs; pygidium and hypopygium with dense longer hairs.

Body entirely deep reddish brown.



Figs 1–4. *Sphinctomyrmex furcatus*, non-type worker. 1 – head in full-face view; 2 – body from dorsal view; 4 – body in profile; 4 – labels.

MEASUREMENTS. Non-type worker (n = 6): TL 6.85-6.90 mm, HL 1.12-1.16 mm, HW 1.02-1.09 mm, SL 0.61-0.63 mm, EL 0.03-0.05 mm, WL 1.68-1.78 mm, PL 0.61-0.63 mm, PW 0.58-0.63 mm, CI 91-94, SI 58-61, OI 3-5.

DISTRIBUTION. India, Myanmar (type locality) and Thailand (Saraburi and Trang Provinces, new record).

REMARKS. *Sphinctomyrmex furcatus* is similar to *S. taylori* Forel, 1900 in general appearance as they share the pygidial apex deeply notched (as seen from above), 11-segmented antenna, reddish brown body and swollen mesosoma. However, *S. furcatus* is easily separated from *S. taylori* by the following conditions: body larger (WL 1.68-1.78 mm in *S. furcatus* while WL 1.27 mm in *S. talori*); petiole longer than broad (broader than long in *S. taylori*); body color darker (deep reddish brown in *S. furcatus* while light reddish brown in *S. taylori*).

***Sphinctomyrmex siamensis* Jaitrong, sp. n.**
Figs 5–8

MATERIAL. Holotype – worker (THNHM-I-00007), **Thailand**: Chiang Mai Province, Mae Tang District, secondary forest, 26.IV 2000, W. Jaitrong leg., colony no. WJT00-TH01. Paratypes: 5 workers (THNHM-I-00008, THNHM-I-00009, THNHM-I-00010, THNHM-I-00011, THNHM-I-00012, THNHM), same data as holotype.

DESCRIPTION (Holotype and paratypes)**.** Head in full-face view clearly longer than broad, subrectangular, slightly broader anteriorly with side weakly convex and posterior margin concave; posterior corners of head bluntly angular; occipital margin bearing a distinct carina. Eyes absent. Antenna 12-segmented; antennal scape relatively short, not reaching midlength of head; antennal segment II almost as long as broad; III-X each shorter than broad; XII almost as long as VIII+IX+X+XI or slightly longer. Frontal carina short, extending beyond level of posterior margin of torulus, well developed anteriorly and poorly developed posteriorly, curved anterior extension of frontal carinae bearing 2 denticles in front of antennal socket; parafrontal ridge extending posteriorly less than 1/3 of head length. Clypeus narrowly inserted between frontal carinae; median portion of clypeus with a distinct tubercle. Mandible subtriangular, with basal margin rounding into masticatory margin; the latter apparently edentate, but there may be a few small inconspicuous denticles near basal angle.

Mesosoma twice as long as broad, in profile with almost flat dorsal outline or feebly convex; promesonotal suture and metanotal groove obliterated; katepisternum clearly demarcated from anepisternum by a distinct carina; metapleuron demarcated from mesopleuron and lateral face of propodeum by carinae; propodeal junction nearly right-angled; declivity of propodeum shallowly concave and encircled with a thin rim.

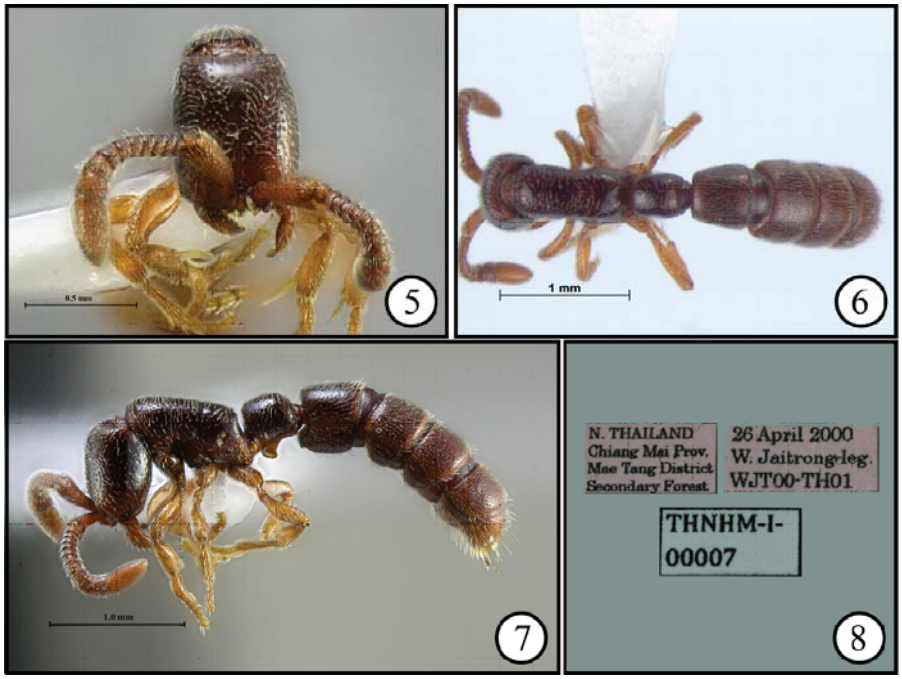
Petiole sessile, slightly longer than broad, its dorsal outline weakly convex, anterior face flat encircled with an indistinct ridge but posterior face slightly convex and tergite clearly demarcated from sternite by a distinct ridge; subpetiolar process well developed, subtriangular with a small window at middle, its apex truncate and directed downward, anterior margin convex, while posterior margin strongly concave.

Gaster elongate, gastral segments I and II clearly separated by distinct constrictions, segments III, IV, and V separated from each other by deeply impressed, short constrictions; in dorsal view, gastral segment I (abdominal segment III) narrower than segments II, III, and IV but slightly broader than petiole; segments II, III, and IV nearly equal to one another in width and length; dorsum of pygidium flat with 1–2 rows of spines laterally, pygidial apex truncate as seen from above.

Dorsum and lateral face of head with dense foveolae, areas between foveolae smooth and shiny; venter of head smooth and shiny; dorsum of mesosoma smooth and shiny with sparse, very shallow foveolae; lateral face of pronotum partly superficially shagreened but shiny; mesopleuron, metapleuron and lateral face of propodeum smooth and shiny; propodeum declivity superficially reticulate but shiny; petiolar node smooth and shiny; each gastral tergite with dense hair pits but areas between hair pits smooth and shiny.

Pilosity comparatively dense; dorsum and lateral faces of head with dense apprised to decumbent hairs; venter of head with sparse apprised hairs; dorsum of mesosoma with dense, very short decumbent hairs; petiole and gaster with dense, longer decumbent hairs; pygidium and hypopygium with dense erect hairs.

Body reddish brown to dark brown; legs, terminal segment of antenna (XI) and tip of gaster yellowish brown; 2/3 of head, dorsa of mesosoma and petiole darker than elsewhere.



Figs 5–8. *Sphinctomyrmex siamensis*, sp. n., holotype worker. 1 – head in full-face view; 2 – body from dorsal view; 4 – body in profile; 4 – labels.

MEASUREMENTS. Holotype: TL 3.95 mm, HL 0.66 mm, HW 0.54 mm, SL 0.36 mm, WL 0.86 mm, PL 0.36 mm, PW 0.30 mm, CI 83, SI 67. Paratypes (n = 5): TL 3.85-3.95 mm, HL 0.66–0.73 mm, HW 0.54–0.58 mm, SL 0.35–0.36 mm, WL 0.89–0.92 mm, PL 0.33–0.36 mm, PW 0.30–0.36 mm, CI 77–83, SI 62–65.

DISTRIBUTION. Thailand (Chiang Mai Province).

DIAGNOSIS. *Sphinctomyrmex siamensis* sp. n. has been compared with high resolution images of syntypes and paratypes of all the related forms which were described from Australasian and Oriental regions (Antweb, 2015). New species is most similar to *Sphinctomyrmex trux* Brown, 1975 (Australian species) in general appearance as they share the pygidium truncate when seen in dorsal view, 12-segmented antenna, subtriangular subpetiolar process (Fig. 7), and somewhat smooth

and shiny dorsa of mesosoma and petiolar node. However, *S. siamensis* sp. n. is easily separated from *S. trux* by the following conditions: much smaller body (HW 0.54-0.58 mm, WL 0.89-0.92 mm in *S. siamensis* while HW 0.74-0.84 mm, WL 1.12-1.26 mm in *S. trux*); relatively longer head (CI 77-83 vs 87-89); complete lack of eyes (in *S. trux* the eyes are present as pigmented dots in the middle of the side of the head); possession of a distinct tubercle in median portion of clypeus (tubercle absent in *S. trux*); and relatively longer petiole.

HABITAT. The type series of the new species was collected from soil surface in a shifting agricultural area at an elevation of about 800 m above sea level near a hill-evergreen forest during the dry season.

ETYMOLOGY. The scientific name is an adjective meaning 'of Siam (old name of Thailand)'.

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