

A Revision of the Thai Species of the Ant Genus *Aenictus* Shuckard, 1840 (Hymenoptera: Formicidae: Dorylinae)

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ABSTRACT:- A total of 34 species are recognized among the *Aenictus* fauna of Thailand based on the external morphological characters of the worker. They belong to the following ten species groups: *A. ceylonicus* group (*A. concavus* Jaitrong et Yamane, *A. cylindripetiolus* Jaitrong et Yamane, *A. fuchuanensis* Zhou, *A. khaoyaiensis* Jaitrong et Yamane, *A. maneerati* Jaitrong et Yamane, *A. pinkaewi* Jaitrong et Yamane, *A. thailandianus* Terayama et Kubota, *A. watanasiti* Jaitrong et Yamane, *A. wilaiiae* Jaitrong et Yamane, and *A. wiwatwitayai* Jaitrong et Yamane); *A. currax* group (*A. cornutus* Forel, *A. parahuonicus* Jaitrong et Yamane, and *A. gracilis* Emery); *A. hottai* group (*A. hottai* Terayama et Yamane); *A. javanus* group (*A. doydeei* Jaitrong et Yamane, *A. duengkaei* Jaitrong et Yamane, *A. longinodus* Jaitrong et Yamane, and *A. nishimurai* Terayama et Kubota); *A. leptotyphlatta* group (*A. leptotyphlatta* Jaitrong et Eguchi); *A. laeviceps* group (*A. binghami* Forel, *A. fulvus* Jaitrong et Yamane, *A. hodgsoni* Forel, *A. laeviceps* (F. Smith), *A. siamensis* Jaitrong et Yamane, and *A. sonchaengi* Jaitrong et Yamane); *A. minutulus* group (*A. changmaianus* Terayama et Kubota, and *A. minutulus* Terayama et Yamane); *A. pachycerus* group (*A. dentatus* Forel and *A. paradentatus* Jaitrong et Yamane); *A. silvestrii* group (*A. jarujini* Jaitrong et Yamane) and *A. wroughtonii* group (*A. artipus* Wilson, *A. camposi* Wheeler et Chapman, *A. stenocephalus* Jaitrong et Yamane, and *A. veiti* Jaitrong et Yamane). Three species are newly record from Thailand: *A. cornutus* (Narathiwat Province, S. Thailand), *A. minutulus* (Trang and Narathiwat Provinces, S. Thailand), and *A. veiti* (Tak Province, W. Thailand). Many new localities in Thailand are given for most of the species.

A key to species is provided based on the worker caste to include all species. I omit the male-based names from the species treatment in this paper. Morphological and bionomic information is presented for each species. In the *A. ceylonicus*, *A. javanus* and *A. minutulus* groups size variation occurs among individuals from single colonies. The workers of these species groups are roughly sorted into two size classes that are not very distinctive in structural characters. The members of the other seven species groups with medium-sized and larger species are typically monomorphic in the worker caste.

KEY WORDS: Army ants, *Aenictus*, species groups, taxonomy, new localities, Thailand.

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INTRODUCTION

The genus *Aenictus* Shuckard, 1840 is one of the true army ant genera (Wilson, 1964; Gotwald, 1995). Most species of the genus are specialized predators of other ants, especially of immature stages (Gotwald, 1976; Rościszewski and Maschwitz, 1994; Gotwald, 1995). Only some Asian species such as *Aenictus gracilis* Emery, *Aenictus laeviceps* (F. Smith), *Aenictus hodgsoni* Forel, and *Aenictus paradentatus* Jaitrong et Yamane are known to hunt a variety of invertebrate prey as well as ants, using large numbers of workers in raids (Gotwald, 1995; Hirosawa *et al.*, 2000; Shattuck, 2008; Jaitrong and Yamane, 2011; Jaitrong *et al.*, 2012; Hashimoto and Yamane, 2014). Foraging raids undertaken by these ants occur both day and night, usually across ground surface but occasionally also arboreally. During raids, numerous workers attack a single nest or small area containing several nests of ant, with several workers coordinating their efforts to carry large prey items back to nests or bivouacs.

The genus *Aenictus* was erected by Shuckard (1840) based on the male, with *Aenictus ambiguus* as the type species and assigned to the subfamily Dorylinae. Bolton (1990) removed the genus from a member of the subfamily Dorylinae and treated it as an independent subfamily, Aenictinae, based on morphological characters. Recent molecular phylogenetic study by Brady *et al.* (2014), which showed the monophyly of all the dorylomorph genera, treated it as belonging to Dorylinae. Currently 180 valid species and 30 valid subspecies names are listed for *Aenictus* (<http://www.antcat.org/catalog/429477>). They are distributed throughout the Old World tropics and subtropics, from Africa through the Middle East (including Arabian Peninsula, Armenia, Turkey, Rhodes Is., Iran and Afghanistan), Pakistan, India, South China, the southernmost part of Japan,

various countries in Southeast Asia, to New Guinea and Australia (Arnol'di, 1968; Bolton, 1994; Gotwald, 1995; Aktaş *et al.*, 2004; Radchenko and Alipanah, 2004; Shattuck, 2008; Jaitrong and Yamane, 2011, 2013). In Southeast Asia, approximately 95 species belonging to 12 species groups of the genus have been named. Among them 76 species are known only from the worker caste (Jaitrong and Yamane, 2011; Jaitrong and Wiwatwitaya, 2013; Jaitrong and Yamane, 2013). Up to now 31 worker-based names have been known in Thailand. The recent papers dealing with species from Thailand include: Wilson (1964), Terayama and Kubota (1993), Jaitrong and Eguchi (2010), Jaitrong and Yamane (2010), Jaitrong *et al.* (2010), Jaitrong and Yamane (2011), Wiwatwitaya and Jaitrong (2011), Jaitrong *et al.* (2012), Jaitrong and Hashimoto (2012), Jaitrong (2013), Jaitrong and Wiwatwitaya (2013), Jaitrong and Yamane (2013). Eguchi *et al.* (2014) listed 23 species including 3 unidentified species from Vietnam.

The present study is aimed to resolve the taxonomic and bionomic problems in the genus *Aenictus*, and revise the Thai species of the genus based on the morphological characteristics of the worker. This study is the first comprehensive taxonomic revision of *Aenictus* ants from Thailand. I reexamine the species group classification, and provide descriptions, illustrations, and keys to the Thai species. Bionomic information is presented for each species where available.

MATERIALS AND METHODS

Sources of materials

This study is mainly based on the materials deposited in the Ant Museum of Kasetsart University (Thailand) and The Natural History Museum of the National Science Museum (Thailand). Holotypes, paratypes and

syntypes of named species were loaned from the following museums, institutions, and private collections listed below. For their abbreviations I mainly follow Bolton (2007).

- ACEG Ant Collection of Katsuyuki Eguchi, Japan.
 AMK Ant Museum, Faculty of Forestry, Kasetsart University, Thailand.
 BMNH The Natural History Museum, London, U.K.
 KKIC Kasetsart Kampaengsaen Insect Collection, Thailand.
 MCSN Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy.
 MCZC Museum of Comparative Zoology, Cambridge, MA, U.S.A.
 MHNG Museum d'Histoire Naturelle, Geneva, Switzerland.
 MZB Museum Zoologicum Bogoriense, Cibinong, Indonesia.
 NHMW Naturhistorisches Museum, Wien, Austria.
 NIAST The National Institute of Agro-Environmental Sciences, Tsukuba, Japan.
 NSMT The National Science Museum, Tsukuba, Japan.
 OXUM Hope Entomological Collections, University Museum, Oxford, U.K.
 SKYC Seiki Yamane Collection, Kagoshima, Japan.
 THNHM Natural History Museum of the National Science Museum, Thailand.
 UMS 'BORNEENSIS', Universiti Malaysia Sabah, Sabah, Malaysia.
 IEBR Institute of Ecology and Biological Resources, Vietnam.

Observations

Most morphological observations were made with a Nikon SMZ1000 stereoscope. Multi-focused montage images were produced using Helicon Focus 4.75 Pro from a series of source images taken by a Nikon EOS Kiss×4 digital

camera attached to a Nikon ECLIPSE E600 microscope. When fine hairs and other parts which were not recognized automatically were found, the focused parts from the source images were copied to the montage image using the retouching function of Helicon Focus. Artifacts (ghost images) and unnecessary parts (unfocused appendages, etc.) surrounding or covering target objects were erased and cleaned up using the retouching function of Helicon Focus. Finally, the background was cleaned up, and the color balance, contrast and sharpness were adjusted using Adobe Photoshop Elements 7.

Measurements and indices

Workers of each species were measured for the following parts (Fig. 1) using a micrometer, representing to the second decimal place.

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

- | | |
|----|---|
| CI | Cephalic index, $HW/HL \times 100$. |
| HL | Maximum head length in full-face view, measured from the anterior clypeal margin to the midpoint of a line drawn across the posterior margin of head. |
| HW | Maximum head width in full-face view. |
| ML | Mesosomal length measured from the point at which the pronotum meets the cervical shield to the posterior margin of metapleuron in profile. |
| PL | Petiole length measured from the anterior margin of the peduncle to the posteriormost point of tergite. |
| SI | Scape index, $SL/HW \times 100$. |
| SL | Scape length excluding the basal constriction and condylar bulb. |
| TL | Total length, roughly measured from the anterior margin of head to the tip of gaster in stretched specimens. |

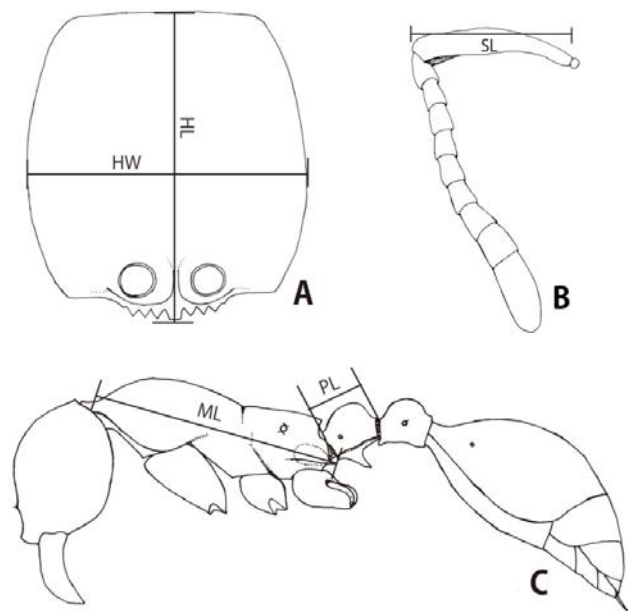


Figure 1. Measuring points. A, head in full-face view; B, antenna; C, Habitus in profile.

The general terminology in the worker caste follows Hölldobler and Wilson (1990), and Bolton (1994). For the important characters in the genus *Aenictus* used in this paper, see Jaitrong and Yamane (2011).

SYSTEMATICS

Aenictus Shuckard, 1840

Aenictus Shuckard, 1840: 266. Type-species:

Aenictus ambiguus, by original designation.

Based on the male sex.

Typhlatta Smith, 1857: 79. Type-species:

Typhlatta laeviceps, by monotypy. Based on the worker caste.

Paraenictus Wheeler, 1929: 27 (as subgenus of

Aenictus). Type-species: *Aenictus (Paraenictus) silvestrii*. Based on the worker caste.

Worker diagnosis. For a more extensive description of the worker caste of the genus, see Bolton (1994). Some of the important characteristics are here reproduced with slight modification. Clypeus reduced, narrow

from front to back. Antenna 8-10 segmented; antennal socket horizontal, in the plane of transverse axis of head, exposed in full-face view, and located very close to anterior margin of clypeus. Mandible various in shape from triangular, subtriangular to linear. Frontal lobe absent; narrow vertical carinae (sometimes very short) present between the antennal sockets. Eye absent. Promesonotal suture absent; pronotum and mesonotum fused together. Metapleural gland orifice located in lower posterior corner of metapleuron, opening laterally; the orifice concealed behind a ventrally directed cuticular flange. Propodeal lobe present. Metatibial gland present. Waist composed of two separated segments, petiole and postpetiole (= abdominal segments 2 and 3). Petiole sessile to subsessile with tergite and sternite not fused; sternite of petiole with simple posterior margin and simple articulation to postpetiole. Postpetiole with tergosternal fusion; tergite and sternite of the following abdominal segments (= gastral segments 1-4) not fused. Gastral segment 1

with presclerites sharply defined and differentiated from postsclerites, the former fitting tightly within the narrow posterior end of postpetiole; gastral segment 1 immediately behind presclerites constricted into a narrow neck. Propodeal spiracle situated high on side of sclerite and far forward, not subtended by endophragmal pit or a longitudinal impression; spiracle on side of postpetiole situated at or usually behind midlength of the segment; gastral spiracles 2-4 (= abdominal spiracles 5-7) shifted backwards, not concealed by posterior margins of preceding segments and visible without distension of abdomen.

Check list of Thai species

***Aenictus ceylonicus* species group [10 species]**

- Aenictus concavus* Jaitrong et Yamane, 2013
Aenictus cylindripetiolus Jaitrong et Yamane, 2013
Aenictus fuchuanensis Zhou, 2001
Aenictus khaoyaiensis Jaitrong et Yamane, 2013
Aenictus maneerati Jaitrong et Yamane, 2013
Aenictus pinkaewi Jaitrong et Yamane, 2013
Aenictus thailandianus Terayama et Kubota, 1993
Aenictus watanasiti Jaitrong et Yamane, 2013
Aenictus wilaiiae Jaitrong et Yamane, 2013
Aenictus wiwatwitayai Jaitrong et Yamane, 2013

***Aenictus currax* species group [3 species]**

- Aenictus cornutus* Forel, 1900
Aenictus gracilis Emery, 1893
= *Aenictus martini* Forel, 1901
= *Aenictus martini* var. *boelianensis* Forel, 1913
Aenictus parahuonicus Jaitrong et Yamane, 2011

***Aenictus hottai* species group [1 species]**

- Aenictus hottai* Terayama et Yamane, 1989

***Aenictus javanus* species group [4 species]**

- Aenictus doydeei* Jaitrong et Yamane, 2011
Aenictus duengkai Jaitrong et Yamane, 2012
Aenictus longinodus Jaitrong et Yamane, 2012
Aenictus nishimurai Terayama et Kubota, 1993

***Aenictus laeviceps* species group [6 species]**

- Aenictus binghami* Forel, 1900
= *Aenictus (Typhlatta) binghami* var. *gatesi* Wheeler, 1927
Aenictus fulvus Jaitrong et Yamane, 2011
Aenictus hodgsoni Forel, 1900
Aenictus laeviceps (F. Smith, 1858)
= *Eciton (Aenictus) fergusonii* var. *sundaica* Karavaiev, 1927
Aenictus siamensis Jaitrong et Yamane, 2011
Aenictus sonchaengi Jaitrong et Yamane, 2011

***Aenictus leptotyphlatta* species group [1 species]**

- Aenictus leptotyphlatta* Jaitrong et Eguchi, 2010

***Aenictus minutulus* species group [2 species]**

- Aenictus changmaianus* Terayama et Kubota, 1993
Aenictus minutulus Terayama et Yamane, 1989

***Aenictus pachycerus* species group [2 species]**

- Aentatus dentatus* Forel, 1911
Aenictus paradentatus Jaitrong et Yamane, 2012

***Aenictus silvestrii* species group [1 species]**

- Aenictus jarujini* Jaitrong et Yamane, 2010

***Aenictus wroughtonii* species group [4 species]**

- Aenictus artipus* Wilson, 1964
Aenictus camposi Wheeler et Chapman, 1925
Aenictus stenocephalus Jaitrong et Yamane, 2010
Aenictus vieti Jaitrong et Yamane, 2010

Species groups of Thai *Aenictus*

***Aenictus ceylonicus* group.** Jaitrong and Yamane (2013) defined this species group as follows: antenna 10-segmented; scape extending beyond half of head length, but not reaching the occipital corner of head in full-face view; mandible linear; its basal and external margins almost parallel; masticatory margin with large apical tooth followed by medium-sized subapical tooth; between subapical tooth and basal tooth 0-6 small denticles present; with mandibles closed, a gap present between mandibles and anterior margin of clypeus; anterior clypeal margin weakly concave or almost straight, lacking denticles; frontal carina short and thin reaching or a little extending beyond level of posterior margin of torulus; curved anterior extension of frontal carina reaching or extending beyond level of anterior clypeal margin in full-face view; parafrontal ridge absent; promesonotum usually convex dorsally and sloping gradually to propodeum; subpetiolar process developed.

Head and first gastral tergite smooth and shiny. Body yellowish, reddish or dark brown; typhlatta spot absent.

Remarks. The *A. ceylonicus* group is a unique group easily separated from the other groups by the following characteristics: mandible linear; a gap present between mandibles and anterior margin of clypeus when mandibles are closed; anterior clypeal margin almost straight or feebly concave, lacking denticles.

***Aenictus currax* group.** Jaitrong and Yamane (2011) defined this species group as follows: head in full-face view with occipital corner convex, with a distinct protuberance on occipital corner, which gives the head a unique “horned” appearance; occipital margin forming a carina. Antenna 10-segmented; anterior clypeal margin roundly convex, lacking denticles; mandible subtriangular; its masticatory margin with a large apical tooth

followed by a medium-sized subapical tooth, and 4-6 denticles; frontal carina short, a little extending beyond posterior margin of torulus; parafrontal ridge feeble and incomplete or almost absent; with mesosoma in profile promesonotum convex dorsally and sloping gradually to metanotal groove; legs slender; subpetiolar process present; its anteroventral corner always angular, and directed forward and downward.

Head and first gastral segment entirely smooth and shiny. Body black, dark brown to reddish brown; typhlatta spot present, always located at occipital corner of head.

Remarks. This species group is closely related to the *A. leptotyphlatta* group and *A. laeviceps* group, all bearing typhlatta spots on the worker head, and also sharing the black or dark brown to reddish brown body, and entirely smooth and shiny head (Jaitrong and Eguchi, 2010). *A. currax* group is distinguished from the latter two by the following characteristics: anterior clypeal margin roundly convex, lacking denticles; head in full-face view with occipital corner convex, with a distinct protuberance, which gives the head a unique “horned” appearance; in profile “typhlatta spot” always located at occipital corner; subpetiolar process present, triangular with the apex always directed forward and downward.

***Aenictus hottai* group.** Jaitrong and Yamane (2011) and Wiwatwitaya and Jaitrong (2011) defined this species group as follows: antenna long, consisting of 10 segments; scape long reaching posterolateral corner of head; anterior clypeal margin roundly convex, lacking denticles; mandible subtriangular, with very dense punctures; its masticatory margin with a large and sharp apical tooth followed by a medium-sized subapical tooth and 18-20 small inconspicuous denticles; frontal carina not reaching midlength of head, well developed anteriorly and poorly developed posteriorly; parafrontal ridge

not reaching midlength of head, seen in profile well developed and raised as a subtriangular process in anteriormost part, and poorly developed posteriorly; occipital margin of head forming a collar or carina; propodeal junction angulated; declivity of propodeum concave, encircled with a rim; subpetiolar process well developed, posteroventrally produced.

Head, mesosoma, petiole and postpetiole entirely very densely puncto-reticulate and opaque. Puncto-reticulation on antennal scape, coxae, femora, tibiae, and basitarsi similarly dense but weaker. First gastral segment densely with weaker and superficial micropunctuation, subopaque and slightly shining. Body dark brown to reddish brown; typhlatta spot absent.

Remarks. This species group is closely related to the *A. pachycerus* group and *A. philippinensis* group, all having the developed frontal carina and parafrontal ridge. The *A. hottai* group is separated from the others by the first gastral segment densely micropunctate, subopaque and slightly shining, and the well-developed subpetiolar process posteroventrally produced (in the other groups the first gastral segment is smooth and shiny).

***Aenictus javanus* group.** Jaitrong and Yamane (2012) defined this species group as follows: head in full-face view with occipital corner convex; occipital margin lacking collar; antenna 10-segmented; antennal scape short extending only half length of head; anterior clypeal margin roundly convex bearing 6-10 denticles; mandible subtriangular, masticatory margin with 3 teeth including large apical tooth; frontal carina short, not extending beyond level of posterior margin of torulus; parafrontal ridge absent; mesosoma in profile with dorsal margin almost flat; dorsal face of mesosoma meeting with lateral face at a right angle; propodeal junction angulated; propodeal declivity encircled with

a thin rim; subpetiolar process developed and triangular or subrectangular.

Head and first gastral segment entirely smooth and shiny except base of gastral tergite I and sternite I that have dense small punctures. Body reddish brown to yellowish brown; typhlatta spot absent.

Remarks. This is a group of relatively small ants measuring 1.38-3.40 mm in total length. It is similar to the *A. minutulus* group (= *A. piercei* group in Jaitrong and Yamane 2011) in terms of body size and coloration, but in the former the anterior clypeal margin has several denticles, while it lacks denticles in the latter.

A size variation exists among the specimens of single colonies. There is a general tendency that smaller specimens have a much weaker punctuation, more elongate head and shorter antennal scape than in larger specimens.

***Aenictus laeviceps* group.** Jaitrong and Yamane (2011) defined this species group as follows: head in full-face view with occipital corner rounded; occipital margin forming a carina; antenna 10-segmented; antennal scape relatively long, usually attaining posterior corner of head; anterior clypeal margin roundly convex, bearing 5-12 denticles; mandible subtriangular; its masticatory margin with a large apical tooth followed by a medium-sized subapical tooth and 5-8 denticles; frontal carina short, extending slightly beyond posterior margin of torulus; parafrontal ridge feeble and incomplete or almost absent; with mesosoma in profile promesonotum convex dorsally and sloping gradually to metanotal groove; legs slender; subpetiolar process well developed, triangular; its apex usually directed backward and downward.

Head and first gastral segment entirely smooth and shiny. Body black, dark brown to reddish brown; typhlatta spot present, usually located anterior to occipital corner.

Remarks. The *A. laeviceps* group is closely related to the *A. currax* and *A. leptotyphlatta*

groups (see Jaitrong and Yamane, 2011). It is distinguished from the latter two by the following characteristics: anterior clypeal margin roundly convex with several denticles; head in full-face view with occipital corner rounded; in profile typhlatta spot usually located anterior to occipital corner; subpetiolar process well developed, with the apex directed downward and backward.

***Aenictus leptotyphlatta* group.** Jaitrong and Yamane (2011) defined this species group as follows: head in full-face view with occipital corner rounded; occipital margin lacking collar; antenna 10-segmented; antennal scape short, reaching or extending slightly beyond midlength of head; anterior margin of clypeus slightly convex medially, lacking denticles; mandible subtriangular; its masticatory margin with a large apical tooth followed by 4-5 relatively large teeth; frontal carina short and thin, extending posteriad, not beyond level of posterior margin of torulus; anterior curved extension of frontal carina reaching or extending beyond level of anterior clypeal margin; with mesosoma in profile promesonotum weakly convex dorsally and sloping gradually to propodeum; legs slender; subpetiolar process well developed, triangular, with its apex directed downward.

Head and first gastral segment entirely smooth and shiny. Body black to dark brown; typhlatta spot present but not clear.

Remarks. The *A. leptotyphlatta* group is closely related to the *A. currax* group and *A. laeviceps* group (see under *A. currax* group). It exhibits conditions intermediate between the *A. currax* group and *A. laeviceps* group. The anterior clypeal margin lacks denticles as in the *A. currax* group, but the occipital corner of the head is similar to that of the *A. laeviceps* group. Furthermore the typhlatta spot is less clearly demarcated from the background, and much paler in coloration than in the other typhlatta-bearing species groups.

***Aenictus minutulus* group** (*Aenictus piercei* group in Jaitrong and Yamane, 2011: 9). In the previous paper (Jaitrong and Hashimoto, 2012) this species group was defined as follows: head in full-face view with occipital corner convex, and posterior margin almost straight to shallowly and broadly concave; occipital margin lacking collar; antenna 10-segmented; antennal scape short reaching only midlength of head; anterior clypeal margin roundly convex, lacking denticles; mandible subtriangular; its masticatory margin with a large apical tooth, medium-sized subapical and basal teeth, and 2-6 denticles between them; basal margin of mandible with conspicuous denticles; frontal carina short; parafrontal ridge absent; with mesosoma in profile promesonotum convex dorsally and sloping gradually to propodeum; metapleural groove present or absent (mesonotum and propodeum fused); propodeal junction angulated; subpetiolar process well developed, triangular or subrectangular.

Head and first gastral segment entirely smooth and shiny. Body yellowish brown to reddish brown; typhlatta spot absent.

Size variation occurs among individuals from single colonies.

Remarks. This is a group of rather small species, measuring 1.80-3.20 mm in total body length. It is most similar to the *A. javanus* group. See under *A. javanus* group for details.

***Aenictus pachycerus* group.** Jaitrong and Yamane (2011) defined this species group as follows: antenna long, consisting of 10 segments; scape long, reaching or extending beyond posterolateral corner of head; anterior clypeal margin roundly convex in the middle, lacking denticles; mandible triangular, with very dense punctures; its masticatory margin with a large and sharp apical tooth followed by 4-12 small inconspicuous denticles, which gradually reduce in size toward basal angle of mandible; frontal carinae fused at level of antennal base to form a single carina,

extending less than half length of head, and well developed anteriorly and poorly developed posteriorly; parafrontal ridge present, reaching less than half length of head; seen in profile its anteriormost part well developed and raised as a subtriangular process; occipital margin forming a collar or carina; promesonotum distinctly convex or very weakly convex dorsally and sloping gradually to propodeum; propodeal junction angulated; declivity of propodeum concave, encircled with a rim; subpetiolar process weakly developed.

Head entirely sculptured, or smooth and shiny. Petiole and postpetiole densely punctate in at least Thai species. First gastral segment entirely smooth and shiny, or superficially shagreened, except base of tergite and sternite that has dense small punctures. Body black, dark or reddish brown to light or yellowish brown; typhlatta spot absent.

Remarks. The *A. pachycerus* group consists of relatively large species in terms of body length (TL 3.20-4.65 mm). Wilson (1964) and Jaitrong and Yamane (2011) pointed out that this group is closely related to the *A. philippinensis* group but can be distinguished from the latter by the mesonotum not visibly demarcated from the mesopleuron, and the metanotal groove almost absent or indistinct (mesopleuron clearly demarcated from metapleuron by a deep groove and from promesonotum by a distinct carina and metanotal groove relatively deep and distinct in the *A. philippinensis* group). This species group is also related to the *A. hottai* group in having developed frontal carinae and parafrontal ridges. See also under the *A. hottai* group (see Jaitrong and Yamane 2011).

***Aenictus silvestrii* group.** Jaitrong and Yamane (2011) defined this species group as follows: antenna thick, consisting of only 8 or 9 segments; scape somewhat flattened, broadened apically and strongly grooved

below; anterior clypeal margin roundly convex in the middle, without denticles; mandible triangular, with very dense small punctures; its masticatory margin with inconspicuous denticles in addition to sharp apical tooth; frontal carinae fused at level of antennal base to form a single carina; parafrontal ridge absent; occipital margin forming a narrow collar; declivity of propodeum concave, encircled with a rim; subpetiolar process weakly to well developed; legs relatively short, with apical half of tibia weakly and of femur strongly broadened and somewhat flattened.

Head entirely sculptured but in one species smooth. Gastral segment I entirely smooth and shiny except base of tergite I and sternite I that has dense small punctures; the punctured area usually dark colored. Head and mesosoma yellowish, reddish or dark brown; gaster paler, usually yellow; typhlatta spot absent.

Remarks. This is a unique group, which has antennae with less than 10 segments. The groove on the ventral face of scape, which is strongly flattened, and the enlarged femora of the legs are also useful to recognize this group.

***Aenictus wroughtonii* group.** Jaitrong and Yamane (2011) defined this species group as follows: head narrow; occipital margin lacking collar; antenna long, consisting of 10 segments, with a strikingly long scape attaining or extending beyond posterolateral corner of head; anterior clypeal margin roundly convex with 5-10 denticles; mandible triangular, with masticatory margin bearing 8-12 minute inconspicuous denticles in addition to large apical tooth with sharp apex; basal margin of mandible lacking denticles; frontal carina short; parafrontal ridge feeble and incomplete; mesosoma narrow and elongate; legs very slender; subpetiolar process weakly developed or almost absent.

Head and gaster entirely smooth and shiny. Almost entire body clear yellow to yellowish brown; typhlatta spot absent.

Remarks. This species group is separated from the other groups by the following characteristics: yellowish and slender body; long antennal scape, usually attaining or extending

beyond posterolateral corner of head; anterior clypeal margin roundly convex with several denticles. In general appearance, the species of *A. wroughtonii* group is similar to the smallest worker of *A. inflatus* (see Yamane and Hashimoto, 1999).

Key to Thai species based on the worker caste

- 1 Antenna 9-segmented. *A. silvestrii* group..... *A. jarujini*
- Antenna 10-segmented. 2
- 2 Anterior clypeal margin with denticles. 3
- Anterior clypeal margin lacking denticles. 16
- 3 Typhlatta spot present; body black, dark brown to reddish brown. *A. laeviceps* group..... 4
- Typhlatta spot absent; body yellow to yellowish brown. 9
- 4 Pronotum extensively sculptured; sculpture may be very superficial or represented by dense punctation.5
- Pronotum smooth and shiny, only in anteriormost portion finely punctate..... 6
- 5 Entire pronotum finely and densely reticulate and opaque; larger species (HW 0.90-0.95).
- *A. binghami*
- Pronotum very superficially reticulate and somewhat shiny (dorsum almost smooth); smaller species (HW 0.63-0.70). *A. siamensis*
- 6 Vertex with only two long standing hairs. 7
- Vertex with some shorter standing hairs in addition to two long hairs. 8
- 7 Promesonotum with more than 4 standing hairs mixed with short hairs over the surface; dorsum of propodeum with several short hairs. *A. sonchaengi*
- Promesonotum without standing hairs; dorsum of propodeum without hairs. *A. laeviceps*
- 8 Mesopleuron in at least lower portion smooth and shiny. *A. fulvus*.
- Mesopleuron entirely densely sculptured. *A. hodgsoni*
- 9 Mandible subtriangular; masticatory margin with 3 teeth including large apical tooth.
- *A. javanus* group..... 10
- Mandible triangular; masticatory margin with 9-12 teeth including large apical tooth.
- *A. wroughtonii* group..... 13
- 10 Basal margin of mandible with a distinct denticle behind large basal tooth (Fig. 2B); smaller species (HW 0.25-0.38 mm). *A. duengkai*
- Basal margin of mandible lacking denticle (Figs 23B, 26B); larger species (HW 0.40-0.65 mm). 11
- 11 Petiole distinctly longer than high; postpetiole almost as long as petiole (Fig. 23A).
- *A. longinodus*
- Petiole almost as long as high; postpetiole slightly larger than petiole (Figs 12A, 26A).12
- 12 Lateral face of pronotum reticulated; reticulae with smooth bottoms (Fig. 12A). *A. doydeei*
- Lateral face of pronotum smooth and shiny; sculpture if any very superficial (Fig. 26A).
- *A. nishimurai*
- 13 Propodeal junction rounded. *A. artipus*
- Propodeal junction angulated. 14
- 14 Ventral outline of subpetiolar process convex, anteroventrally not angulate. *A. camposi*
- Ventral outline of subpetiolar process convex or almost straight; its anteroventral corner angulate. 15
- 15 Ventral outline of subpetiolar process strongly convex in anterior half; mesonotum partly and propodeum almost entirely densely sculptured; pronotum clearly demarcated from mesonotum by a shallow transverse groove. *A. vieti*

- Ventral outline of subpetiolar process almost straight; entire mesonotum and propodeum smooth and shiny, at most with superficial sculpture; pronotum only weakly demarcated from mesonotum. *A. stenocephalus*
- 16 Anterior clypeal margin concave or almost straight; mandible linear; with mandibles closed a gap present between mandibles and anterior clypeal margin. *A. ceylonicus* group. 17
- Anterior clypeal margin convex; mandible triangular to subtriangular; with mandibles closed a gap absent between mandibles and anterior clypeal margin. 26
- 17 Mandible with 2-6 denticles between subapical and basal teeth (mandible with more than 4 teeth) (Fig. 2A). 18
- Mandible with 0-1 tooth or denticles between subapical and basal teeth (mandible with 3-4 teeth) (Fig. 2C-D). 21
- 18 Dorsal face of propodeum mostly smooth and shiny; lateral face of propodeum partly smooth and shiny; postpetiole entirely smooth and shiny; mesosoma almost flat dorsally or feebly convex. *A. wiwatwitayai*
- Propodeum entirely sculptured; postpetiole entirely sculptured or with smooth and shiny small area on dorsal face; promesonotum convex and sloping gradually to metanotal groove. 19
- 19 Promesonotum entirely sculptured (punctate or reticulate). 20
- Promesonotum largely smooth and shiny. *A. wilaiiae*
- 20 Promesonotum sparsely reticulate; reticulae with smooth and shiny bottoms (entire promesonotum looks shiny); antennal scape superficially shagreened; petiole cylindrical, clearly longer than high. *A. cylindripetiolus*
- Promesonotum densely punctate and mat; antennal scape micropunctate; petiole round, almost as long as high. *A. thailandianus*
- 21 Mandible with 3 teeth including apical and basal tooth (Fig. 2D). 22
- Mandible with 4 teeth including apical and basal tooth (Fig. 2C). 23
- 22 With head seen in profile occipital corner round; promesonotum in profile strongly convex and forming a dome (Fig. 35A); petiole almost as long as high, with high node, and almost as long as petiole. *A. watanasiti*
- With head seen in profile occipital corner bluntly angulated (almost right-angled) (Fig. 8A); promesonotum in profile with weakly convex or almost flat dorsal outline (Fig. 8A); petiole clearly longer than high, with low node, and slightly longer than petiole. *A. concavus*
- 23 Dorsal and lateral faces of pronotum largely smooth and shiny; petiole almost as long as high; head slightly longer than or almost as long as broad (CI 90-100). *A. khaoyaiensis*
- Dorsal and lateral faces of pronotum entirely sculptured (superficially puncto-reticulate, punctate to reticulate); petiole cylindrical, distinctly longer than high; head slightly shorter than broad (CI 102-112). 24
- 24 Subpetiolar process very low, with anterior and posterior downward-directed processes (Fig. 24A); head in full-face view rectangular, its posterior margin feebly concave (Fig. 24B). *A. maneerati*
- Subpetiolar process subrectangular or low, with its anteroventral corner acutely angulated and ventral outline straight or convex (Figs 14A, 29A); head in full-face view rectangular or round, its posterior margin weakly concave, almost straight or weakly convex (Figs 14B, 29B). 25
- 25 Pronotum entirely strongly punctate. *A. pinkaewi*
- Anterior portion of pronotum densely punctate, lateral face of pronotum finely reticulate. *A. fuchuanensis*
- 26 Typhlatta spot present; head entirely smooth and shiny. 27
- Typhlatta spot absent; head sculptured, or smooth and shiny. 30
- 27 Head in full-face view with occipital corner convex, with a distinct protuberance on occipital corner, which gives the head a unique "horned" appearance. *A. currax* group. 28
- Head in full-face view with occipital corner rounded, without lateral protuberance. *A. leptotyphlatta* group. .. *A. leptotyphlatta*

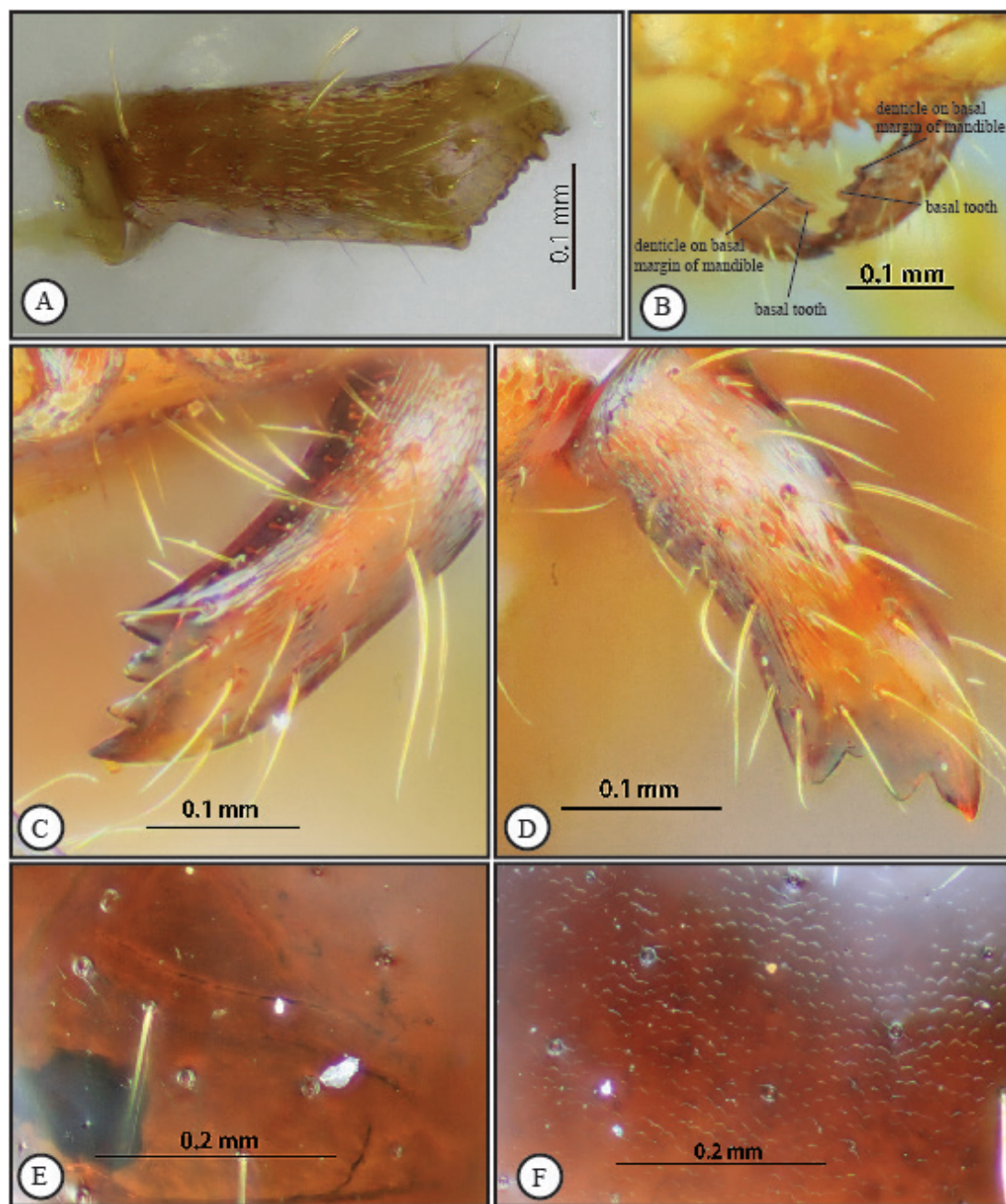


Figure 2. A, mandible with more than 4 teeth; B, mandibles and clypeus of *A. duengkaei*; C, mandible with 4 teeth; D, mandible with 3 teeth; E, first gastral tergite smooth and shiny; F, first gastral tergite superficially shagreened.

- 28 Pronotum anteriorly produced into a pair of horn-like protuberances. *A. cornutus*
 - Pronotum unarmed. 29
- 29 Propodeal and petiolar dorsum smooth and shiny; declivity of propodeum feebly convex, not encircled with a thin rim. *A. parahuonicus*
 - Entire propodeum and petiole with dense micropunctures; declivity of propodeum shallowly concave, and encircled with a thin rim. *A. gracilis*
- 30 Parafrontal ridge almost absent; head entirely smooth and shiny; smaller species (TL 1.7-2.4 mm, HW 0.33-0.48 mm). *A. minutulus* group. 31
 - Parafrontal ridge well developed; head entirely sculptured but rarely smooth; larger species (TL 4.40-5.00 mm, HW 0.72-1.00 mm). 32
- 31 Metapleural gland bulla relatively large; distance between propodeal spiracle and metapleural gland bulla shorter than or almost as long as spiracular diameter (Fig. 6D). *A. changmaianus*
 - Metapleural gland bulla relatively small; distance between propodeal spiracle and metapleural gland bulla clearly longer than spiracular diameter (Fig. 25D). *A. minutulus*
- 32 First gastral segment micropunctate; subpetiolar process well developed, with posteroventral corner produced posteriad. *A. hottai* group. *A. hottai*
 - First gastral segment clearly smooth and shiny or weakly shagreened with smooth and shiny interspaces; subpetiolar process weakly developed or almost absent. *A. pachycerus* group. 33
- 33 First gastral tergite superficially shagreened (Fig. 2F); antennal scape relatively shorter (SI 117-124). *A. paradentatus*
 - First gastral tergite smooth and shiny (Fig. 2E); antennal scape longer (SI 143-152). *A. dentatus*

***Aenictus artipus* Wilson**
 (Fig. 3A-D)

Aenictus artipus Wilson, 1964: 449, fig. 60;
 Bolton, 1995: 58; Jaitrong and Nabhitabhata,
 2005: 11; Jaitrong *et al.*, 2010: 36, figs 1, 2,
 16; Jaitrong, 2013: 338.

Types. Holotype and six paratype workers (MCZC, examined) from Siam [Thailand], Chiangmai [Chiang Mai], X.27.20.

Measurements (n = 10): TL 3.2-3.3 mm; HL 0.60-0.63 mm; HW 0.50-0.53 mm; SL 0.65-0.70 mm; ML 1.03-1.05 mm; MTL 0.65-0.68 mm; PL 0.25 mm; CI 80-84; SI 130-140.

Description of worker. Head in full-face view clearly longer than broad, with its sides slightly convex and posterior margin almost straight. Antenna 10-segmented; scape long, extending beyond posterolateral corner of head; antennal segments II-X each longer than broad; II as long as III or less; III as long as IV and V combined; VI shorter than II; VII as long as VI; VIII and IX combined as long

as terminal segment (X). Frontal carinae short, not reaching level of posterior margin of torulus. Clypeus short, with its anterior margin bearing 7-10 denticles. Mandible with apical tooth large and curved, followed by 10-12 minute teeth on masticatory margin. Mesosoma narrow and elongate; seen in profile pronotum convex dorsally; promesonotum sloping gradually to metanotal groove; propodeum slightly lower with its dorsal outline almost straight. Propodeal junction rounded; declivity of propodeum slightly convex. Petiole very narrow, seen from above almost parallel-sided, in profile slightly longer than high, rounded dorsally, with rather flat dorsal face; subpetiolar process weakly produced below; its anteroventral corner bluntly angulate; postpetiole slightly shorter than petiole, with its node elevated posteriorly.

Head and antennal scape smooth and shiny. Mesosoma almost entirely smooth and shiny except for upper portion of meso- and metapleura; a groove present between mesopleuron and metapleuron; area between

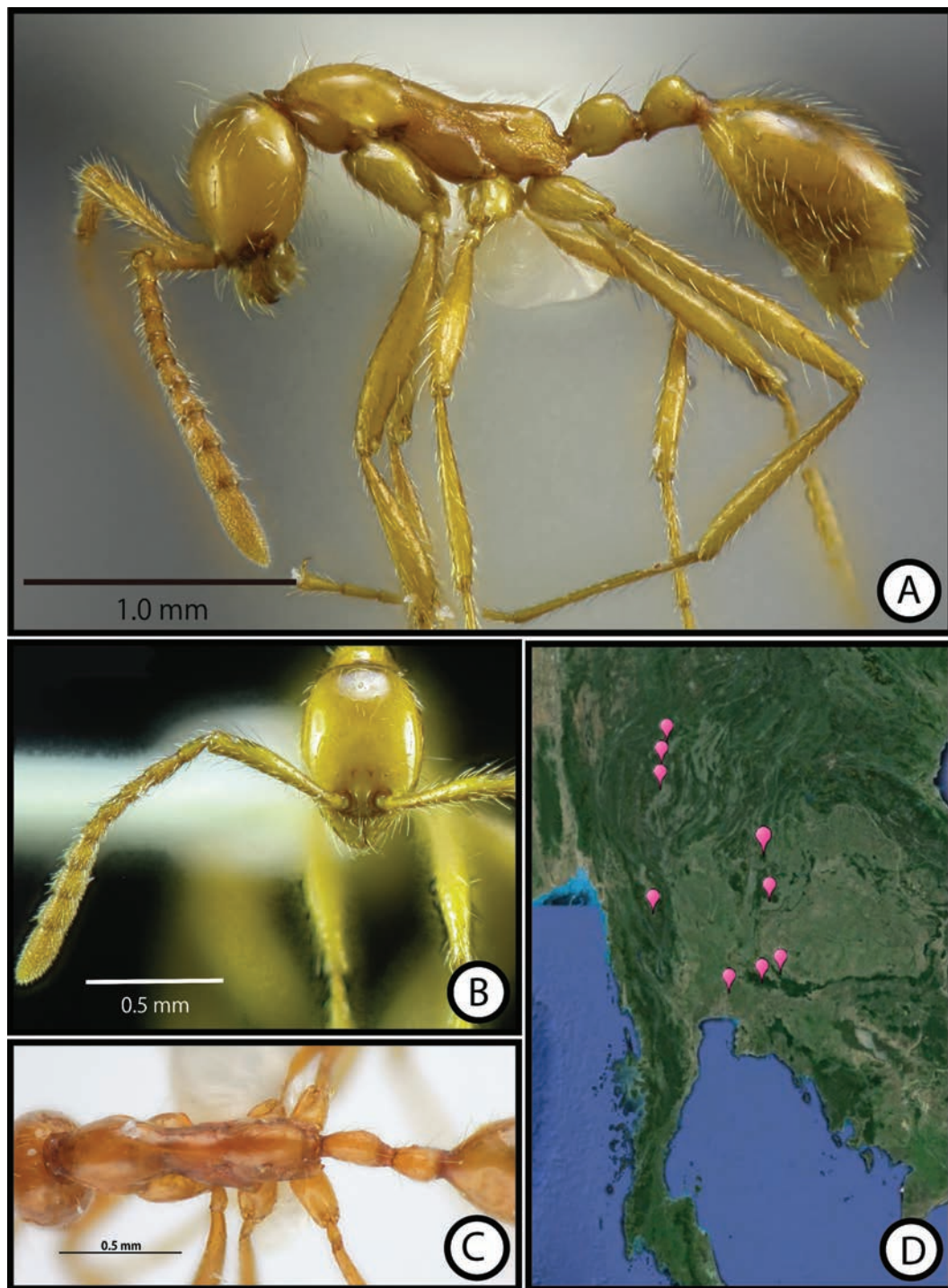


Figure 3. *Aenictus artipus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

propodeal spiracle and metapleural gland bulla with punctures and rugae.

Body with relatively sparse, obliquely standing hairs mixed with short hairs over the surface; longest pronotal hairs 0.13-0.15 mm long. Entire body deep yellow to pale brown, with mandible, antenna partly and legs paler.

Non-type materials examined. NORTHERN: Chiang Mai Prov., Doi Suthep-Pui N.P., ca. 800-900 m alt., 7 Jun. 2001, K. Eguchi leg., Eg01-TH-073 (SKYC, THNHM); same loc., Jul. 2008, S. Sonthichai leg., WJT08-TP03 (AMK, SKYC, THNHM); same loc., Feb. 2008, S. Sonthichai leg., WJT08-PT01 (AMK, SKYC, THNHM); Chiang Mai Prov., Doi Ang Khang, 12 Jul. 2000, W. Jaitrong leg., WJT00-AK01 (AMK, SKYC, THNHM); same loc., 13 Jul. 2000, W. Jaitrong leg., WJT00-TH50 (AMK, SKYC, THNHM); Chiang Mai, Doi Chiang Dao W.S. (500-600 m alt.), 2 Apr. 2005, Sk. Yamane leg., TH05-SKY-19 (SKYC, THNHM). WESTERN: Tak Prov., Umpang W.S., 15 Jul. 2005, W. Jaitrong leg., WJT05-N17 (SKYC, THNHM). NORTHEASTERN: Loei Prov., Phu Luang W.S., 800 m alt., S. Hasin leg., HS07-73; same loc., 11 May 2007, S. Hasin leg., SH07-TH1 (THNHM); Chaiyaphum Prov., Phu Khieo, Savanna forest, 5 Jul. 1998, D. Wiwatwitaya leg. (AMK, SKYC, THNHM); Nakhon Ratchasima Prov., Sakhaerat ERS., 19 Oct. 2005, W. Jaitrong leg., THNHM-I05-3427 (AMK, SKYC, THNHM); same loc., dry evergreen forest, 16 Sep. 2001, W. Jaitrong leg., WJT01-TH19 (AMK, SKYC, THNHM). EASTERN: Prachenburi Prov., Khao Yai N.P., hill evergreen forest, 25 Mar. 2000, W. Jaitrong leg. (SKYC, THNHM).

Distribution. Vietnam (Jaitrong *et al.*, 2010) and Thailand (Fig. 3D).

Bionomics. *Aenictus artipus* mainly inhabits forests located in continental Southeast Asia. This species has been collected in various habitats such as hill evergreen forest, savanna forest, evergreen forest, disturbed forest and agricultural area located near natural seasonal

forest. Jaitrong and Wiwatwitaya (2006) found *A. artipus* (referred to as *Aenictus* sp. C) only in the highland (more than 800 m alt.), while Jaitrong *et al.* (2010) reported that it is occasionally collected also in the lowland (200-500 m alt.). Most colonies of this ant were collected from foraging columns on the forest floor. The single exception was the colony that was collected from a bivouac found under a stone in a dry evergreen forest in the Sakharat Ecological Research Station (NE. Thailand) in October (winter). The colony contained larvae but no pupa. So far I have no information about the prey.

Remarks. This species is closely related to *Aenictus sagei* Forel and *Aenictus wroughtonii* Forel, all sharing the rounded propodeal junction and smooth and shiny body over the surface. *A. artipus*, however, is distinguished from the latter two by the subpetiolar process with clearly angulated anteroventral corner and denser punctuation in the upper portion of meso- and metapleura (see Jaitrong *et al.*, 2010).

Aenictus binghami Forel

(Fig. 4A-D)

Aenictus binghaniri (sic) Forel, 1900: 76.

Aenictus binghami Forel: Bingham, 1903: 19; Wilson, 1964: 450, figs 69-71; Bolton, 1995: 59; Jaitrong and Nabhitabhata, 2005: 11; Jaitrong and Yamane, 2011: 25, figs 33-34; Jaitrong, 2013: 338.

Aenictus (Typhlatta) binghami var. *gatesi* Wheeler, 1927: 42 (synonymized by Wilson, 1964: 450).

Types. *Aenictus binghami*: Lectotype and five paralectotype workers from Burma, Assam (MHNG, examined).

Measurements. Worker (n = 10): TL 4.85-5.05 mm; HL 0.98-1.03 mm; HW 0.90-0.95 mm; SL 0.93-0.95 mm; ML 1.63-1.73 mm; PL 0.35-0.38 mm CI 88-95; SI 100-105.

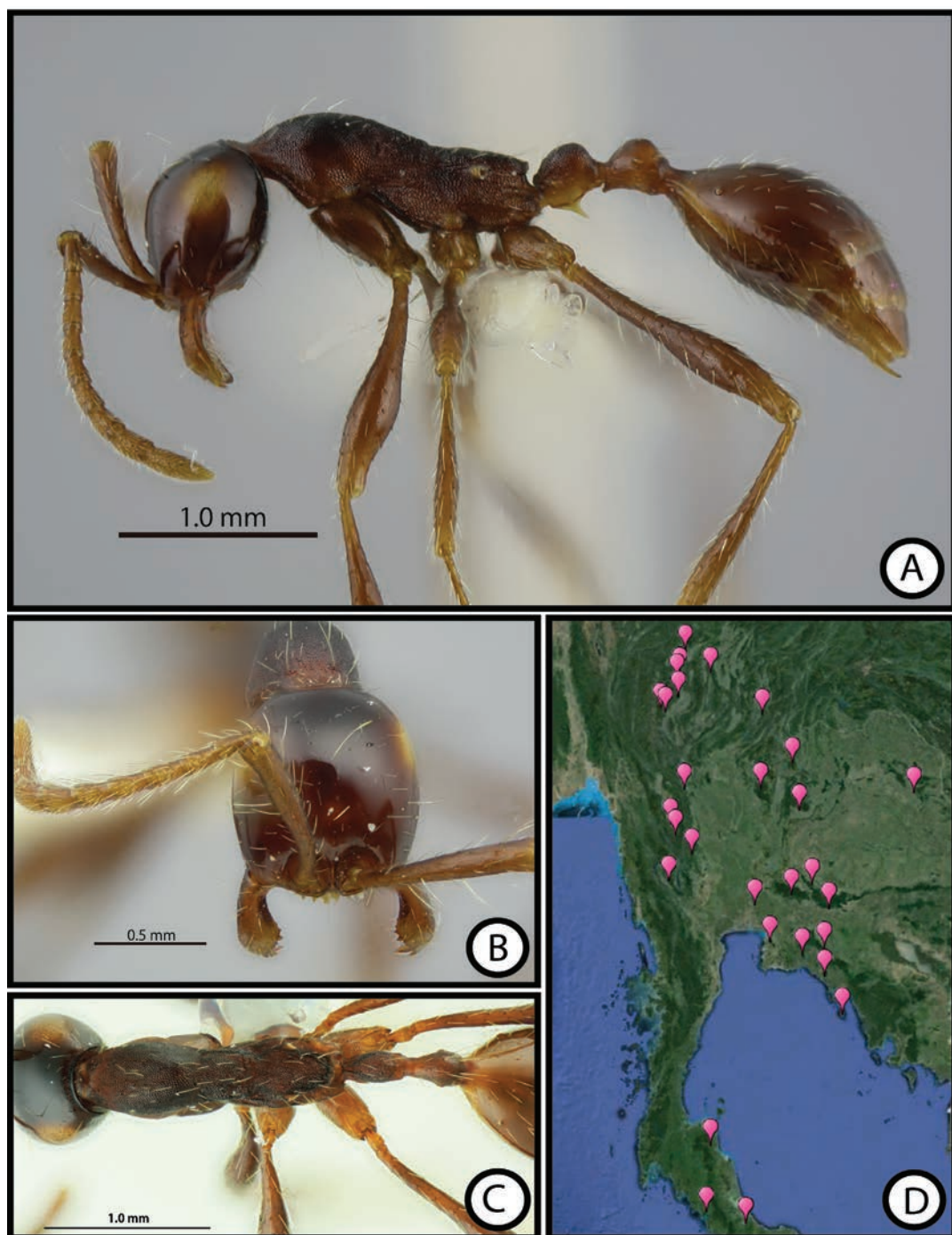


Figure 4. *Aenictus binghami*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Description of worker. Head in full-face view slightly longer than broad, with sides convex and posterior margin almost straight; occipital margin bearing a carina. Antenna 10-segmented; scape relatively long, but not reaching the posterolateral corner of head; antennal segments II-X each longer than broad; II almost as long as each of III-IV. Frontal carina short, slightly extending beyond level of posterior margin of torulus. Parafrontal ridge almost absent or very weak. Anterior margin of clypeus convex, bearing 6-7 denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth, 6-7 denticles, and a medium-sized basal tooth; basal margin sinuate with a series of 3-4 ill-defined denticles. Promesonotum in profile convex dorsally and sloping gradually to metanotal groove; propodeum in profile with its dorsal outline almost straight or feebly convex; propodeal junction obtusely angulated; declivity of propodeum shallowly concave, encircled with a rim. Petiole distinctly longer than high, elevated posteriorly; subpetiolar process well developed and triangular, its apex directed downward and backward; postpetiole almost as long as petiole, with its node convex dorsally.

Head entirely smooth and shiny. Antennal scape microreticulate and subopaque, slightly shining. Mesosoma entirely microreticulate and opaque, except for a very small patch on pronotum which is feebly shiny; reticular diameters on pronotum larger than elsewhere. In addition, mesonotum bearing a few irregular longitudinal rugae. Petiole punctate and opaque; postpetiolar dorsum smooth and shiny; lateral face shagreened with smooth and shiny interspaces. Femora entirely microreticulate except for basal portion micropunctate; tibiae microreticulate.

Head with some short standing hairs in addition to two long hairs; mesosoma with relatively sparse standing hairs mixed with sparse suberect short hairs over the surface;

longest pronotal hairs 0.20-0.25 mm long. Entire body dark reddish-brown. Typhlatta spot located anterior to occipital corner.

Non-type material examined. NORTHERN: Chiang Mai Prov., Doi Ang Khang, 17 Aug. 2001, R. Phoonjampa leg. THNHM-I2002-3277 (THNHM); Chiang Mai Prov., Doi Suthep-Pui, Secondary forest, Pitfall trap, Jul. 2008, S. Sonthichai leg., WJT08-10 (AMK, SKYC, THNHM); Chiang Mai, Chom Thong Dist., 750 m alt., 20 Aug. 1998, Sk., Yamane leg., TH98-SKY-26 (SKYC); same loc., 26 Jun. 2013, W. Jaitrong leg., WJT260613-1 (THNHM); Chiang Mai Prov., Mae Tang Dist., Haui Prachao, HEF, 6 Sep. 2000, W. Jaitrong leg., WJT00-HPC01 (AMK, SKYC, THNHM); Chiang Mai Prov., Doi Chiang Dao, 9 Jun. 2001, K. Eguchi leg., Eg01-TH-149 (SKYC); same loc., 3 Apr. 2005, Sk. Yamane leg., TH05-SKY-71 (SKYC); same loc., 28 Nov. 2013, W. Jaitrong leg., WJT281113-3 (THNHM); same loc., 28 Nov. 2013, W. Jaitrong leg., WJT281113-2 (THNHM); Chiang Mai Prov., Mae Ai Dist., Doi Luang, 7 Jul. 2008, S. Makchay leg. (THNHM); Nan Prov., Sri Nan, MDF, 30 Nov. 2006, N. Chantarasawat leg., THNHM-I2007-1858 (THNHM); same loc., 30 Nov. 2006, N. Chantarasawat leg. (THNHM). WEASTERN: Tak Prov., Umphang Dist., 4 Jan. 1999, W. Jaitrong leg. (AMK, SKYC, THNHM); same loc., 23 May 1999, W. Jaitrong leg. (THNHM); same loc., 22 Sep. 2014, W. Jaitrong leg., WJT220914-15 (THNHM); same loc., Doi Hur Mud, 26 Sep. 2014, W. Jaitrong leg., WJT260914-6 (THNHM); same loc., 27 Jan. 2015, W. Jaitrong leg., TH15-WJT-108 (THNHM); Tak Prov., Wang Chao Dist., Chiang Thong Plantation, 20 Jun. 2014, W. Jaitrong leg., WJT200614-1 (THNHM); Kanchanaburi Prov., Maeklong Watershed Research Station, 29 Nov. 2003, Sk., Yamane leg., TH03-SKY-144 (SKYC). NORTHEASTERN: Pitsanulok Prov., Phu Soi Dao, 8 Jul. 2006, D. Wiwatwitaya leg., DW080706-1 (THNHM); Pitsanulok Prov., Thung Salang Luang, 17 Sep. 1997, W. Jaitrong leg., WJT97-TSSL02

(AMK, SKYC, THNHM); same loc., Savanna forest, 15 May 1998, W. Jaitrong leg., THNHM-I2002-3278 (AMK, THNHM); Mukdahan Prov., Kheang Chang Niam Village, 4 Sep. 2007, W. Jaitrong leg., WJT07-TH2141 (THNHM); same loc., 3 Sep. 2007, W. Jaitrong leg., WJT07-TH2144 (THNHM); same loc., 3 Sep. 2007, W. Jaitrong leg., WJT2149 (THNHM); same loc., 8 Jun. 2007, W. Jaitrong leg., WJT07-TH1084 (THNHM); Kalasil Prov., Phu Meui, 5 Sep. 2007, W. Jaitrong leg., WJT07-TH2097 (THNHM); same loc., 6-10 Jun. 2007, W. Jaitrong leg., WJT07-TH1056 (THNHM); Loei Prov., Phu Luang, 14 May 2007, S. Hasin leg., SH07-TH-35 (AMK, SKYC, THNHM); same loc., 11 Apr. 2008, W. Jaitrong leg., WJT08-PL03 (AMK, SKYC, THNHM); same loc., 11 Apr. 2008, W. Jaitrong leg., WJT08-TH802 (THNHM); same loc., 10 Apr. 2008, P. Kosonpanyapiwat leg., PPK08-TH100 (THNHM); Chaiyaphum Prov., Phu Kheao, 30 Jan. 1999, W. Jaitrong leg., WJT99-TH069 (AMK, SKYC, THNHM); same loc., Agriculture Area, 30 Jan. 1999, W. Jaitrong leg., WJT99-TH050 (AMK, SKYC, THNHM); Nakhon Ratchasima Prov., Sakhaerat, 17 Apr. 2001, W. Jaitrong leg., WJT01-DC01 (AMK, SKYC, THNHM); same loc., 15 Sep. 2001, W. Jaitrong leg., WJT01-TH29 (AMK, SKYC, THNHM); same loc., 13 Sep. 2000, W. Jaitrong leg., WJT00-SKR01 (AMK, SKYC, THNHM); Nakhon Ratchasima Prov., Wang Nam Kheao Dist., 16 Aug. 2009, W. Jaitrong leg., WJT09-TH2211 (AMK, SKYC, THNHM). **CENTRAL:** Uthaithani Prov., Ban Rai Dist., 23 Sep. 2014, W. Jaitrong leg., WJT230914-24 (THNHM); Petchaburi Prov., Kang Krachan, EF, 26 Dec. 2007, I. Chama leg. (GC, THNHM). **EASTERN:** Sakheao Prov., Pang Sida, 29 May 2006, W. Jaitrong leg., E06-WJT-381 (THNHM); Rayong Prov., Klaeng Dist., Khao Chamao-Khao Wong, 20 May 2008, W. Jaitrong leg., WJT08-E 215

(THNHM); Chanthaburi Prov., Pheao, EF, 22 Nov. 2003, S. Hasin leg., WJT03-21 (AMK, SKYC, THNHM); Chachoengsao Prov., Khao Ang Reu Nai, 19 Nov. 2003, W. Jaitrong leg., WJT03-TH300 (SKYC, THNHM); same loc., 26 Nov. 2004, W. Jaitrong leg., WJT04-TH299 (AMK, SKYC, THNHM); same loc., DEF, 20 Aug. 2003, W. Jaitrong leg., WJT03-TH-02 (AMK, SKYC, THNHM); same loc., Lumchangwat, 27 Oct. 2002, W. Jaitrong leg., THNHM-I03-3431 (AMK, SKYC, THNHM); same loc., 20 Aug. 2003, W. Jaitrong leg., THNHM-I03-3567 (THNHM); same loc., 27 Oct. 2002, W. Jaitrong leg., THNHM-I03-3494 (AMK, SKYC, THNHM); same loc., 28 Jun. 2003, W. Jaitrong leg., THNHM-I03-3296 (SKYC, THNHM); same loc., Khao Takrup, 29 Jun. 2003, W. Jaitrong leg., THNHM-I03-3401 (THNHM); Sakhae Prov., Pang Sida, 23 Aug. 2006, W. Jaitrong leg., WJT06-11 (SKYC, THNHM); same loc., 30 May 2006, W. Jaitrong leg., WJT06-E381 (THNHM); Chanthaburi Prov., Khao Soi Dao, 4 Jun. 2001, K. Eguchi leg., Eg01-TH-061 (SKYC); Chonburi Prov., Muang Dist., Khao Kheao, Chan Tatean Waterfall, 4 Aug. 2009, W. Jaitrong leg., WJT09-TH2000 (AMK, THNHM); Trat Prov., Ko Kud Dist., 20 Sep. 2009, T. Jeenthong leg. (THNHM). **SOUTHERN:** Nakhon Si Thammarat Prov., Khao Nan, Khlong Khai, 26 Nov. 2006, W. Jaitrong leg., WJT06-TH641 (AMK, SKYC, THNHM); Trang Prov., Palian Dist., Rubber plantation, 29 Nov. 1999, W. Jaitrong leg., WJT99-TH45 (AMK, SKYC, THNHM); Songkhla Prov., Khao Kor Hong, 30 Aug. 2013, Y. Hashimoto leg., WJT300913-5 (THNHM).

Distribution. Vietnam, Laos, Myanmar (Jaitrong and Yamane, 2011), and Thailand (Fig. 4D).

Bionomics. Wilson (1964) based on Dr Schneirla's notes reported that *A. binghami* was found in a dry tropical evergreen forest with moderate sub-humus moisture, under

moderate cover. According to the material examines, it inhabits highly varied habitats such as the primary seasonal forest (hill vergreen forest, dry evergreen forest, mixed deciduous forest, and savanna), secondary forest, open areas and plantations near the forest edge.

I observed this species preying on other ants such as *Anoplolepis* (WJT06-E381 and WJT09-TH2000), *Camponotus* (WJT06-E381, TH01-SKY-39, WJT03-TH300, THNHM-I03-3401, WJT281113-2, WJT281113-3, WJT260914-6, and WJT230914-24), *Cerapachys* (TH98-SKY-26), *Leptogenys* (WJT99-TH45), *Polyrhachis* (TH05-SKY-71, WJT06-E381, THNHM-I03-3401, and THNHM-I03-3567).

Remarks. *Aenictus binghami* is similar to *A. siamensis* in having an entirely sculptured mesosoma but is considerably larger than the latter (HW 0.90-0.95 mm vs. 0.63-0.70 mm). The entire pronotum is finely and densely reticulate and opaque in *A. binghami*, while it is very superficially reticulate and somewhat shiny in *A. siamensis*. Femora of all legs are rather smooth in *A. siamensis*, but microreticulate in *A. binghami*.

So far the southernmost latitude of the range of this species is known at Songkhla Province (ca. 600 km south of the Isthmus of Kra).

***Aenictus camposi* Wheeler et Chapman**
(Fig. 5A-D)

Aenictus camposi Wheeler and Chapman, 1925: 48, pl. 1, figs 3-4; Wilson, 1964: 452, fig. 63; Bolton, 1995: 58; Jaitrong and Nabhitabhata, 2005: 11; Jaitrong *et al.*, 2010: 38, figs 7, 8, 16; Jaitrong, 2013: 338.

Types. Lectotype and five paralectotype workers (MCZC, examined) from Philippines, Oriental Negros Province, Dumaguete, Horns of Negros, 1200 m alt.

Measurements. Worker (10 non-type

workers): TL 2.6-2.7 mm; HL 0.55-0.58 mm; HW 0.43-0.45 mm; SL 0.55-0.58 mm; ML 0.85-0.88 mm; MTL 0.55-0.58 mm; PL 0.25-0.28 mm; CI 74-82; SI 122-135.

Description of worker. Head in full-face view clearly longer than broad, with its sides and posterior margin slightly convex. Antenna 10-segmented; scape long, extending beyond posterior corner of head; antennal segment II slightly shorter than III, but longer than each of IV-VI; the last (X) almost as long as VIII and IX combined and as long as II and III combined. Frontal carina short, thin and not extending beyond level of posterior margin of torulus. Clypeus short, with its anterior margin bearing 5-7 denticles. Mandible with apical tooth large and curved, followed by 10-12 minute teeth on masticatory margin. Mesosoma in profile with pronotum convex dorsally and sloping gradually to metanotal groove. Propodeum in profile lower than promesonotum, with nearly straight dorsal outline; propodeal junction angulated; declivity of propodeum seen from back distinctly tapering above, shallowly concave, and encircled with a thin rim. Petiole in profile slightly longer than high, with dorsal outline rather flat, seen from above relatively narrow, almost parallel-sided; subpetiolar process present; its ventral outline convex, without angle or tooth; postpetiole slightly smaller than petiole; its node short, almost as long as broad, in profile elevated posteriorly.

Head, antennal scape, pronotum, petiole, postpetiole, gaster, femora and tibiae of legs entirely or extensively smooth and shiny. Antennal flagellum densely punctate. The anteriormost portion of pronotum punctate; mesothorax and propodeum with dense punctures; metapleuron partly or extensively smooth; propodeal dorsum with short longitudinal rugae along the junction.

Body with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.10-0.13 mm long. Head, waist, gaster, antenna and legs

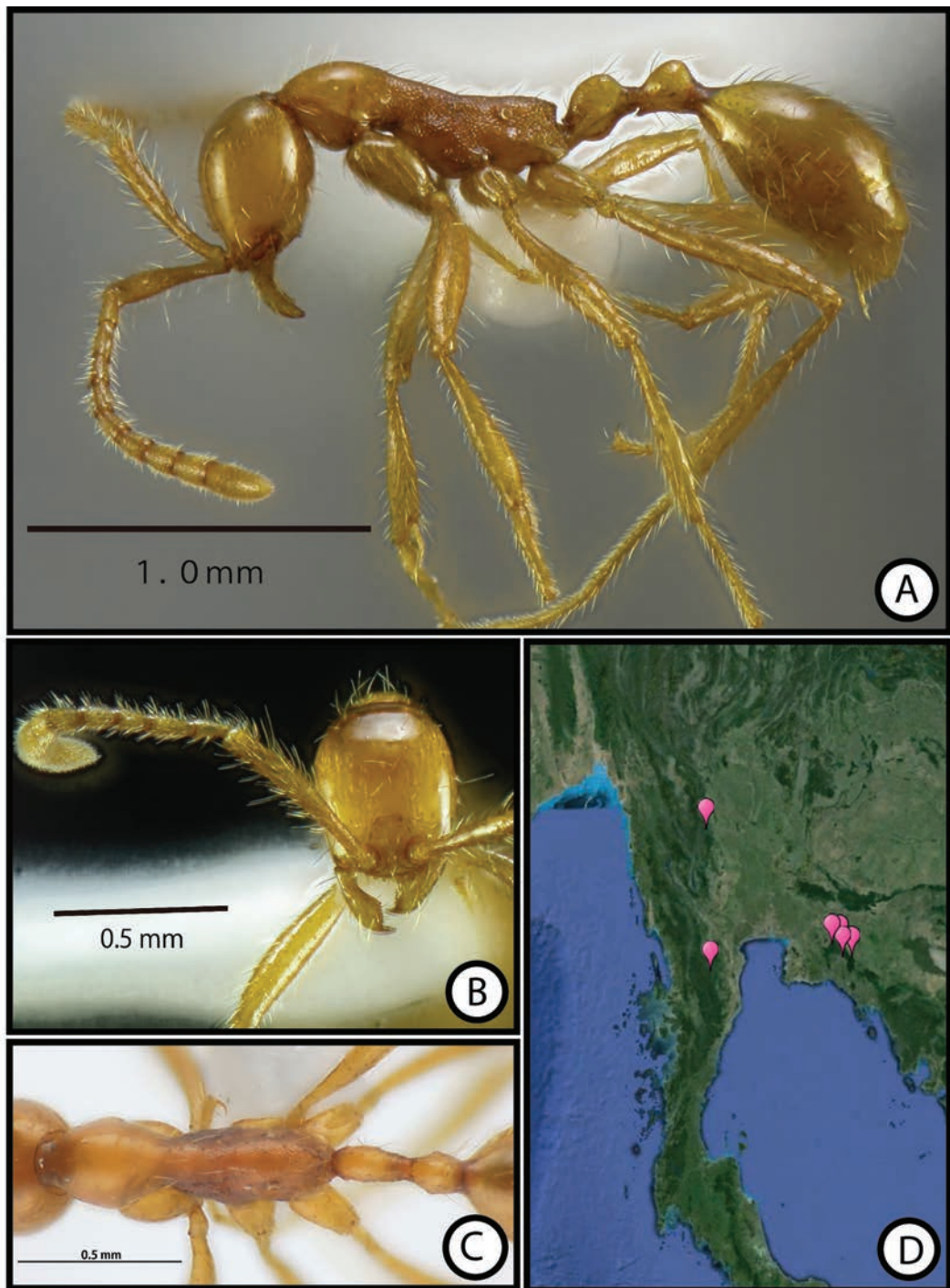


Figure 5. *Aenictus camposi*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

yellow; mesosoma pale brown.

Non-type material examined. CENTRAL: Uthai Thani Prov., Ban Rai Dist., Kan Ma Kud Village, 18 Jun. 2010, W. Jaitrong leg., HKK10-06-01 (THNHM); Petchaburi Prov., Kaeng Krachan, 24 Jun. 2014, Sk. Yamane and M. Maruyama leg., TH14-SKY-30 (SKYC, THNHM); same loc., 25 Mar. 2007, W. Jaitrong leg., WJT07-TH369 (AMK, SKYC, THNHM). EASTERN: Chanthaburi Prov., Khao Soi Dao W.S., 20 Jul. 1997, Sk., Yamane leg., TA970720-3 (SKYC, THNHM); same loc., near head quarter, evergreen forest., 18 Jan. 2008, W. Jaitrong leg., WJT08-TH36 (THNHM); same loc., 20 Jul. 1997, H. Okido leg., TH97-HO-019 (SKYC, THNHM); Chachoengsao Prov., Tha Takiab Dist., 27 Oct. 2002, W. Jaitrong leg. (THNHM).

Distribution. Thailand (Fig. 5D), Malaysia (Sabah and Sarawak), Brunei, Indonesia (W. Sumatra), and Philippines (Negros, Luzon) (Jaitrong *et al.*, 2010).

Bionomics. *Aenictus camposi* ranges from the Philippines through Sundaland to southern part of continental Southeast Asia (Jaitrong *et al.*, 2010). This species is found from lowland to highland and in natural and disturbed forests. Rościszewski and Maschwitz (1994) reported that *A. camposi* fed on other small ant species such as five species of *Paratrechina* (= *Nylanderia*?) and *Prenolepis naoroji* in Pasoh Forest Reserve, Malay Peninsula.

Remarks. *Aenictus camposi* is most similar to *A. biroi* Forel from India and also related to *A. vieti* that occurs in Thailand and Vietnam. It is easily distinguished from *A. vieti* as follows: declivity of propodeum is broader with more rounded apex in *A. vieti* (narrower and distinctly tapering above in *A. camposi*); subpetiolar process with anteroventral corner acutely angulate in *A. vieti* (unarmed in *A. camposi*).

***Aenictus changmaianus* Terayama et Kubota**
(Figs 6A-E, 7A)

Aenictus changmaianus Terayama and Kubota, 1993: 68, figs 2-4; Jaitrong and Hashimoto, 2012: 31, figs 1A-E, 7; Jaitrong, 2013: 339.

Types. Holotype and three paratype workers from Thailand, Chang Mai Prov. [Chiang Mai Prov.], Doi Step [Doi Suthep N.P.], 1500 m, 18 Aug. 1992, M. Terayama and S. Kubota leg. (NIAS and NSMT; two paratypes examined).

Measurements. Paratypes (n = 2): TL 2.00-2.05 mm; HL 0.48-0.50 mm; HW 0.39-0.40 mm; SL 0.28 mm; ML 0.63 mm; PL 0.14 mm; CI 78-84; SI 69-71.

Non-type workers (n = 6): TL 1.95-2.60 mm; HL 0.50-0.58 mm; HW 0.38-0.50 mm; SL 0.26-0.35 mm; ML 0.58-0.80 mm; PL 0.13-0.19 mm; CI 75-89; SI 68-72.

Description of worker. Head in full-face view rectangular, clearly longer than broad, with almost parallel sides and shallowly concaved posterior margin. Antenna 10-segmented; scape reaching midlength of head; antennal segment II longer than broad; III-IX each broader than long; terminal segment (X) 2.1 times as long as broad. Frontal carina very short, not extending beyond level of posterior margin of torulus. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth, 1-4 denticles and a medium-sized basal tooth; basal margin with 2-3 small denticles. Mesosoma seen in profile almost flat or weakly convex dorsally; suture between mesopleuron and metapleuron present; metanotal groove indistinct; metapleural gland bulla large and transparent; distance between propodeal spiracle and metapleural gland bulla shorter than or almost as long as spiracular diameter (Fig. 6D). Propodeal junction obtusely angulated; declivity of propodeum with lateral carinae, but not demarcated basally by a transverse carina. Petiole excluding subpetiolar process almost as long as high, with its dorsal outline convex; subpetiolar



Figure 6. *Aenictus changmaianus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

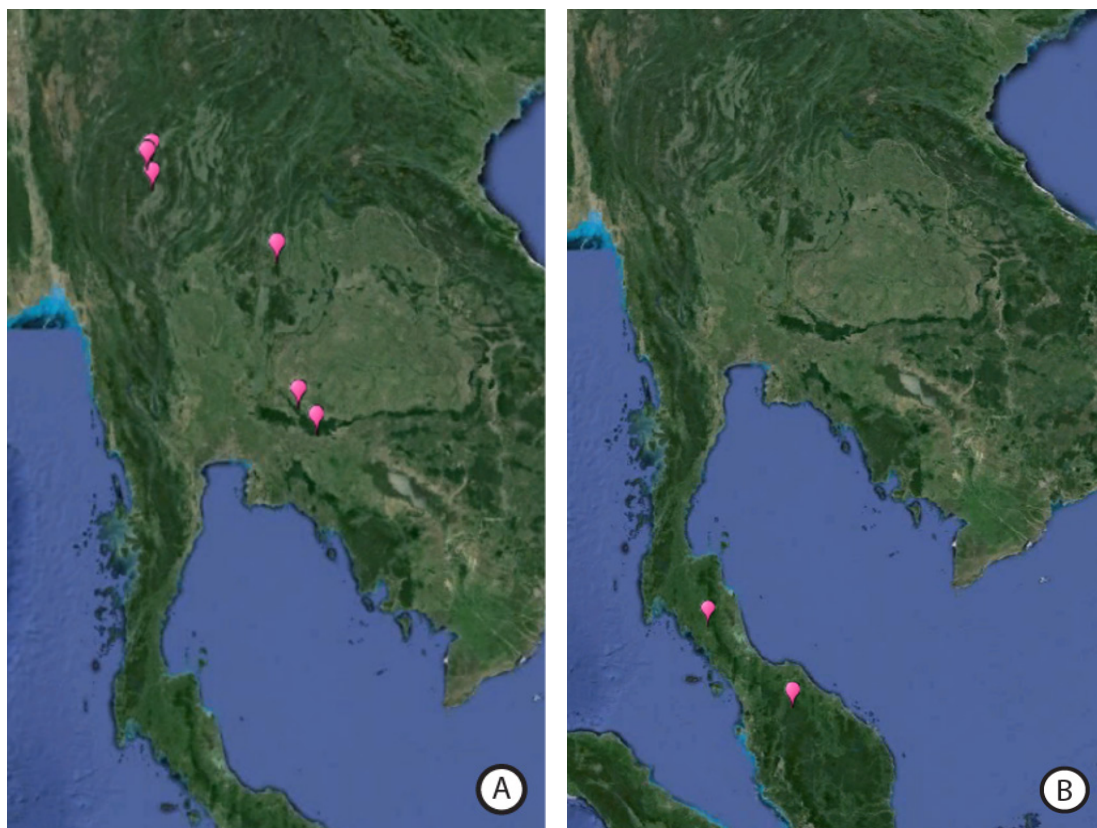


Figure 7. Distribution of the *Aenictus minutulus* species group in Thailand.

A, *A. changmaianus*; B, *A. minutulus*.

process large, rectangular; anterior corner and posterior corner each acutely angulate. Postpetiole higher than long, slightly smaller than petiole and its dorsal outline convex. Femora and tibiae incrassate and widened.

Head including mandible and antennal scape smooth and shiny; promesonotum, dorsa of petiole and postpetiole smooth and shiny; mesopleuron densely reticulate, but shiny; metapleural gland bulla almost smooth and shiny; lateral faces of propodeum, petiole, and postpetiole weakly microreticulate. Legs entirely smooth and shiny.

Head and mesosoma dorsally with relatively dense standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.05 mm long. Ground color yellow.

Non-type material examined. NORTHERN: Chiang Mai Prov., Chiang Dao Dist., 20 Sep.

2013, W. Jaitrong leg., WJT200913-3 (THNHM); Chiang Mai Prov., Campus of Chiang Mai University, 10 Jun. 2001, K. Eguchi leg., Eg01-TH-161 (AMK, SKYC, THNHM,); Chiang Mai Prov., Mae Tang Dist., Mae Hair Tai, 1 Sep. 2000, W. Jaitrong leg., WJT00-MHT02 (AMK, SKYC, THNHM); Chiang Mai Prov., Mae Tang Dist., Wad Pha Deang, 8 Sep. 2000, W. Jaitrong leg., WJT00-WPD01 (= WJT8ix00-1, SKYC, THNHM); same loc., 9 Sep. 2000, W. Jaitrong leg., WJT00-WPD02 (SKYC, THNHM). NORTHEASTERN: Loei Prov., Phu Luang (ca. 700 m alt.), 10 Apr. 2008, Sk. Yamane leg., TH08-SKY-66 (SKYC, THNHM); same loc., 10 Apr. 2008, W. Jaitrong leg., TH08-WJT-500 (THNHM); same loc., 11 Apr. 2008, W. Jaitrong leg., WJT08-TH800 (THNHM); Nakhon Ratchasima Prov., Sakaerat ERS., 14 Dec. 2010, S. Hasin leg., TH10-SH-01 (SKYC, THNHM);

same loc., 10 Jul. 1999, Sk. Yamane leg., TH99-SKY-23 (SKYC, THNHM); same loc., 4 Mar. 2005, S. Hasin leg., WJT05-NE50 (SKYC, THNHM); same loc., 18 Oct. 2002, W. Jaitrong leg., WJT02-1 (SKYC, THNHM). EASTERN: Sakeao Prov., Haui Nam Yen, 27 May 2006, W. Jaitrong leg. (THNHM).

Distribution. Vietnam (Jaitrong and Hashimoto, 2012), Thailand (Fig. 7A), and Cambodia (Jaitrong and Hashimoto, 2012).

Bionomics. I found this species in highland seasonal forests (hill evergreen forest) and disturbed areas in northern Thailand (900-1500 m). In eastern Thailand it was collected from lowland seasonal forests (dry evergreen forest), secondary forests, and plantations (160-700 m), thus this species probably ranges from lowland to highland and inhabits both primary and disturbed forests.

Remarks. *A. changmaianus* is very similar in general appearance to *A. minutulus* and *A. minimus* Jaitrong et Hashimoto. However, *A. changmaianus* is separated from *A. minimus* by the dentition on the basal margin of the mandible (basal margin of mandible with 3–5 denticles that gradually reduce in size toward base of mandible in *A. changmaianus*; basal margin of mandible with 1–2 small denticles next to large basal tooth and followed by a larger denticle in *A. minimus*) and antennal scape being relatively longer than in *A. minimus* (SI 67-72 in *A. changmaianus*; SI 63-64 in *A. minimus*). It is distinguished from *A. minutulus* by the large metapleural gland bulla (relatively small in *A. minutulus*).

***Aenictus concavus* Jaitrong et Yamane**
(Fig. 8A-D)

Aenictus concavus Jaitrong and Yamane, 2013:
178, fig. 4A-C.

Types. Holotype and paratype workers from E. Thailand, Chanthaburi Prov., Pong Nam Ron Dist., Khao Soi Dao W.S., Hin Dad Waterfall, 15 May 2008, W. Jaitrong leg.,

WJT08-E094 (SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 7): TL 2.20-2.30 mm; HL 0.54-0.56 mm; HW 0.48-0.50 mm; SL 0.33-0.35 mm; ML 0.75-0.78 mm; PL 0.20-0.25 mm; CI 84-89; SI 68-70.

Description of worker. Head in full-face view with anterior portion narrower than posterior portion and clearly longer than broad, sides convex, posterior margin strongly concave; in profile occipital corner convex, with a distinct protuberance on occipital corner; occipital margin bearing a distinct carina. Antenna 10-segmented; scape relatively short, not reaching 2/3 of head length. Frontal carinae relatively short, fused at level of antennal base to form a single carina, reaching level of posterior margin of torulus. Parafrontal ridge feeble and incomplete. Anterior clypeal margin strongly concave, concealed by curved anterior extension of frontal carinae. Masticatory margin of mandible with 3 teeth including a large apical tooth; basal margin concave. Maximum width of gap between anterior clypeal margin and mandibles about 3.3 times as broad as maximum width of mandible. Promesonotum almost flat or feebly convex dorsally; metanotal groove indistinct; mesopleuron relatively short, demarcated from metapleuron by an indistinct groove; metapleural gland bulla relatively large, its maximum diameter about 3 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with feebly convex dorsal outline; propodeal junction onbusely angulate; declivity of propodeum widely and shallowly concave, encircled with a distinct rim. Petiole slightly longer than high, with its dorsal outline convex; subpetiolar process weakly developed, its anteroventral corner acutely angulate and ventral outline almost straight or feebly concave. Postpetiole in profile distinctly shorter than petiole, subrectangular.

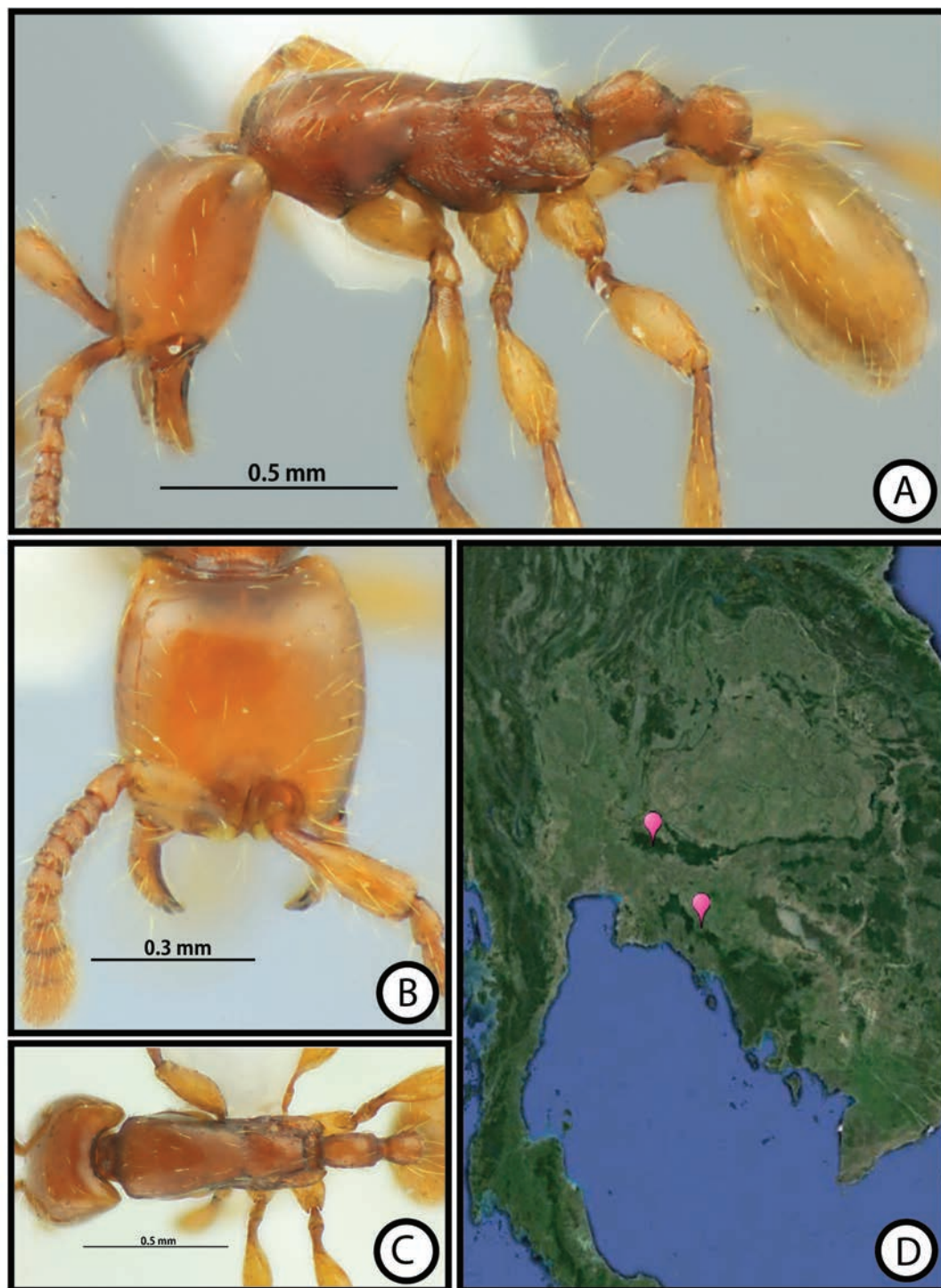


Figure 8. *Aenictus concavus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Head including mandible and antennal scape entirely smooth and shiny. Promesonotum smooth and shiny except for anteriormost portion reticulate; mesopleuron, metapleuron, and propodeum reticulate; in addition mesopleuron and metapleuron with relatively irregular longitudinal rugae; petiole and postpetiole reticulate except dorsa smooth and shiny. Legs entirely smooth and shiny.

Head with relatively sparse standing hairs mixed with dense short hairs over surface; mesosoma dorsally with relatively sparse standing hairs mixed with sparse decumbent hairs; longest pronotal hairs 0.15-0.18 mm long. Head, mesosoma, petiole, and postpetiole reddish brown; gaster and legs yellowish brown.

Non-type material examined. NORTHEASTERN: Nakhon Ratchasima Prov., Khao Yai N.P., 5 Dec. 1998, D. Wiwatwitaya leg. (AMK, THNHM). EASTERN: Chanthaburi Prov., Pong Nam Ron Dist., Khao Soi Dao W.S., Hin Dad Waterfall, 15 May 2008, W. Jaitrong leg., WJT08-E094 (same colony as holotype, THNHM).

Distribution. Thailand (Fig. 8D).

Bionomics. So far this is found only in the lowland. The type series was collected in an evergreen forest near a stream with wet condition. The colony from Khao Yai National park was collected in a bamboo forest.

Remarks. *Aenictus concavus* is separated from the other species of the *A. ceylonicus* group by the following characteristics: head in profile relatively flattened; in full-face view posterior margin of head strongly concave; in profile occipital corner convex, with a distinct protuberance on occipital corner (occipital corner round in the other species); promesonotum almost flat or feebly convex dorsally.

***Aenictus cornutus* Forel**
(Fig. 9A-D)

Aenictus cornutus Forel, 1900: 75; Wilson,

1964: 457, figs 21-22; Bolton, 1995: 59; Jaitrong and Yamane, 2011: 11, figs 1-2.

Types. Lectotype and paralectotype workers from Borneo, Sarawak (MHNG, examined).

Measurements (n = 7): TL 4.00-4.45 mm; HL 0.83-0.88 mm; HW 0.73-0.78 mm; SL 0.80-0.88 mm; ML 1.48-1.55 mm; PL 0.35-0.38 mm CI 86-89; SI 107-114.

Description of worker. Head in full-face view clearly longer than broad, with sides slightly convex and posterior margin sinuate; occipital margin bearing a narrow collar. Antenna 10-segmented, relatively thick; scape not reaching posterolateral corner of head; antennal segments II-VI slightly longer than broad, of approximately same length; VII-IX thicker and slightly longer; X slightly longer than VIII+IX. Frontal carina short, slightly extending beyond the level of posterior margin of torulus and well developed anteriorly. Parafrontal ridge short and bluntly pointed at apex. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth and 5-6 denticles; basal margin of mandible lacking denticles. Mesosoma slender; pronotum anteriorly armed with large bilateral horn-like protuberances, a unique character state within the *Aenictus currax* species group. Propodeum in profile with weakly convex dorsal outline; propodeal junction angular; declivity of propodeum shallowly concave, and encircled with a thin rim. Petiole distinctly longer than high, with its dorsal outline elevated posteriorly; subpetiolar process low, with its anteroventral corner angulate, and ventral margin almost straight, sometimes with lamellate lower portion. Postpetiole distinctly longer than high, with its dorsal outline convex.

Head entirely smooth and shiny. Mandible very finely striate except for masticatory and outer zones. Antennal scape punctate. Pronotum smooth and shiny except for the

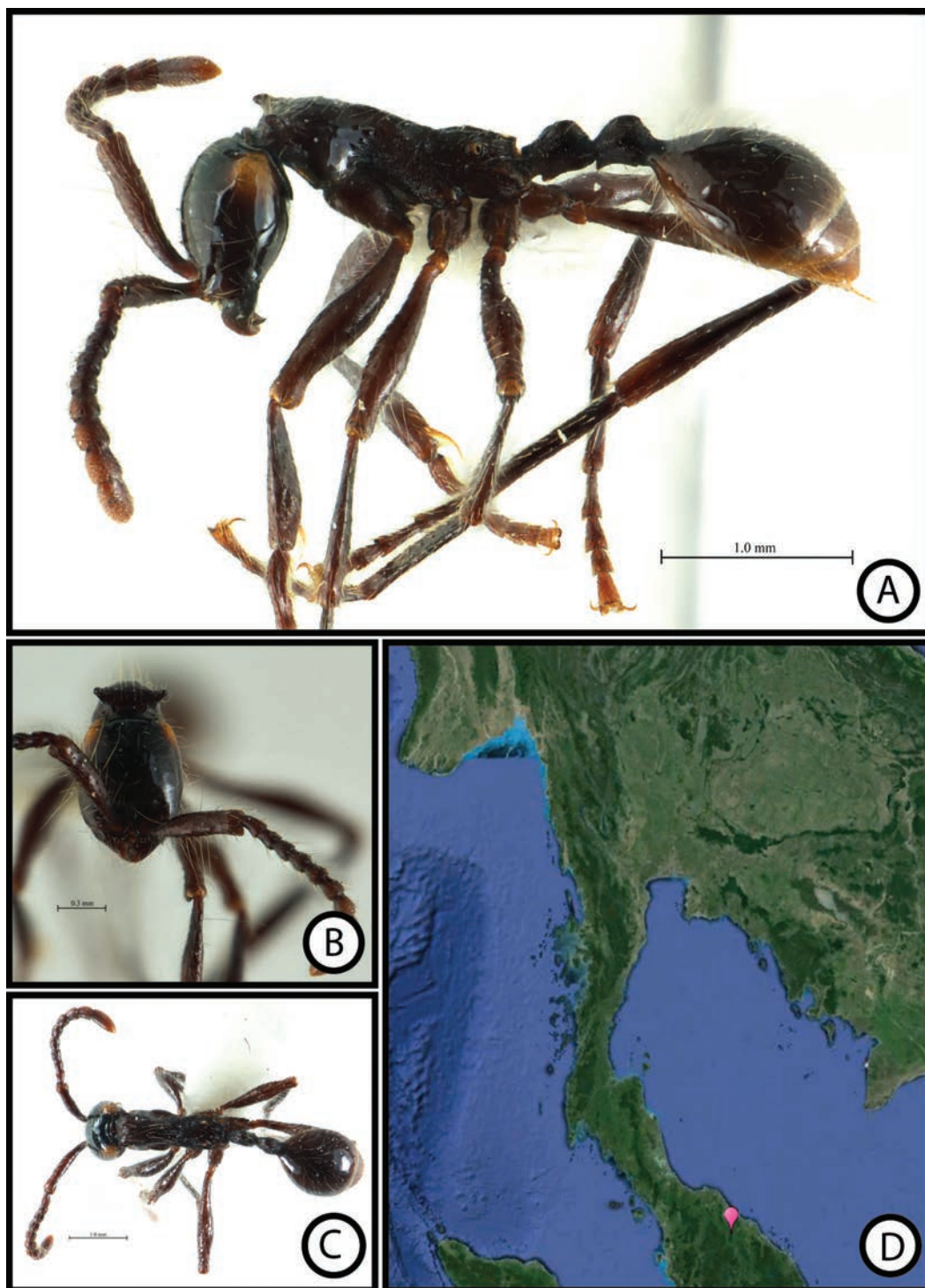


Figure 9. *Aenictus cornutus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

anteriormost portion and pronotal horns that are punctate; mesothorax, metapleuron, and propodeum with dense punctures and bearing several longitudinal rugulae. Petiole and postpetiole densely punctate as are metathorax and propodeum. Legs densely punctate.

Head and mesosoma dorsally with relatively sparse long standing hairs mixed with dense short hairs; longest pronotal hairs 0.35 mm long. Entire body dark reddish-brown. Typhlatta spot located at the occipital corner.

Non-type material examined. SOUTHERN: Narathiwat Prov., Wang Dist., 19 Mar. 2002, N. Noon-anant leg., NN190302-1 (AMK, THNHM).

Distribution. Thailand (new record), Malaysia (W. Malaysia, Sabah, and Sarawak), Indonesia (Sumatra) (Jaitrong and Yamane, 2011) (Fig. 9D).

Bionomics. *Aenictus cornutus* is very probably restricted to Sundaland. Although Jaitrong and Yamane (2011) recorded this species only from lowland rainforests, one colony was collected at 1,100 m alt. in Muaya Forest Reserve, Sabah (Sk. Yamane, personal communication). Rościszewski and Maschwitz (1994) reported that in the Pasoh Forest Reserve, Malaysia *A. cornutus* foraged on the ground and fed on the ants of the genera *Polyrhachis* and *Technomyrmex*. In Thailand this species was found only from one colony (NN190302-1) from southernmost part.

Remarks. This species is easily distinguished from the other members of the *A. currax* group as follows: pronotum armed with large bilateral horn-like protuberances; antennal scape, legs and postpetiole distinctly punctate.

***Aenictus cylindripetiolus* Jaitrong et Yamane**
(Fig. 10A-D)

Aenictus cylindripetiolus Jaitrong and Yamane, 2013: 180, fig. 5A-G.

Types. Holotype and 17 paratype workers from

S. Thailand, Trang Prov., Na Yong Dist., Khao Chong Botanical Garden, evergreen forest, 10 Dec. 2009, W. Jaitrong, WJT09-TH2023 (BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 10): TL 2.90-3.15 mm; HL 0.60-0.65 mm; HW 0.60-0.65 mm; SL 0.53-0.58 mm; ML 0.98-1.05 mm; PL 0.26-0.28 mm; CI 100-102; SI 88-92.

Description of worker. Head in full-face view subrectangular, almost as long as broad, sides weakly convex, posterior margin almost straight or feebly convex. Antenna 10-segmented; scape relatively long, slightly extending beyond 2/3 of head length. Frontal carina relatively long, extending beyond level of posterior margin of torulus. Parafrontal ridge feeble and incomplete. Anterior clypeal margin weakly concave, concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with a large acute apical tooth followed by a medium-sized subapical tooth, 2 denticles, and a medium-sized basal tooth; basal margin feebly concave. Maximum width of gap between anterior clypeal margin and mandibles about 1.4 times as broad as maximum width of mandible. Promesonotum convex dorsally and sloping gradually to metanotal groove; mesopleuron relatively short, demarcated from metapleuron by a shallow groove; metapleural gland bulla relatively small, its maximum diameter approximately 1.7 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with straight dorsal outline; propodeal junction acutely angulated; declivity of propodeum broadly and shallowly concave, encircled with a distinct rim. Petiole cylindrical, distinctly longer than high, with its dorsal outline slightly elevated posteriorly, posterior face of petiole flat, and encircled with an indistinct carina; subpetiolar process generally weakly developed, with its ventral

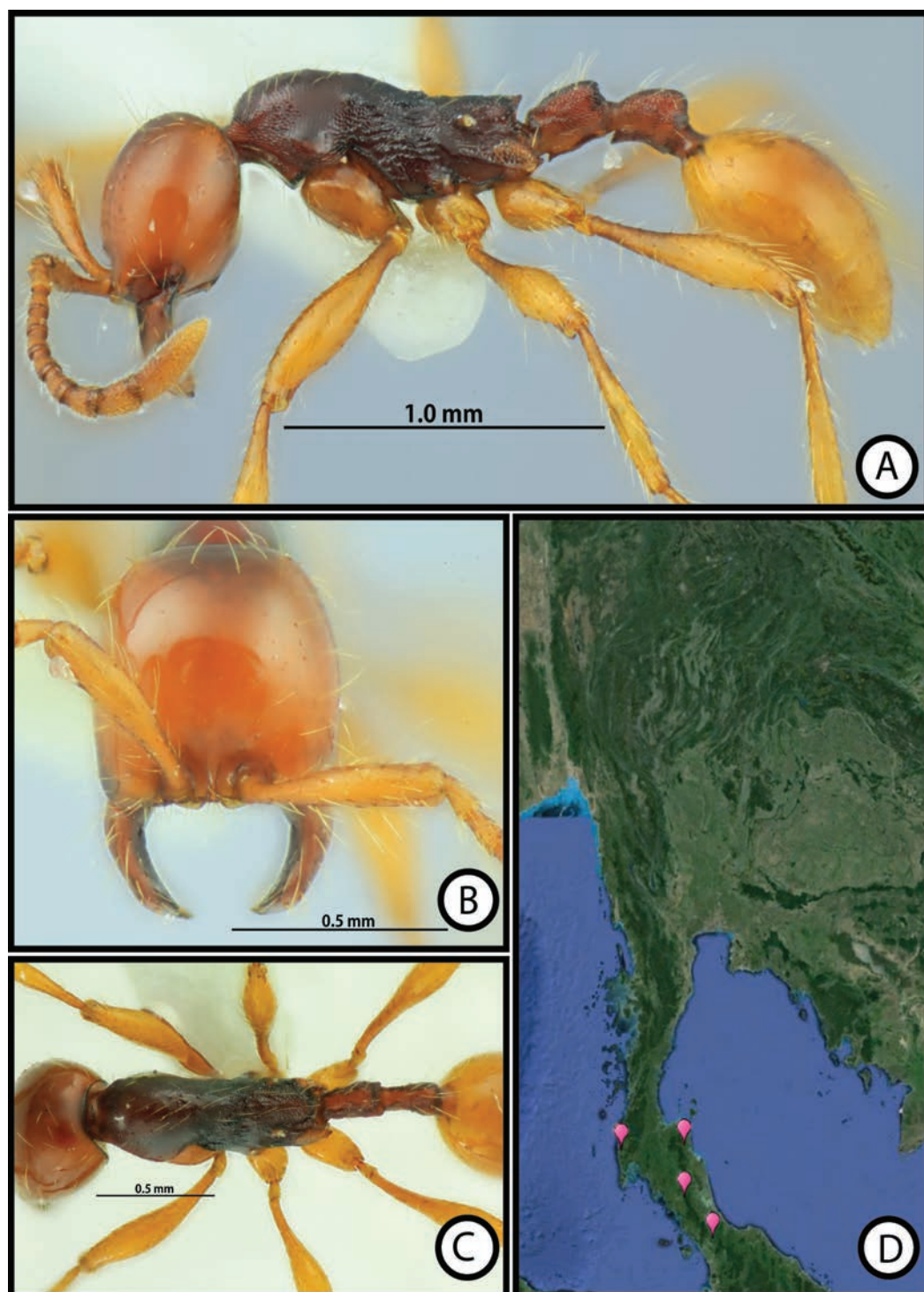


Figure 10. *Aenictus cylindripetiolus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

outline sinuate, and anteroventral corner acutely angulated. Postpetiole almost as long as petiole, seen in profile with its dorsal outline slightly elevated posteriorly and ventral outline concave.

Head and gaster entirely smooth and shiny. Mandible very finely striate. Antennal scape superficially reticulate. Mesosoma entirely reticulate, but the sculpturation on pronotum weaker than elsewhere; mesopleuron with longitudinal rugae. Petiole and postpetiole entirely reticulate. Legs entirely smooth and shiny except basal portions of femora and tibiae superficially microreticulate.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse shorter hairs; longest pronotal hairs 0.15-0.18 mm long. Head including antennal scape reddish brown; mandible, mesosoma, petiole, and postpetiole dark reddish brown; gaster and legs yellowish brown; mesosoma reddish brown.

Non-type material examined. SOUTHERN: Pang Nga Prov., Ban Bang Muang, Ton Chang Fah Falls, 100 m alt., 18 Jan. 1995, Schulz and Vock leg., 322 (NHMW); Phang Nga Prov., Khao Lak, Khao Lak N.P., 12 Jan. 1993, Schulz leg., 828 (NHMW); Songkhla Prov., Sadao Dist., Longkong Orch., 26 Aug. 1998, Pramote leg. (SKYC); Nakhon Si Thammarat Prov., Khao Nan N.P., Yod Nam waterfall, 27 Sep. 2008, W. Jaitrong leg., WJT08-S1019 (THNHM).

Distribution. Thailand (Fig. 10D).

Bionomics. This species mainly inhabits lowland primary forests; only one colony was collected from agricultural area in a longkong orchard (Songkhla Province). The type series was found under a log in a rainforest during rainy season. No worker activity was seen around the log and no immatures were found in the bivouac.

Remarks. *Aenictus cylindripetiolus* is most similar to *A. thailandianus* in having more than 4-teeth on the masticatory margin of the

mandible, and entirely sculptured promesonotum. See under *A. thailandianus*.

Aenictus dentatus Forel

(Fig. 11A-D)

Aenictus aitkeni var. *dentatus* Forel, 1911: 383.

Aenictus dentatus: Wilson, 1964: 460; Bolton, 1995: 59; Jaitrong and Nabhitabhata, 2005: 11; Jaitrong *et al.*, 2012: 134, figs. 1-5, 11-12; Jaitrong, 2013: 339.

Types. *Aenictus aitkeni* var. *dentatus*: lectotype and five paralectotype workers (MHNG, examined) from Malaya, Malacca, Berhentian Tingi.

Measurements. Workers (n = 5). TL 4.40-4.55 mm; HL 0.95-1.00 mm; HW 0.72-0.78 mm; SL 1.08-1.15 mm; ML 1.45-1.50 mm; PL 0.33-0.35 mm, CI 76-79; SI 143-152.

Description of worker. Head in full-face view oval, distinctly longer than broad, with distinctly convex sides; posterior margin strongly convex; occipital margin bearing a distinct collar. Antenna 10-segmented; scape very long, much extending beyond posterolateral corner of head; all funicular segments longer than broad; apical segment almost as long as three previous ones. Frontal carina well developed, much extending beyond the level of posterior margin of torulus. Parafrontal ridge well developed, extending 1/3 of head length; seen in profile, its anteriormost part well developed and subtriangular. Clypeus short and roundly produced anteriorly, lacking anterior denticles. Masticatory margin of mandible with large apical tooth, followed by 15 denticles; basal margin lacking denticles. Mesosoma elongate and stout; promesonotum (seen in profile) with slightly convex dorsum, sloping gradually to metanotal groove; propodeum lower, with feebly convex dorsum; propodeal junction developed into a high, thin transverse ridge, which in profile appears as a large, acute tooth

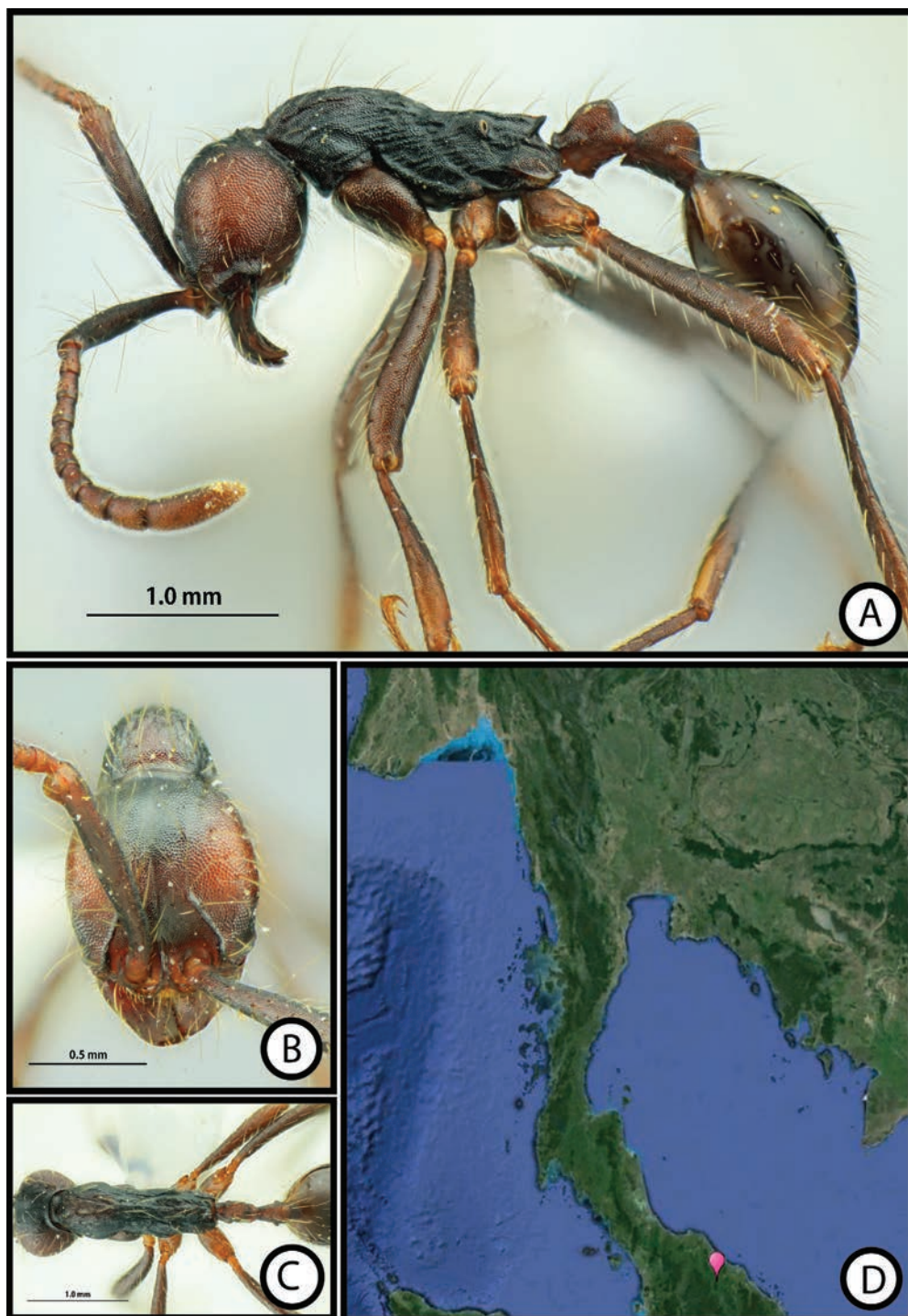


Figure 11. *Aenictus dentatus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

overhanging the declivity of propodeum. Petiole with a short but distinct peduncle; node short and posteriorly elevated, in profile with anterior and dorsal surfaces continuous, posterior slope steep; subpetiolar process weakly developed and subtriangular, its apex directed downward. Postpetiole almost as long as petiole, its dorsal surface convex. Gaster elliptical, narrowed anteriorly and posteriorly.

Head, mesosoma, petiole and postpetiole entirely punctated and opaque. In addition, promesonotum dorsally rugose, and laterally with 5-6 longitudinal rugae; propodeum dorsally with 3-4 longitudinal carinae; petiole in dorsal view with longitudinal or irregular rugae. First gastral tergite and sternite smooth and shiny, except for the basalmost part with dense micropunctures.

Head and mesosoma with relatively dense standing hairs; length of the longest pronotal hairs 0.38-0.40 mm. Head and mesosoma dark reddish brown; antenna, legs, waist and gaster reddish brown or yellowish brown.

Non-type material examined. SOUTHERN: Narathiwat Prov., Wang Dist., tropical rain forest, 26 Sep. 2001, C. Bourmas leg., THNHM-I2012-00822 (SKYC, THNHM).

Distribution. Thailand (Fig. 11D), Malaysia (W. Malaysia, Sabah, and Sarawak), Brunei, Indonesia (Sumatra, Java, and E. Kalimantan).

Bionomics. According to Annette *et al.* (2003) in Pasoh, Malay Peninsula *A. dentatus* foraged on the forest floor in the day and night and preyed on ants of the genus *Pheidole*. In Sarawak, Borneo this species mainly hunts immatures of *Pheidole* species, but also preying upon some species of Dolichoderinae and Formicinae (Hashimoto and Yamane, 2014).

Remarks. *Aenictus dentatus* is very similar to *A. paradenatus* in general appearance as they share the distinctive coarse sculpture on the head and mesosoma, and the relatively long antennal scape, extending beyond the posterior margin of the head. However, they differ in several characters. The antennal scape

is relatively longer in *A. dentatus* (SI 143-152) than in *A. paradenatus* (SI 117-124). The posterior portion of the head in full-face view is relatively narrower in *A. dentatus* than in *A. paradenatus*. The first gastral tergite is wholly smooth and shiny in *A. dentatus* (Fig. 2D), while it is weakly shagreened with smooth interspaces in *A. paradenatus* (Fig. 2E). The petiole has no peduncle in *A. paradenatus*, but has a short but distinct peduncle in *A. dentatus*.

Aenictus doydeei Jaitrong et Yamane (Fig. 12A-D)

Aenictus doydeei Jaitrong et Yamane, in Jaitrong *et al.*, 2011: 319, figs 7-9; Jaitrong and Yamane, 2012: 53, figs 1, 7A; Jaitrong, 2013: 339.

Types. Holotype and 61 paratype workers from a plantation, 211 m alt., Sivilay Village, Naxaythong Dist., Vientiane, Laos, 18°16' 10"N, 102°26'36"E, 10 Jun. 2010, W. Jaitrong leg., WJT10-LAO13 (AMK, BMNH, KKIC, MCZC, SKYC, THNHM, examined).

Measurements (n = 9): TL 2.90-3.40 mm; HL 0.53-0.70 mm; HW 0.48-0.65 mm; SL 0.28-0.40 mm; ML 0.75-1.00 mm; PL 0.23-0.28 mm; CI 91-95; SI 55-62.

Description of worker. Head in full-face view almost as long as broad, with sides convex and posterior margin almost straight or feebly concave; seen in profile occipital corner of head rounded. Antenna 10-segmented; scape reaching midlength of head; antennal segment II longer and narrower than each of III-VI; terminal segment (X) about 2.5 times as long as broad. Anterior margin of clypeus bearing 9-10 denticles. Masticatory margin of mandible with 3 acute teeth including a large apical tooth; basal margin lacking denticles. Mesosoma seen from above broader anteriorly than posteriorly; promesonotum laterally edged, in profile weakly convex dorsally and sloping

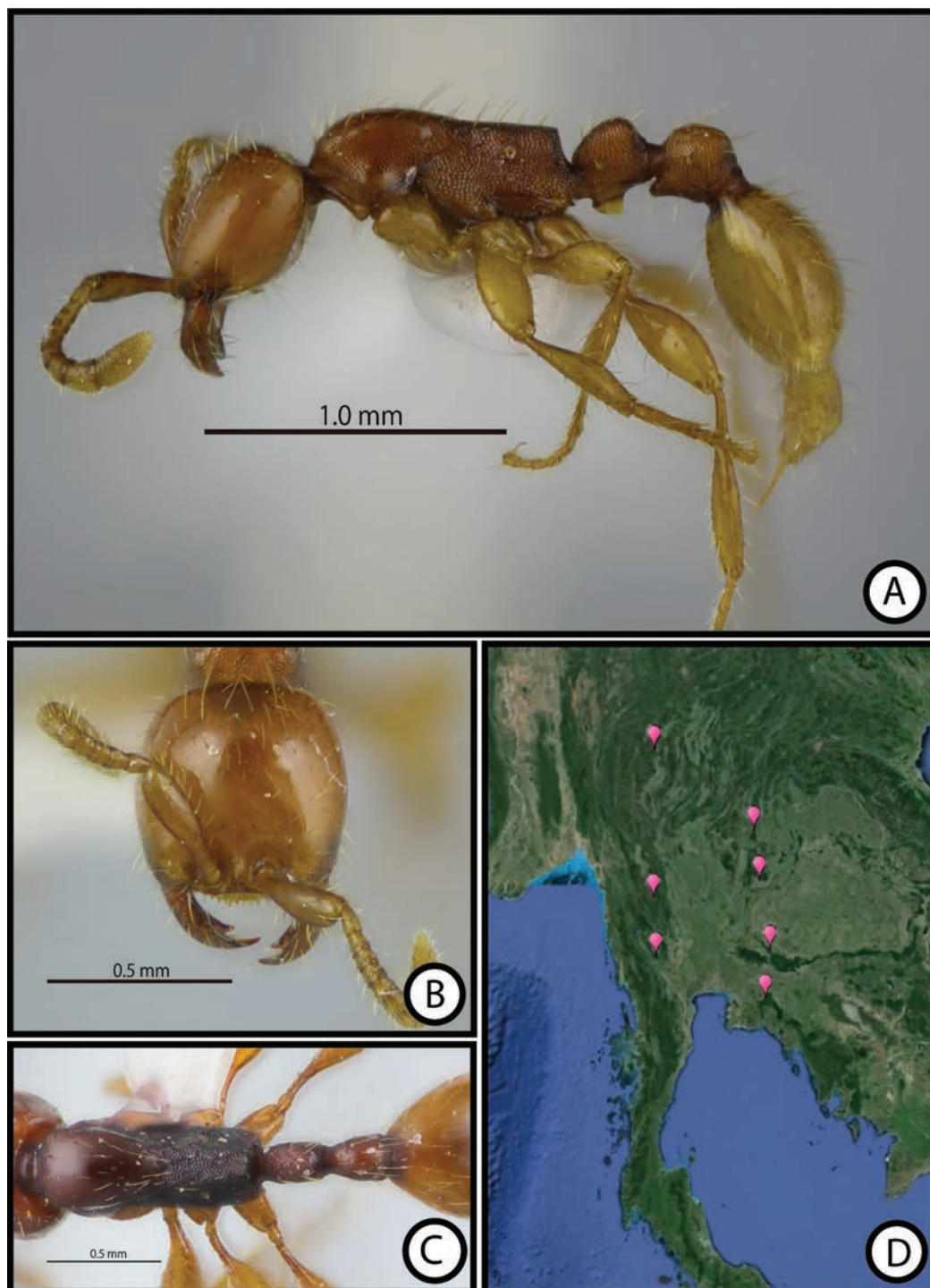


Figure 12. *Aenictus doydeei*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

gradually to propodeal junction; in profile propodeum slightly lower than pronotum and almost flat dorsally; suture between mesopleuron and metapleuron completely absent; propodeal junction angulate, right-angled; declivity of propodeum shallowly concave, encircled by a thin rim. Petiole almost as long as high, its dorsal outline slightly elevated posteriorly; subpetiolar process well developed, subrectangular, its ventral margin almost straight and longer than posterior margin; postpetiole seen in profile subrectangular and slightly larger than petiole.

Head entirely smooth and shiny. Dorsal surface of pronotum smooth and shiny, lateral face superficially reticulate and shiny; mesothorax, metapleuron and propodeum densely microreticulate. Petiole entirely microreticulate. Postpetiole microreticulate except for a small smooth and shiny area on dorsal surface.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.18-0.20 mm long. Head, mesosoma, petiole and postpetiole reddish brown; gaster yellowish brown; propodeum darker than elsewhere.

Non-type material examined. NORTHERN: Chiang Mai Prov., Chiang Dao Dist., 21 Sep. 2013, W. Jaitrong leg., WJT210913-2 (THNHM); same loc. 24 Aug. 2014, W. Jaitrong leg., WJT240814-2 (THNHM); same loc. 28 Nov. 2013, W. Jaitrong leg., WJT281114-1 (THNHM). WESTERN: Tak Prov., Thung Yai, 25 Sep. 2014, W. Jaitrong leg., WJT250914-4 (THNHM); Kanchanaburi Prov., Sri Sawat Dist., 20-21 Mar. 2014, W. Jaitrong leg., WJT200314-4 (THNHM). NORTHEASTERN: Loei Prov., Phu Rur Dist., disturbed area, 10 Apr. 2008, P. Kosolpanyapiwat leg., PKK08-TH102 (SKYC, THNHM); Chaiyaphum Prov., Phu Kheao Dist., Agricultural area, 30 Jan. 1999, W. Jaitrong leg., WJT99-AG22 (SKYC, THNHM); Loei Prov., Phu Luang, 15 May

2007, S. Hasin leg., SH07-TH6 (THNHM); Nakhon Ratchasima Prov., Sakaerat ERS, 10 Jul. 1999, Sk. Yamane leg., TH99-SKY-19 (SKYC, THNHM). EASTERN: Chachoengsao Prov., Tha Takiab Dist., 29 Jun. 2003, W. Jaitrong leg., WJT03-TH226 (THNHM).

Distribution. Vietnam, Laos (Jaitrong and Yamane, 2012) and Thailand (Fig. 12D).

Bionomics. The type series from Laos and all colonies from Thailand were collected from disturbed areas in the night. Thus *A. doydeei* is very probably nocturnal on at least ground surface. Jaitrong *et al.* (2011) reported that this species preyed on *Pheidole plagiaria* Smith.

Remarks. This species is closely related to *Aenictus javanus* Mayr, *A. longinodus*, and *A. nishimurai* in terms of body size and coloration. *A. doydeei*, however, is easily distinguished from *A. javanus* and *A. longinodus* as follows: occipital margin of head in profile rounded, while angled in *A. javanus*; petiole almost as long as high, but clearly longer than high in *A. javanus* and *A. longinodus*. *A. doydeei* is most similar to *A. nishimurai*, but is clearly larger than *A. nishimurai* with a slight overlap, and has the lateral face of the pronotum that is shiny but reticulated (almost smooth in *A. nishimurai*).

Aenictus duengkaei Jaitrong et Yamane (Figs 2B, 13A-D)

Aenictus duengkaei Jaitrong and Yamane, 2012: 55, figs 2, 7A; Jaitrong, 2013: 339, fig. 1A.

Types. Holotype and 20 paratype workers from E. Thailand, Chacheongsao Prov., Khao Ang Reu Nai, dry evergreen forest, 22 Aug. 2003, Sk. Yamane leg., TH03-SKY-79 (BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype: TL 1.90 mm; HL 0.43 mm; HW 0.38 mm; SL 0.20 mm;

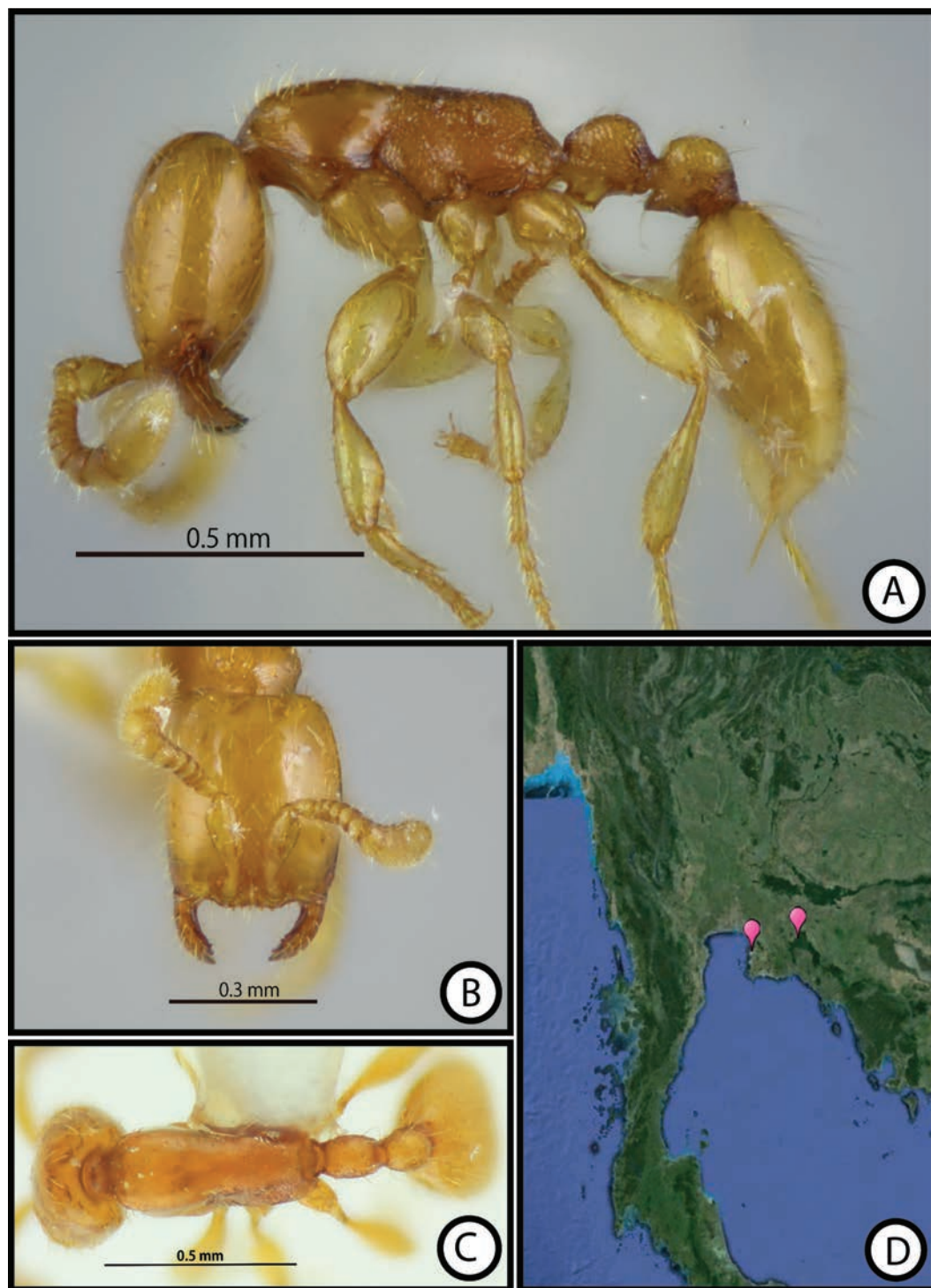


Figure 13. *Aenictus duengkaei*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

ML 0.58 mm; PL 0.15 mm; CI 88; SI 53.

Larger workers (paratypes, $n = 5$): TL 1.80-1.90 mm; HL 0.43-0.45 mm; HW 0.36-0.38 mm; SL 0.19-0.20 mm; ML 0.53-0.58 mm; PL 0.14-0.15 mm; CI 83-88; SI 52-53. Smaller workers (paratypes, $n = 3$): TL 1.50-1.55 mm; HL 0.40-0.43 mm; HW 0.25-0.28 mm; SL 0.15-0.16 mm; ML 0.45-0.48 mm; PL 0.10-0.13 mm; CI 63-65; SI 59-60.

Description of worker (holotype and paratypes). Head in full-face view distinctly longer than broad and subrectangular, with sides weakly convex or almost parallel, and posterior margin clearly concave; seen in profile occipital corner of head rounded. Antenna 10-segmented; scape very short, not reaching midlength of head; antennal segment II clearly longer than each of III-VI; III-VI shorter than broad; terminal segment longer than VII+VIII+IX and approximately 1.6 times as long as broad. Anterior margin of clypeus bearing 5-7 denticles. Masticatory margin of mandible with 3 acute teeth including a large apical tooth; basal margin with 1-2 denticles behind large basal tooth. Mesosoma seen in profile almost flat dorsally; propodeal junction angulate; declivity of propodeum almost flat, with blunt lateral carinae, but not demarcated basally by a transverse carina. Petiole round almost as long as high; subpetiolar process well developed, subrectangular, its ventral margin almost straight and longer than posterior margin; postpetiole slightly smaller than petiole and its dorsal outline roundly convex.

Head and antennal scape smooth and shiny; mandible extensively smooth but narrow zone along basal margin sculptured. Dorsal and lateral face of pronotum smooth and shiny except for anteriormost portion microreticulate and shiny; mesonotum smooth and shiny; mesopleuron superficially shagreened with smooth and shiny interspaces; metapleuron and propodeum microreticulate and shiny. Petiole entirely microreticulate

but its dorsal face with a small area that is smooth (in larger specimens this area weakly sculptured). Postpetiolar node almost smooth and shiny.

Head with relatively sparse standing hairs; mesosoma dorsally with relatively dense standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.07-0.10 mm long. Head, gaster and legs yellowish brown; mesosoma, petiole and postpetiole reddish brown; mandible darker than elsewhere.

Non-type material examined. **EASTERN:** Chacheongsao Prov., Khao Ang Reu Nai, dry evergreen forest, 22 Aug. 2003, W. Jaitrong leg., WJT03-TH259 (same colony as holotype, THNHM); Chonburi Prov., Kasetsart Siracha campus, agriculture area, 20 Mar. 2004, W. Wanishsakulpong leg., WJT04-E50 (THNHM); same loc., Khao Kaset, 17 Feb. 2004, W. Wanishsakulpong leg. (THNHM).

Distribution. Thailand (Fig. 13D).

Bionomics. This species has been known only from eastern Thailand. The type series was collected from soil in a lowland dry evergreen forest (ca. 200 m alt.), while the other colony (WJT04-E50) collected from soil in an agricultural area. Thus, this species inhabits both primary and disturbed forests.

Remarks. *Aenictus duengkaei* is similar to *Aenictus piercei* Wheeler et Chapman in terms of body size and coloration. Furthermore, the propodeal declivity is not margined basally with a carina in both species. However, *A. duengkaei* is easily separated from the latter by the condition of the mandible that has a distinct denticle on the basal margin, while the denticle is absent in *A. piercei*.

Aenictus fuchuanensis Zhou (Fig. 14A-D)

Aenictus fuchuanensis Zhou, 2001: 231, figs 74-75.

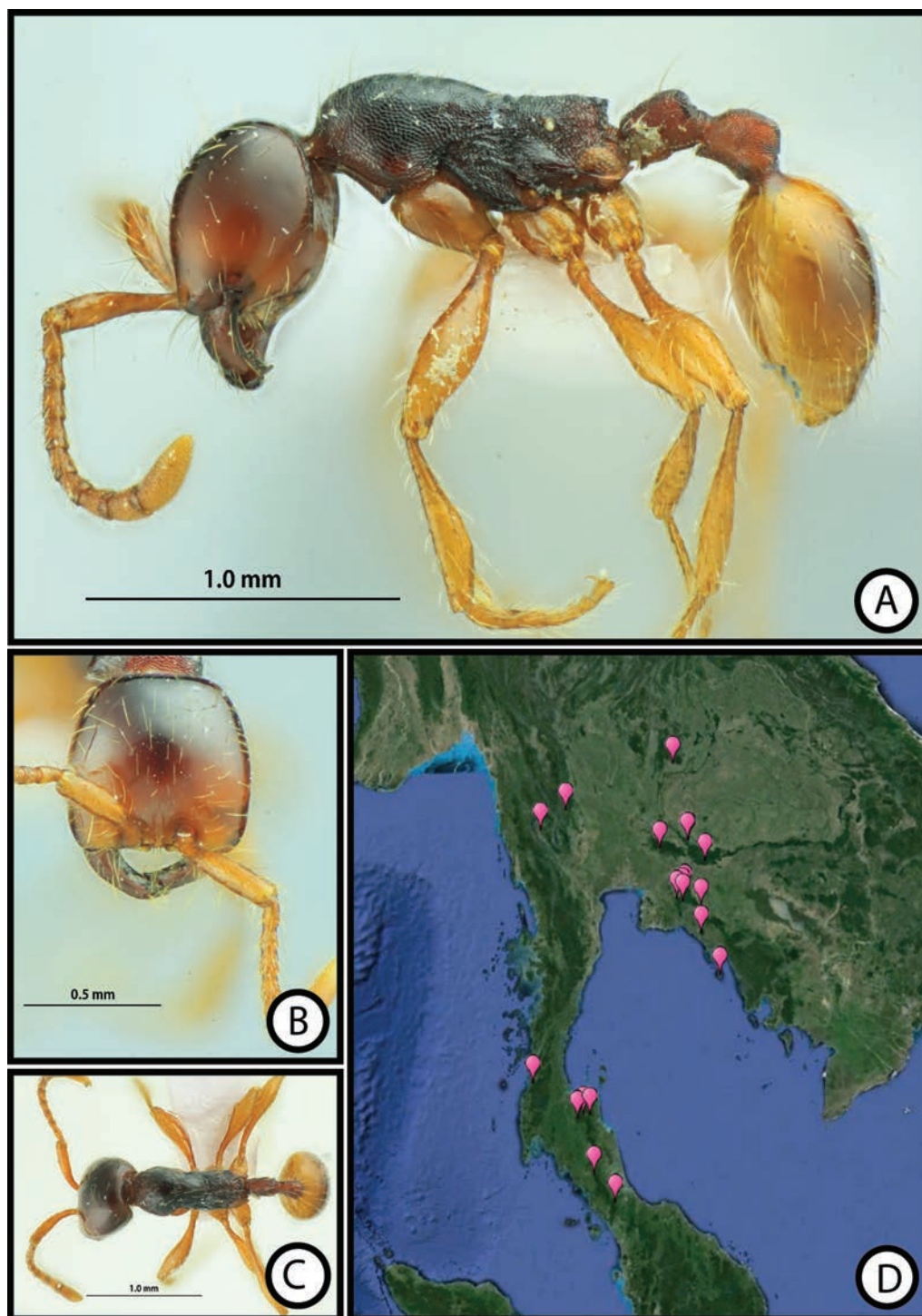


Figure 14. *Aenictus fuchuanensis*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Types. Holotype and 19 paratype workers from Fuchuan County, Guangxi, 18 Jun. 1998, Shanyi Zhou leg. (not examined).

Measurements. Non-type workers (n = 10): TL 3.10-3.45 mm; HL 0.63-0.70 mm; HW 0.70-0.75 mm; SL 0.53-0.58 mm; ML 0.98-1.05 mm; PL 0.25-0.28 mm CI 107-112; SI 75-79.

Description of worker. Head in full-face view slightly shorter than broad, anterior portion slightly broader than posterior portion, sides convex and posterior margin almost straight; occipital margin bearing a carina. Antenna 10-segmented; scape relatively long, reaching 2/3 of head length. Frontal carina short, slightly extending beyond level of posterior margin of torulus. Masticatory margin of mandible with 4 teeth, including a large apical tooth; basal margin feebly concave lacking denticles. Maximum width of gap between anterior clypeal margin and mandibles approximately 2 times as broad as maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; metanotal groove indistinct; metapleural gland bulla relatively small, its maximum diameter approximately 2 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with almost straight dorsal outline; propodeal junction acutely angulated; declivity of propodeum wide, shallowly concave, and encircled with a distinct rim. Petiole cylindrical, distinctly longer than high, with its dorsal outline slightly elevated posteriorly, posterior face of petiole flat, and encircled with a carina; subpetiolar process generally weakly developed, seen in profile its ventral outline almost straight or weakly convex, and anteroventral corner acutely angulated. Postpetiole almost as long as petiole, with its dorsal outline elevated posteriorly.

Head entirely smooth and shiny. Mandible with fine longitudinal striation. Basal half of antennal scape microreticulate; apical half

smooth and shiny. Promesonotum macroreticulate except anteriormost portion punctate; mesopleuron, metapleuron and propodeum punctate, in addition mesopleuron and metapleuron with approximately 10 longitudinal rugae. Petiole and postpetiole densely punctate. Femora entirely smooth and shiny except punctate basal portion; tibiae entirely smooth and shiny.

Head and mesosoma dorsally with relatively dense standing hairs; longest pronotal hairs 0.23-0.25 mm long. Head, mesosoma, dark reddish brown; petiole, postpetiole and antennae reddish brown; gaster and legs yellowish brown, paler than head, mesosoma and waist; mandible dark brown.

Non-type material examined. NORTHERN: Chiang Rai Prov., Doi Tung, Mae Pha Luang Dist., 19 Jun. 2002, W. Jaitrong leg., WJT02-TH0061 (THNHM). WESTERN: Kanchanaburi Prov., Thong Pha Phum, 8 Mar. 2005, W. Saksoowong leg., (THNHM). NORTHEASTERN: Chaiphaphum Prov., Phu Kheao, 11 Jun. 1998, leg. W. Jaitrong, WJT98-TH058 (SKYC, THNHM); Chaiphaphum Prov., Phu Kheao, 30 Jan. 1999, W. Jaitrong leg., WJT99-TH056 (SKYC, THNHM); Chaiphaphum Prov., Phu Kheao, 16 Sep. 1998, W. Jaitrong leg., AMK-01-01-03-109-46 (THNHM); Nakhon Ratchasima Prov., Sakaerat, 27 Jun. 1998, W. Jaitrong leg., AMK-10-03-100-51 (AMK); same loc., 9 Jul. 1999, W. Jaitrong leg. (SKYC, THNHM); same loc., 9 Jul. 1999, Sk. Yamane leg., TH99-SKY-06 (SKYC, THNHM); Nakhon Ratchasima Prov., Wang Nam Kheao Dist., Forestry Camp, 11 Jul. 2014, W. Jaitrong leg., WJT110714-1 (THNHM). CENTRAL: Uthai Thani Prov., Ban Rai Dist., Kan Ma Kud Village, 18 Jun. 2010, W. Jaitrong leg., HKK10-06-05 (SKYC, THNHM); same loc., 17 Jun. 2010, W. Jaitrong leg., HKK10-06-08 (THNHM); Nakhon Nayok Prov., Nang Rong Waterfall, 30 Mar. 2005, Sk. Yamane leg., TH05-SKY-04 (SKYC, THNHM). EASTERN: Chachoengsao Prov., Thatakiab

Dist., 27 Aug. 2005, W. Jaitrong leg., THNHM-I05-3461 (SKYC, THNHM); same loc., 29 May 2005, W. Jaitrong leg., WJT05-E202 SKYC, THNHM); same loc., 22 Aug. 2003, Sk. Yamane leg., TH03-SKY-58 (SKYC, THNHM); same loc., 21 Aug. 2003, Sk. Yamane leg., TH03-SKY-29 (SKYC, THNHM); same loc., 8 Apr. 2004, W. Jaitrong leg., WJT04-E074 (SKYC, THNHM); Chanthaburi Prov., Khao Soi Dao, 20 Jul. 1997, Sk. Yamane leg., TA970720-1 (THNHM); same loc., 3 Jun. 2001, Sk. Yamane leg., TH01-SKY-01 (SKYC, THNHM); Chanthaburi Prov., Pheao, 4 Sep. 2006, W. Jaitrong leg., WJT06-15 (THNHM); same loc., 22 Nov. 2003, D. Wiwawitaya leg., TH03-DC18 (THNHM); Sakheao Prov., Pang Sida, 23 Aug. 2006, W. Jaitrong leg., WJT06-12 (THNHM); same loc., 23 Aug. 2006, W. Jaitrong leg., WJT06-13 (THNHM); Trat Prov., Ko Kud, 20 Sep. 2009, T. Jeenthong leg. (THNHM). SOUTHERN: Ranong, Khlong Naka, 12 Aug. 2009, W. Jaitrong leg., WJT09-TH2059 (THNHM); Surathani Prov., Lumpun Village, 11 Oct. 2011, W. Jaitrong leg., TH11-WJT-27 (SKYC, THNHM); Nakhon Si Thammarat Prov., Khao Nan, 26 Nov. 2006, W. Jaitrong leg., WJT06-TH660 (THNHM); Trang Prov., Khao Chong Botanical Garden, 16 Jun. 2000, W. Jaitrong leg., AMK-10-01-03-117-70 (THNHM); Songkhla Prov., Ton Nga Chang, 24 Jul. 1997, H. Okido leg., TH97-HO-102 (SKYC, THNHM); same loc., 24 Jul. 1997, Sk. Yamane leg., TH97-SKY-12 (THNHM).

Distribution. South China, Hong Kong, Cambodia (Jaitrong and Yamane, 2013), and Thailand (Fig. 14D).

Bionomics. *Aenictus fuchuanensis* is widely distributed in Southeast Asia and mainly inhabits forests.

Remarks. *Aenictus fuchuanensis* is very closely related to *A. maneerati*, *A. pinkaewi*, and *A. sundalandensis* Jaitrong et Yamane in having the long cylindrical petiole and short head (CI 100-112). It is most similar to

A. pinkaewi but the sculpturing on mesosoma being weaker than in the latter (anterior portion of pronotum densely punctate, lateral face of pronotum finely reticulate in the former, while promesonotum entirely punctate in the latter).

***Aenictus fulvus* Jaitrong et Yamane**
(Fig. 15A-D)

Aenictus fulvus Jaitrong and Yamane, 2011:
34, figs 28-30; Jaitrong, 2013: 339.

Types. Holotype and 137 paratype workers from S. Thailand, Nakhon Si Thammarat Prov., Khao Nan, rubber tree plantation, 28 Sep. 2008, W. Jaitrong leg., WJT08-S1101 (AMK, BMNH, MCZC, MHNG, SKYC, THNHM, UMS, examined).

Measurements. Holotype and paratypes (n = 10): TL 2.95-3.10 mm; HL 0.63-0.75 mm; HW 0.53-0.65 mm; SL 0.48-0.60 mm; ML 0.90-1.05 mm; PL 0.23-0.25 mm CI 84-87; SI 90-92.

Description of worker. Head in full-face view subrectangular, much longer than broad, with sides rather parallel or feebly convex and posterior margin almost straight; occipital carina complete. Antenna 10-segmented; scape relatively short, not reaching posterolateral corner of head; antennal segments II-X each longer than broad; II almost as long as each of III-VII. Frontal carina very short, not extending beyond posterior margin of torulus. Anterior margin of clypeus feebly convex, bearing 4-6 denticles. Masticatory margin of mandible with a large apical tooth followed by a small subapical tooth, 3-4 denticles and a medium-sized basal tooth; basal margin bearing 2-3 small teeth. Mesosoma relatively slender; promesonotum in profile weakly convex dorsally and sloping gradually to metanotal groove; propodeum with dorsal outline almost straight; propodeal junction roundly angulate; declivity not margined dorsally and

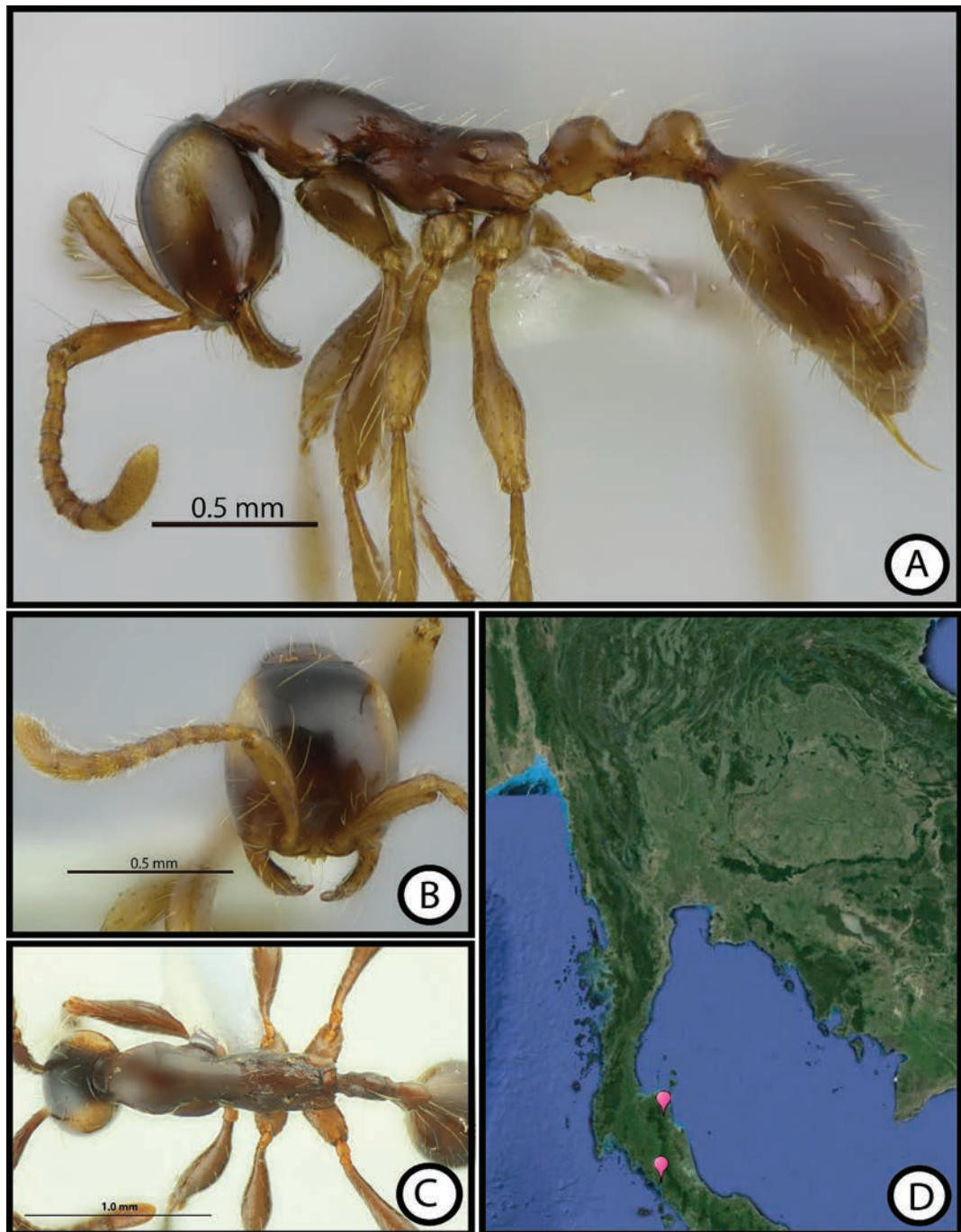


Figure 15. *Aenictus fulvus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

laterally. Petiole subsessile, almost as long as high; subpetiolar process well developed and hook-like, its apex directed downward and backward; postpetiole almost as long as petiole, only slightly higher than the latter.

Head including mandible and antennal scape entirely smooth and shiny. Mesosoma extensively smooth and shiny; area of metanotal groove striate; upper portion of metapleuron with approximately 10 irregular longitudinal rugae. Petiole and postpetiole entirely smooth and shiny. Legs entirely smooth and shiny.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.25-0.30 mm long. Body reddish-brown to yellowish-brown; dorsum of head darker. Typhlatta spot located anterior to occipital corner.

Non-type material examined. SOUTHERN: Trang Prov., Palian Dist., Ban Suso, rubber plantation, 6 Oct. 2002, W. Jaitrong leg., WJT02-TH52 (THNHM).

Distribution. Thailand (Fig. 15D), Malaysia (W. Malaysia, Sabah, and Sarawak), Brunei, and Indonesia (E. Kalimantan) (Jaitrong and Yamane, 2011).

Bionomics. *Aenictus fulvus* is probably a Sundaland species. I found two colonies in rubber tree plantations in southern Thailand (type series and WJT02-TH52). Elsewhere it has been collected mostly in lowland primary rainforests (Jaitrong and Yamane, 2011). The type series was found under a large rotting log during wet season, no worker activity was seen around the log and no immatures were found in the bivouac. Jaitrong and Yamane (2011) reported that this species preys on the ant genus *Crematogaster*.

Remarks. *Aenictus fulvus* is quite similar to *A. alticola* Wheeler et Chapman and *A. luzoni* Wheeler et Chapman (endermic to the Philippines) in having the slender body with the surface almost smooth and shiny. Compared with these species, *A. fulvus* is much

smaller (HW 0.53-0.65 mm in *A. fulvus*; 0.80-0.85 mm in *A. alticola*; 0.78 mm in *A. luzoni*) and has a low subpetiolar process without anterior angle, and ventrally with a spiniform appendage directed downward and backward (in *A. alticola* and *A. luzoni* the subpetiolar process is low and anteriorly angulate with the ventral appendage not spiniform).

Aenictus gracilis Emery

(Fig. 16A-D)

Aenictus gracilis Emery, 1893: 187, pl. 8, fig. 1; Wilson, 1964: 463, figs 56, 57, 89; Bolton, 1995: 59; Jaitrong and Yamane, 2011: 16, figs 3-4; Jaitrong, 2013: 339.

Aenictus martini Forel, 1901: 473. Type localities: Malaya, Malacca (Pahang and Perak), and Burma, Moulmein. (Synonymy by Wilson, 1964.)

Aenictus martini var. *boelianensis* Forel, 1913: 20. Type locality: Sumatra, Bah Boelian and Bah Soemboe. (Synonymy by Wilson, 1964.)

Types. *Aenictus (Typhlatta) gracilis*. Lectotype and six paralectotype workers from Sarawak (MCSM, examined). I also examined two syntypes of *A. martini* from Malacca and three syntypes of *A. martini* var. *boelianensis* (both in MHNG); these specimens well agreed with *A. gracilis*.

Measurements (non-type workers, n = 7): TL 3.60-3.80 mm; HL 0.70-0.78 mm; HW 0.63-0.68 mm; SL 0.52-0.65 mm; ML 1.20-1.30 mm; PL 0.25-0.30 mm CI 80-90; SI 84-104.

Description of worker. Head in full-face view clearly longer than broad, with sides convex and posterior margin almost straight and weakly sinuate; occipital carina distinct. Antenna 10-segmented, relatively long; scape almost reaching posterolateral corner of head; antennal segments II-X each longer than broad; II almost as long as each of III-VI. Frontal carina extending beyond the

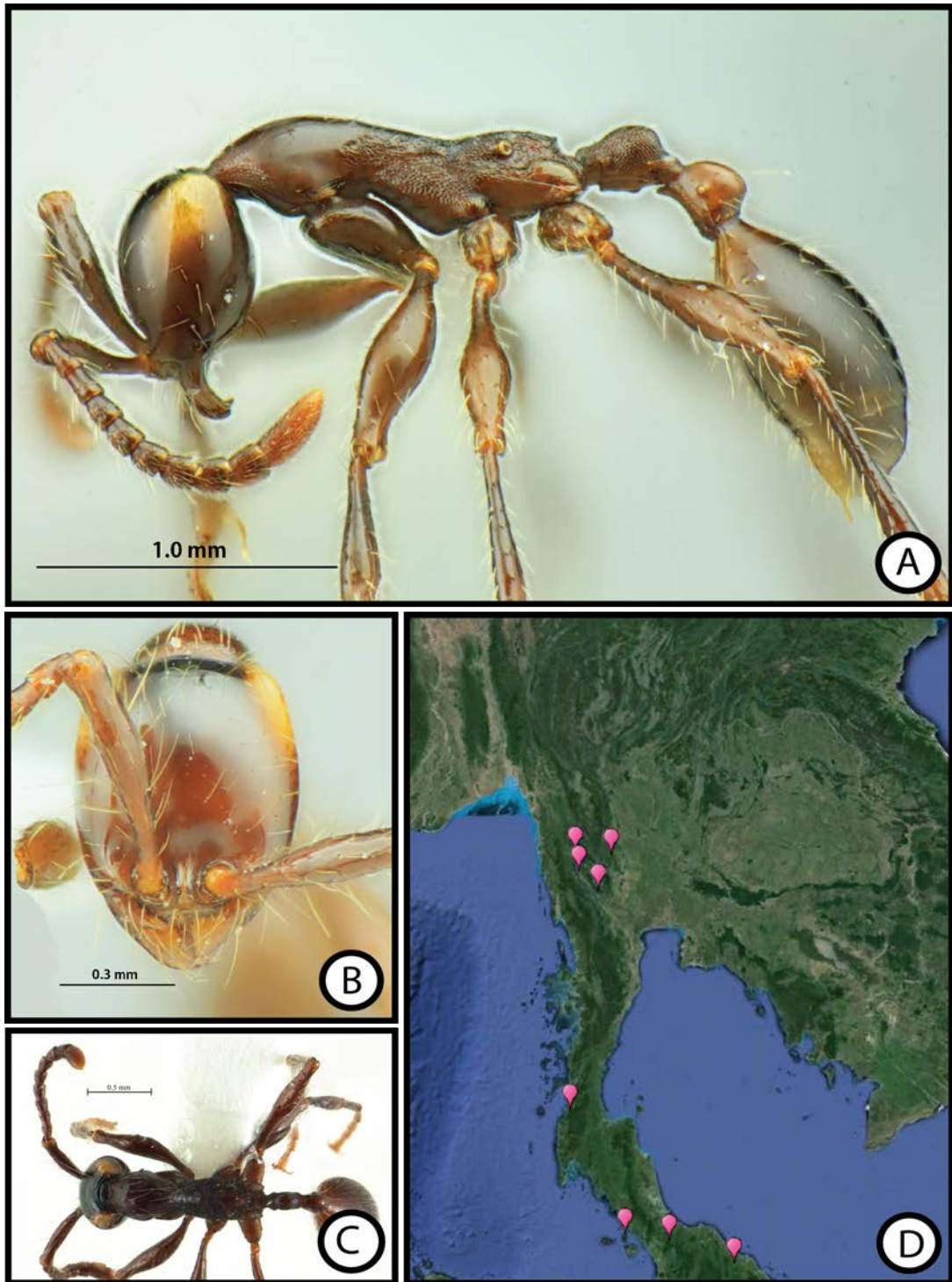


Figure 16. *Aenictus gracilis*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

level of posterior margin of torulus, well developed anteriorly and gradually becoming evanescent posteriorly. Parafrontal ridge short and bluntly pointed at apex. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth and 6-8 denticles; basal margin lacking denticles. Mesosoma slender; promesonotum in profile weakly convex dorsally and sloping gradually to metanotal groove; mesothorax almost cylindrical and demarcated from propodeum by a groove laterally, and by a shallow metanotal groove dorsally. Propodeum in profile with weakly convex dorsal outline; propodeal junction angulate; declivity of propodeum shallowly concave, and encircled with a thin rim; opening of propodeal spiracle clearly circular with its diameter approximately 1.5-2.0 times as long as diameter of postpetiolar spiracle. Petiole distinctly longer than high, with its dorsal outline weakly convex; subpetiolar process weakly developed, low but often triangular anteriorly, with its ventral outline almost straight, and anteroventral corner angulate. Postpetiole slightly longer than high, with its dorsal outline elevated posteriorly.

Head including mandible and antennal scape extensively smooth and shiny; basal 1/3 of scape finely sculptured. Pronotum and mesonotum smooth and shiny except for the anteriormost portion of pronotum that is punctate; mesopleuron and propodeum with dense punctures. In addition, propodeum bearing several thin, straight, longitudinal rugae. Petiole with dense punctures, while postpetiole dorsally smooth and shiny, on occasion laterally superficially sculptured. Legs smooth and shiny.

Head and mesosoma dorsally with relatively sparse long standing hairs mixed with sparse short hairs; longest pronotal hairs 0.40 mm long. Entire body dark reddish-brown. Typhlatta spot located at occipital corner.

Non-type material examined. WESTERN: Tak Prov., Umphang W.S., Thi Lor Su waterfall, Forest Ranger Station, 26 Jan. 2015, TH15-WJT-074 (THNHM); Kanchanaburi Prov., Maeklong Watershed Research Station, 29 Nov. 2003, Sk. Yamane leg., TH03-SKY-143 (AMK, SKYC, THNHM); Kanchanaburi Prov., Khern Si Nakarin, 24 Dec. 2006, W. Jaitrong leg., WJT06-TH2000 (THNHM); Kanchanaburi Prov., Thong Pha Phum Dist., 11 Dec. 2004, C. Bourmas leg. (AMK). CENTRAL: Uthai Thani Prov., Ban Rai Dist., 23 Sep. 2014, W. Jaitrong leg., WJT230914-23 (THNHM); same loc. 11 Nov. 2000, D. Wiwatwitaya leg., DW111100-1 (AMK, THNHM). SOUTHERN: Ranong Prov., Khlong Naka, 31 Dec. 2000, W. Jaitrong leg., WJT00-KNK01 (AMK, SKYC, THNHM); Satun Prov., Tarutao, Ludu waterfall, 200 m alt., 6 Mar. 2008, N. Noon-anant leg., NW08-TH (SKYC, THNHM); Songkhla Prov., Khao Nam Khang, 25 Jul. 1997, H. Okido leg., TH97-HO-117 (SKYC, THNHM); Narathiwat Prov., Tao Dang, peat swamp forest, 7 Sep. 1998, N. Noon-anant leg., WJT98-NW01 (SKYC, THNHM).

Distribution. Thailand (Fig. 16D), Malaysia (W. Malaysia, Sabah, and Sarawak), Brunei, Indonesia (E. Kalimantan and Sumatra), and Philippines (Jaitrong and Yamane, 2011).

Bionomics. *Aenictus gracilis* is widespread and dominant in the rainforest of Southeast Asia (Gotwald, 1995; Jaitrong and Yamane, 2011). I found a colony of this species for the first time inhabiting seasonal dry evergreen forest in central Thailand (Colony No. WJT230914-23) and workers of the colony were attacking species of the ant genera *Pheidologeton*, *Camponotus*, and *Polyrhachis*. However, in Sarawak, Borneo main prey were three species of *Technomyrmex* (Hashimoto and Yamane, 2014). Hirasawa *et al.* (2000) reported that this species frequently preyed upon small arboreal ants with large colonies, and that more than half of the prey were *Technomyrmex* ants.

Remarks. *Aenictus gracilis* is most similar to *A. cornutus* in coloration and structure, both sharing the entirely sculptured mesopleuron, metapleuron, propodeum, and petiole. However, this species is distinguished from the latter by the following characteristics: pronotum without horns (pronotum armed with a pair of large horn-like protuberances in *A. cornutus*); antennal scape, postpetiole, and legs smooth and shiny (entirely punctate in *A. cornutus*); petiole with dense fine punctures (with dense punctures and bearing longitudinal ridges or rugae in *A. cornutus*).

***Aenictus hodgsoni* Forel**

(Fig. 17A-D)

Aenictus fergusonii var. *hodgsoni* Forel, 1901: 474.

Aenictus fergusonii: Wilson, 1964: 462 (part); Bolton, 1995: 59 (part).

Aenictus hodgsoni: Jaitrong *et al.*, 2011: 321 (raised to species status); Jaitrong and Yamane, 2011: 35, figs 49-50; Jaitrong, 2013: 339.

Types. *Aenictus fergusonii* var. *hodgsoni*: Lectotype and five paralectotype workers from Burma [Myanmar], Moulmain (MHNG, examined).

Measurements. Worker (n = 10): TL 3.50-3.70 mm; HL 0.75-0.78 mm; HW 0.63-0.68 mm; SL 0.60-0.65 mm; ML 1.05-1.13 mm; PL 0.23-0.25 mm CI 83-87; SI 96-100.

Description of worker. Head in full-face view slightly longer than broad, with its sides slightly convex and posterior margin almost straight; occipital margin bearing a narrow carina. Antenna 10-segmented; scape relatively short, not reaching posterolateral corner of head; antennal segments II-X each longer than broad; II almost as long as each of III-VI. Frontal carina short, not extending beyond level of posterior margin of torulus. Anterior margin of clypeus bearing 9-10 denticles. Masticatory margin of mandible

with a large apical tooth followed by a medium-sized subapical tooth, 4-5 denticles, and a medium-sized basal tooth; basal margin lacking denticles. Promesonotum in profile convex dorsally; propodeum in profile with its dorsal outline almost straight; propodeal junction angulate, right-angled; area behind propodeal spiracle and above metapleural gland bulla impressed; declivity not distinctly margined dorsally and laterally, seen from back tapering above. Petiole almost as long as high, in profile its dorsal outline strongly convex; subpetiolar process well developed and triangular, its apex directed downward and backward; postpetiole almost as long as petiole.

Head entirely smooth and shiny. Mandible very finely striate except along masticatory margin. Antennal scape entirely microreticulate. Pronotum smooth and shiny, its anteriormost portion punctate; mesothorax, metapleuron and lateral face of propodeum with dense punctures and several longitudinal rugae; dorsal face of propodeum essentially smooth and shiny. Petiole entirely smooth and shiny except for anteriormost portion punctate; postpetiole entirely smooth and shiny. Femora extensively superficially reticulate and shiny; tibiae very finely reticulate.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.30-0.33 mm long. Entire body dark reddish brown. Typhlatta spot located anterior to occipital corner.

Non-type material examined. **NORTHERN:** Chiang Mai Prov., Doi Phahom Pok, 27 May 2008, W. Jaitrong leg., WJT08-N16 (AMK, SKYC, THNHM); Chiang Mai Prov., Doi Ang Khang, 21 Aug. 1998, Sk. Yamane leg., TH99-SKY-31 (SKYC, THNHM); Mae Hong Son Prov., Tham Lod Forest Park, 11 Nov. 2007, T. Jeenthong leg., TJ07-TH1 (THNHM); Nan Prov., Doi Phuaka, 800 m alt., 30 May 2004, W. Jaitrong leg., WJT04-N037 (AMK, SKYC, THNHM); same loc., HEF,

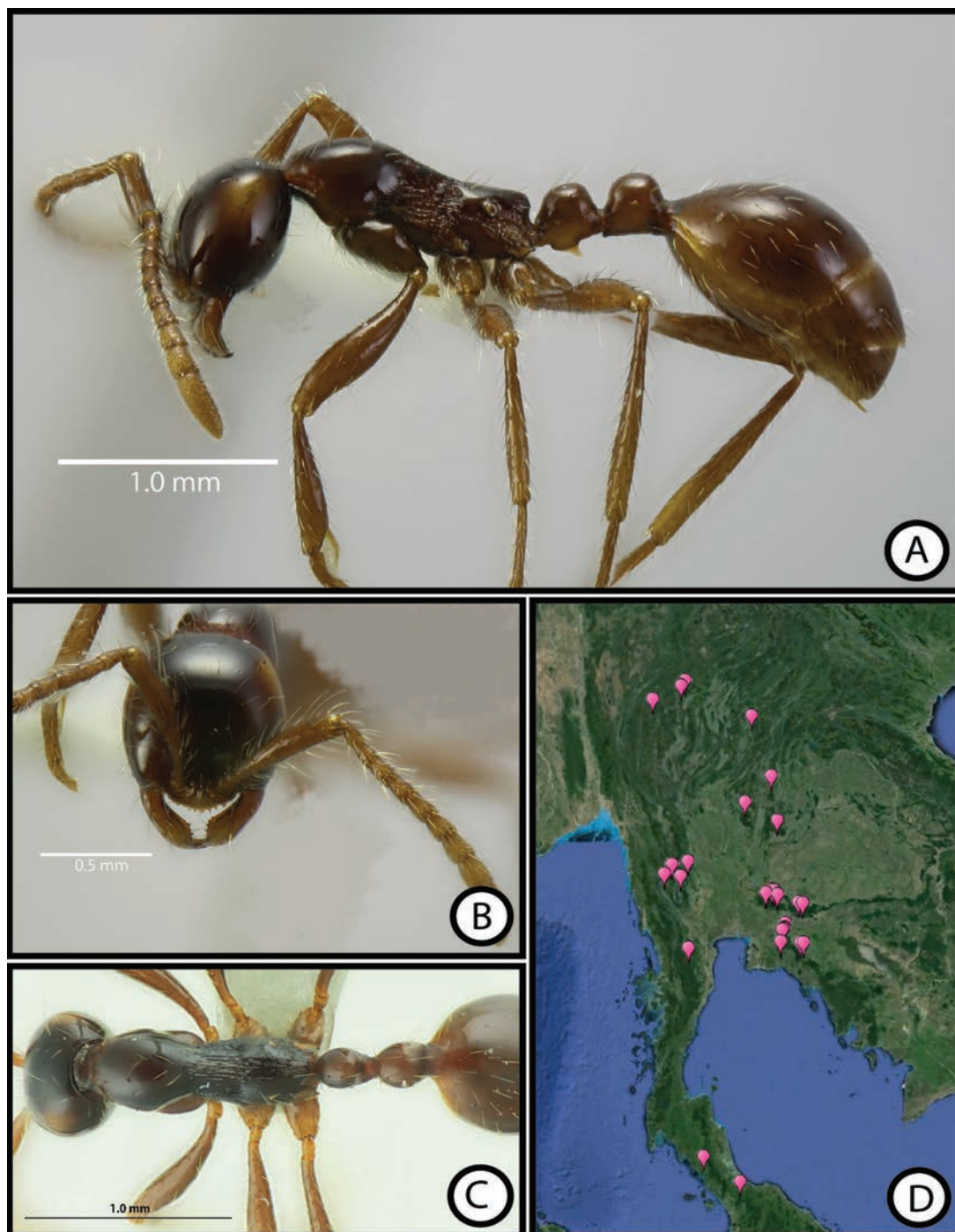


Figure 17. *Aenictus hodgsoni*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

29 May 2004, W. Jaitrong leg., WJT04-N001 (AMK, SKYC, THNHM); same loc., 29 May 2004, W. Jaitrong leg., WJT04-N003 (THNHM). WESTERN: Tak Prov., Thung Yai, DEF, 4 Jan. 1999, W. Jaitrong leg. (AMK, SKYC, THNHM); same loc., 25 May 2000, W. Jaitrong leg., WJT00-TY10 (AMK, SKYC, THNHM); same loc., 25 May 2000, W. Jaitrong leg., WJT25v00-1 (THNHM); same loc., 24 Sep. 2014, W. Jaitrong leg., WJT240914-2 (THNHM); same loc., 20 Dec. 2000, A. Suwannasri leg. (AMK); Kanchanaburi Prov., Sri Sawat Dist., 15 Aug. 2014, W. Jaitrong leg., WJT1008-1 (THNHM); same loc., 1 Jun. 2010, S. Hasin leg., SH10-TH02 (THNHM); Kanchanaburi Prov., Thong Pha Phum Dist., 9 Mar. 2005, Watana leg. (THNHM). NORTHEASTERN: Pitsanulok Prov., Thung Salang Luang, 10 Oct. 1999, W. Jaitrong leg., WJT99-TH70 (AMK, SKYC, THNHM); same loc., 17 Sep. 1997, W. Jaitrong leg., WJT97-TSLL01 (AMK, SKYC, THNHM); Loei Prov., Phu Luang, 11 Apr. 2008, W. Jaitrong leg., WJT08-PL01 (AMK, SKYC, THNHM); Chaiyaphum Prov., Phu Kheao, 30 Jan. 1999, W. Jaitrong leg., WJT99-AG01 (AMK, SKYC, THNHM); Nakhon Ratchasima Prov., Khao Yai, 700 m alt., 29 May 2000, Sk. Yamane leg., TH00-SKY-07 (SKYC, THNHM); same loc., 29 Oct. 2000, W. Jaitrong leg., TH00-WJT01 (AMK, SKYC, THNHM); same loc., 25 May 2006, W. Jaitrong leg., WJT250506-7 (THNHM); same loc., 25 May 2006, W. Jaitrong leg., WJT250506-5 (THNHM); same loc., 25 May 2006, W. Jaitrong leg., WJT250506-3 (THNHM). CENTRAL: Uthai Thani Prov., Ban Rai Dist., Kan Ma Kud Village, 18 Jun. 2010, W. Jaitrong leg., HKK10-60-02 (AMK, THNHM); Saraburi Prov., Khao Yai, Korkod Waterfall, 16 Aug. 2002, S. Hasin leg. (AMK); Petchaburi Prov., Kang Krachan, 26 Mar. 2007, W. Jaitrong leg., WJT07-TH447 (THNHM). EASTERN: Sakhaio Prov., Pang Sida, 29 May 2006, W. Jaitrong leg., WJT06-E379 (AMK,

SKYC, THNHM); same loc., 29 May 2006, W. Jaitrong leg., WJT06-E380 (AMK, THNHM); Chachoengsao Prov., Khao Ang Reu Nai, 29 May 2003, W. Jaitrong leg., WJT03-E380 (AMK, SKYC, THNHM); same loc., 25 Jun. 2003, W. Jaitrong leg., WJT03-TH214 (THNHM); same loc., Thatakiab Dist., 25 Apr. 2003, W. Jaitrong leg., WJT03-TH35 (AMK, SKYC, THNHM); same loc., 29 Apr. 2003, W. Jaitrong leg., WJT03-TH38 (THNHM); same loc., Sampran, 27 Feb. 2003, W. Jaitrong leg., THNHM-I03-3045 (AMK, SKYC, THNHM); same loc., DEF, Lumchangwad, 29 Jul. 2005, W. Jaitrong leg., WJT05-E210 (AMK, SKYC, THNHM); same loc., 26 Oct. 2002, W. Jaitrong leg., WJT02-TH157 (THNHM); Chanthaburi Prov., Khao Soi Dao, 19 Jul. 1997, Sk. Yamane leg. TH97-SKY-02 (SKYC, THNHM); same loc., 3 Jun. 2001, L. Satarak leg., WJT01-TH600 (THNHM); Chanthaburi Prov., Pong Nam Ron Dist., Khlong Tab Mak waterfall, 18 May 2008, W. Jaitrong leg., WJT08-E172 (AMK, SKYC, THNHM); Chanthaburi Prov., Pong Nam Ron Dist., Tabsai, Khao Kuar, 19 May 2008, W. Jaitrong leg., WJT08-E202 (AMK, SKYC, THNHM); same loc., Entomology Research Station, 7 Mar. 2008, W. Jaitrong leg., WJT08-E206 (THNHM); Rayong Prov., Klaeng Dist., Khao Chamao-Khao Wong, 20 May 2008, W. Jaitrong leg., WJT08-E217 (AMK, SKYC, THNHM). SOUTHERN: Trang Prov., Palian Dist., plantation, 31 Nov. 1999, W. Jaitrong leg., WJT99-TH68 (AMK, SKYC, THNHM); Songkhla Prov., Khao Nam Khang, 25 Jul. 1997, Sk. Yamane leg. (SKYC, THNHM).

Distribution. South China, Hong Kong, Vietnam, Laos, Cambodia, Myanmar (Jaitrong and Yamane, 2011), Thailand (Fig. 17D), and Indonesia (Java, Bali, and Lombok) (Jaitrong and Yamane, 2011).

Bionomics. *Aenictus hodgsoni* is dominant in the continental Southeast Asia, distributed from lowland to highland in varied forest types (hill evergreen forest, dry evergreen

forest, evergreen rainforest, mixed deciduous forest, and savanna) (see Jaitrong and Yamane, 2011). This species is active in the day and night. I found it preying on other ant species such as *Anoplolepis gracilipes* (F. Smith) (WJT05-E210 and WJT250506-3), *Camponotus rufoglaucus* (Jerdon) (WJT06-E379), *Crematogaster* sp. (WJT250506-5), *Iridomyrmex anceps* (Roger) (WJT06-380), *Pheidole dugasi* Forel (WJT250506-7), and also on cockroaches (WJT06-E379).

Remarks. Jaitrong *et al.* (2011) removed this species from synonymy with the most closely related *A. fergusonii* Forel based on the following characteristics: propodeum partly smooth and shiny in *A. hodgsonii* (entirely punctate in *A. fergusonii*); propodeum in profile almost straight dorsally in *A. hodgsonii* (slightly convex in *A. fergusonii*); declivity of propodeum above without transverse carina in *A. hodgsonii* (with a distinct transverse carina in *A. fergusonii*). *A. brevinodus* Jaitrong *et al.* (Sulawesi) and *A. bodongjaya* Jaitrong *et al.* (Sumatra) are also very similar to this species in having sparse standing hairs mixed with sparse short hairs on the head and pronotum, and the mesopleuron entirely densely sculptured. *A. hodgsonii* can be distinguished from *A. bodongjaya* by the femora extensively superficially reticulate and shiny, tibiae very finely reticulate (legs entirely smooth and shiny in *A. bodongjaya*), and separated from *A. brevinodus* by the petiole slightly longer than high (clearly shorter than high in *A. brevinodus*).

***Aenictus hottai* Terayama *et al.* Yamane**
(Fig. 18A-D)

Aenictus hottai Terayama and Yamane, 1989: 598, figs. 1-2; Bolton, 1995: 59; Jaitrong and Nabhitabhata, 2005: 11; Wiwatwitaya and Jaitrong, 2011: 559, figs 1A-D, 3; Jaitrong, 2013: 339.

Types. Holotype and nine paratype workers (MZB and SKYC) from Indonesia, W. Sumatra, Ulu Gadut nr Padang, 27-30. VIII.1985, Sk. Yamane leg. (Two paratypes in SKYC were examined).

Measurements. Workers (n = 10): TL 4.65-5.00 mm; HL 1.05-1.13 mm; HW 0.93-1.00 mm; SL 0.93-1.00 mm; ML 1.63-1.75 mm; PL 0.40-0.43 mm; CI 88-91; SI 93-100.

Description of worker. Head in full-face view slightly longer than broad, with sides convex and posterior margin almost straight. Antenna 10-segmented; scape almost reaching posterolateral corner of head. Frontal carina not reaching midlength of head, well developed anteriorly and poorly developed posteriorly; parafrontal ridge extending posteriad less than 1/3 of head length; seen in profile its anterior part raised high and subtriangular, and poorly developed posteriorly. Anterior clypeal margin convex, lacking denticles. Mandible broad and triangular, its masticatory margin with a large apical tooth followed by a small subapical tooth and a series of 16-17 minute denticles of uniform size; basal margin of mandible lacking denticles. Mesosoma stout; anepisternum clearly demarcated from katepisternum. Propodeum in profile with almost straight dorsal outline; propodeal junction acutely angulate; opening of propodeal spiracle clearly circular with its diameter about 2.4 times as long as diameter of postpetiolar spiracle. Petiole round and almost as long as high; posterior slope of petiole seen in profile feebly convex, seen from above with blunt lateral carinae but not margined basally by a carina; subpetiolar process large with anterior corner rounded, posteroventrally produced into an arm with a blunt tip; margin connecting anterior corner and the tip of the arm clearly concave. Postpetiole slightly longer than petiole, its dorsal outline slightly elevated posteriorly.

Head, mesosoma, petiole, postpetiole, and legs densely punctate and opaque; mandible densely punctate extensively, finely striate

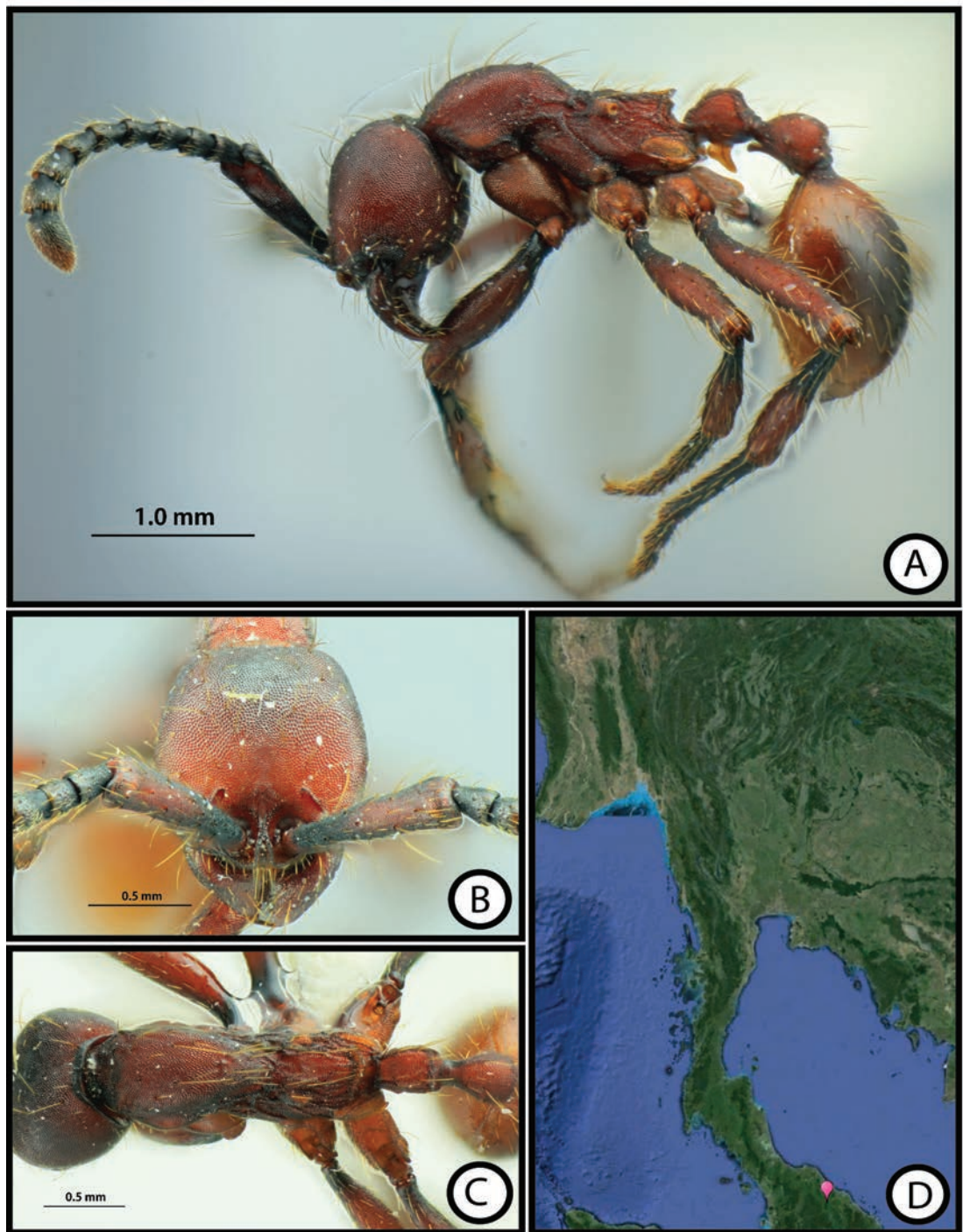


Figure 18. *Aenictus hottai*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

along basal margin, and smooth and shiny along masticatory margin and at apex; antennal scape micropunctate. Propodeal dorsum with several short longitudinal ridges in front of junction. Posterior face of petiole wrinkled. Gaster with weaker sculpturation than head, finely and superficially reticulate, subopaque and slightly shining.

Head with a pair of long standing hairs mixed with relatively sparse short hairs over the surface; mesosoma with relatively sparse long standing hairs mixed with sparse short hairs over the surface; length of the longest pronotal hairs 0.50-0.53 mm. Entire Body dark reddish-brown.

Non-type material examined. SOUTHERN: Narathiwat Prov., Wang Dist., 25 Sep. 2001, K. Eguchi leg., Eg01-TH-668 (= TH01-WJT132, AMK, SKYC, THNHM); same loc., 9 Apr. 2003, N. Noon-anant leg., NN090403-1 (AMK, THNHM).

Distribution. Thailand (Fig. 18D), Malaysia Sarawak), Indonesia (Sumatra) (Wiwatwitaya and Jaitrong, 2011).

Bionomics. Rościszewski and Mashchitz (1994), Malsch *et al.* (2003), and Wiwatwitaya and Jaitrong (2011) reported that *A. hottai* was collected in lowland primary forests. This species is probably a Sundaland species; so far the northern limite of its range in latitude is the Thai-Malay border (ca. 7°N) near the Kangar-Pattani line (see Woodruff, 2003; Wiwatwitaya and Jaitrong, 2011). Rościszewski and Mashchitz (1994) reported that in the Pasoh Forest Reserve *A. hottai* preyed on ants of the ponerine genus *Odontomachus*.

Remarks. *Aenictus hottai* is very similar to *A. yamanei* Wiwatwitaya et Jaitrong in general appearance as they share the dense punctation on the head and mesosoma, the peculiar subpetiolar process and the superficially reticulate first gastral segment. However, *A. hottai* is separated from *A. yamanei* by the following conditions: body much larger (HW 0.93-1.00 mm, ML 1.63-1.75 mm in *A. hottai*

while HW 0.63-0.70 mm, ML 1.22-1.27 mm in *A. yamanei*), head relatively shorter (CI 88-91 vs 79-85), posterior face of petiole feebly convex and wrinkled and not margined with a rim (shallowly concave without longitudinal wrinkles and margined with a very thin rim in *A. yamanei*).

Aenictus jarujini Jaitrong et Yamane (Fig. 19A-D)

Aenictus jarujini Jaitrong and Yamane, 2010: 329, figs 1-2; Jaitrong, 2013: 340, fig. 1B.

Types. Holotype and 64 paratype workers (BMHN, MCZC, SKYC, THNHM, examined) from northern Thailand, Mae Hong Son Prov., Haui Nam Dang National Park, disturbed area, 7 Mar. 2008, W. Jaitrong leg., WJT08-HND20.

Measurements. Worker (n = 20): TL 3.4-3.8 mm; HL 0.83-0.93 mm; HW 0.70-0.80 mm; SL 0.40-0.47 mm; ML 1.13-1.25 mm; MTL 0.50-0.55 mm; PL 0.25-0.30 mm; CI 82-89; SI 55-62.

Description of worker. Head in full-face view subrectangular, slightly longer than broad, with feebly convex sides and slightly concave posterior border; occipital margin concave bearing a narrow collar; area between frontal carina and parafrontal ridge depressed. Antenna 9-segmented; scape short, extending to mid-length of head in full-face view; antennal segment II small, nearly as long as broad; III-V broader than long; VI-VIII nearly as long as broad; the terminal segment (IX) very large, almost as long as VII and VIII combined. Frontal carinae well developed, narrow, often with a longitudinal furrow (in fused portion of the carinae) and extending half length of head; seen in profile its dorsal outline straight anteriorly and sloping gradually posteriad. Clypeus short and roundly produced anteriorly, lacking anterior teeth. Mandible with apical tooth large and curved, followed by 10-15 denticles

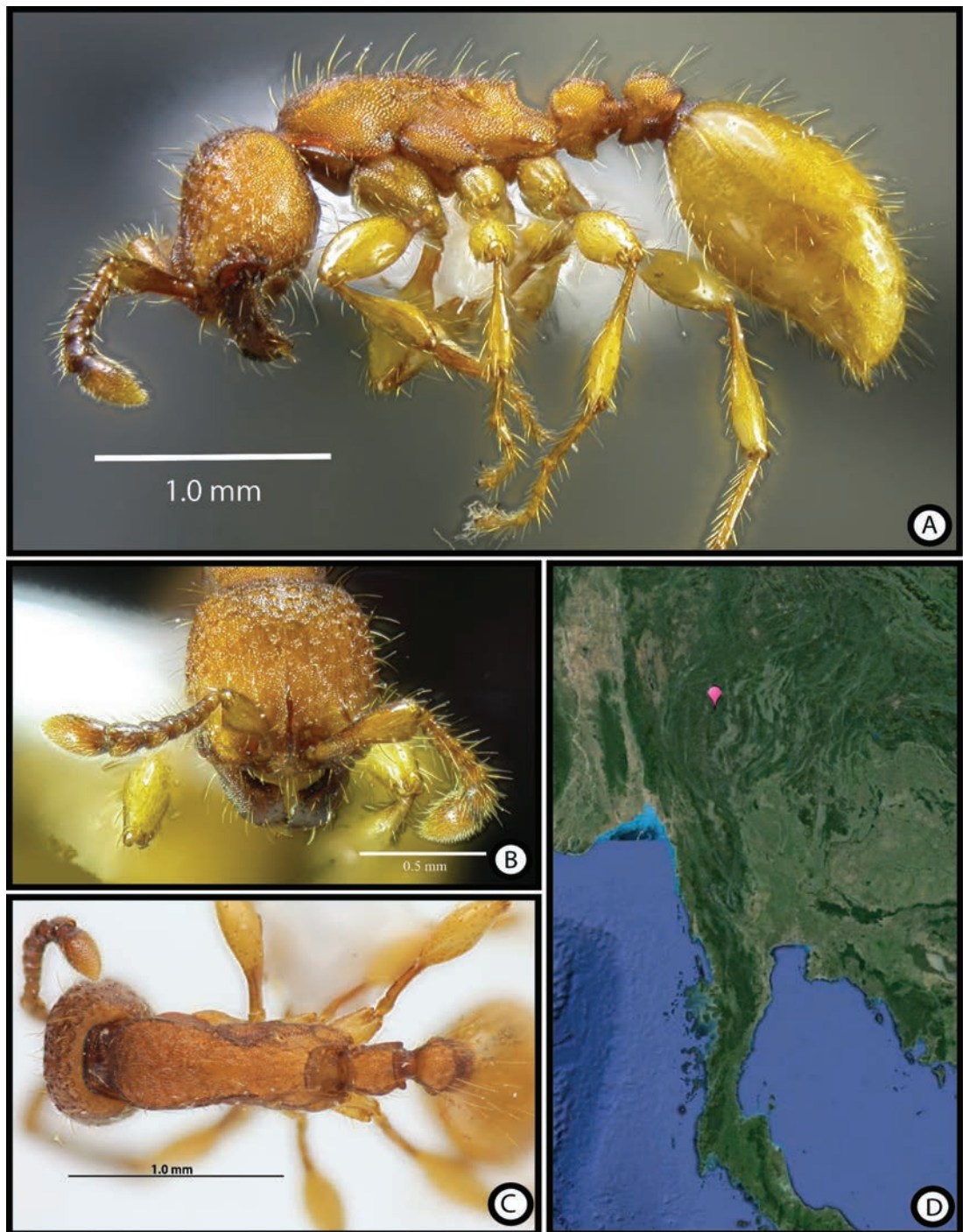


Figure 19. *Aenictus jarujini*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

of two sizes, the larger alternating with 2 or 3 smaller; basal margin of mandible lacking denticles. Mesosoma rather robust, seen from above broader anteriorly; posterior half almost parallel-sided; mesonotum laterally margined with ridges; in profile pronotum weakly convex dorsally and promesonotum sloping gradually to metanotal groove; propodeum slightly lower and weakly convex dorsally; mesopleuron not clearly demarcated from metapleuron; upper portion of meso-metapleura extensively impressed. Propodeal junction acutely angulated; declivity of propodeum shallowly concave, encircled with a narrow rim. Petiole higher than broad, seen from above almost parallel-sided, anteriorly margined by a transverse carina, while posterior face encircled with a rim similar to that of propodeum; subpetiolar process low and subrectangular; postpetiole similar to petiole in shape and length, but without a well-demarcated posterior face, roundly convex above, impressed near posterior margin, anteroventrally produced as a blunt angle directed downward and forward.

Dorsum of head in posterior half with dense macropunctures (almost reticulate) and micropunctures, and in anterior half with micropunctures and several longitudinal rugulae; sides of head with micropunctures, and sparse and shallow macropunctures. Mandible largely with dense minute punctures, but smooth apically and along masticatory margin. Upper face of antennal scape basally with dense micropunctures and apically much smoother. Dorsal surface of mesosoma weakly and irregularly sculptured, with ill-defined micropunctures, and mat; lateral face of mesosoma densely micropunctate. Petiole dorsally with very superficial reticulum superimposed with dense micropunctures (a condition similar to posterodorsal part of head); postpetiole densely micropunctate. Gaster smooth and shining except for extreme basal portion. Femora and tibiae smooth and shiny.

Body with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs approximately 0.20–0.25 mm long. Head, mesosoma and waist pale brown; gaster and legs yellow; mandible blackish brown.

Non-type material examined. NORTHERN: Mae Hong Son Prov., Haui Nam Dang National Park, disturbed area, 7 Mar. 2008, W. Jaitrong leg., WJT08-HND20 (same colony as the holotype, THNHM).

Distribution. Thailand (Fig. 19D).

Bionomics. This species is very rare and known only from the type locality (around 1000 m alt.). The specimens were collected from a bivouac under a stone in a disturbed area nearby a hill-evergreen forest during dry season.

Remarks. *Aenictus jarujini* is very similar and closely related to *Aenictus latifemoratus* Terayama et Yamane, but the two are easily separated by the following characters: number of antennal segments (9 in *A. jarujini*; 8 in *A. latifemoratus*); shape of petiolar node (node subrectangular and relatively low, posteriorly margined with a rim in *A. jarujini*; node without a distinct rim in *A. latifemoratus*), condition of subpetiolar process (very low in *A. jarujini*; well developed and subtriangular in *A. latifemoratus*); sculpturing on head (strongly macropunctate in posterior half of head dorsum, other regions only weakly macropunctate in *A. jarujini*; strongly macropunctate or reticulate extensively on dorsum and sides of head in *A. latifemoratus*).

***Aenictus khaoyaiensis* Jaitrong et Yamane**
(Fig. 20A-D)

Aenictus khaoyaiensis Jaitrong and Yamane, 2013: 194, fig. 10A-C.

Types. Holotype and 44 paratype workers from NE. Thailand, Nakhon Ratchasima Prov., Khao Yai N.P., tropical rainforest, 31 May 2000, Sk. Yamane leg. TH00-SKY-35

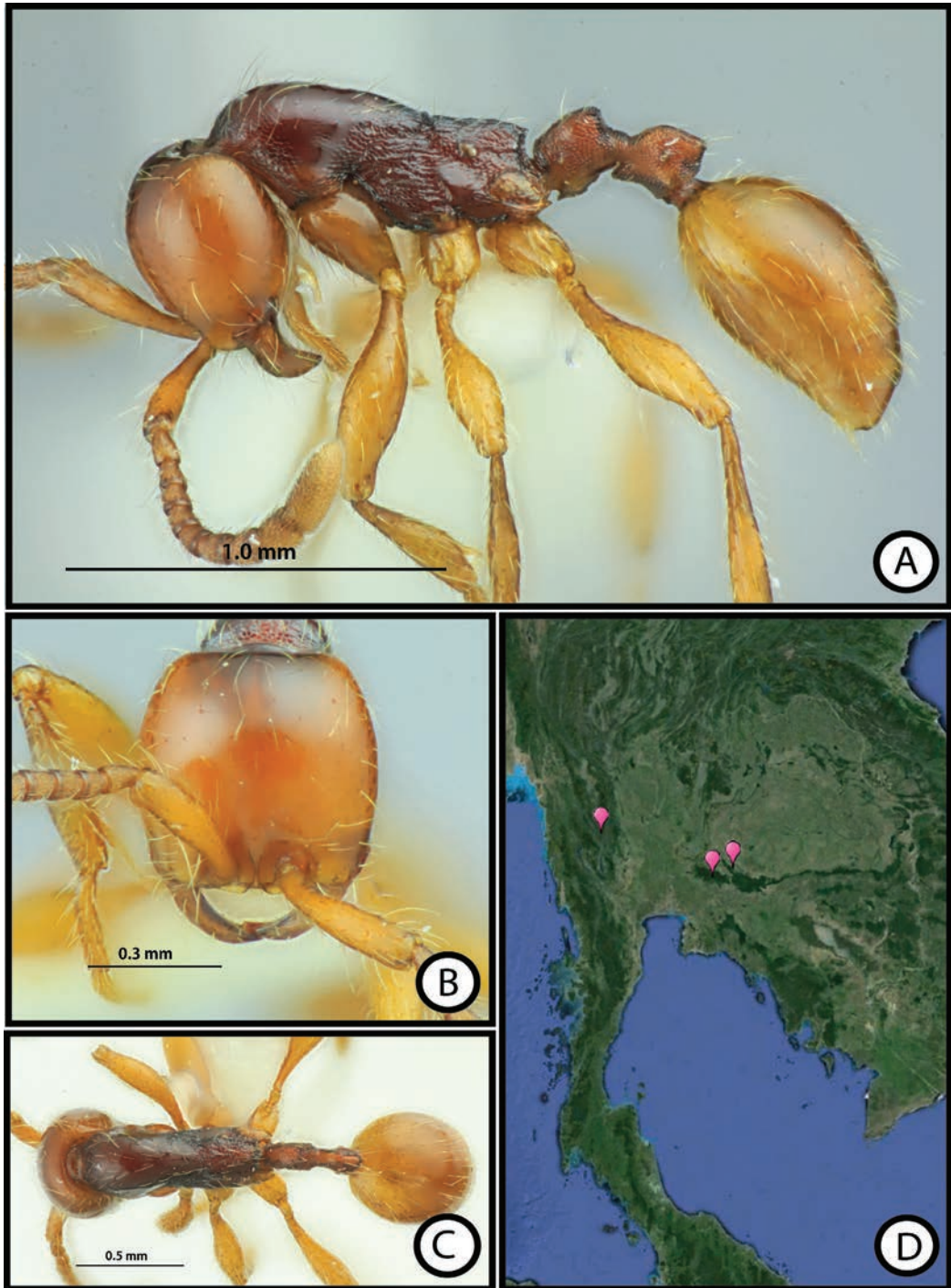


Figure 20. *Aenictus khaoyaiensis*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

(BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 10): TL 2.45-3.00 mm; HL 0.50-0.60 mm; HW 0.48-0.60 mm; SL 0.38-0.43 mm; ML 0.78-0.93 mm; PL 0.21-0.25 mm; CI 95-100; SI 65-79.

Description of worker. Head in full-face view subrectangular, almost as long as broad, sides weakly convex, posterior margin almost straight or feebly concave. Antenna 10-segmented; scape relatively short, slightly extending beyond half of head length. Frontal carina slightly extending beyond the level of posterior margin of torulus. Parafrontal ridge almost absent. Anterior clypeal margin feebly concave, concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with 4 denticles, including a large apical tooth; basal margin feebly concave. Maximum width of gap between anterior clypeal margin and mandibles approximately 2.8 times as broad as maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; mesopleuron demarcated from metapleuron by a shallow groove; metapleural gland bulla relatively large, its maximum diameter 2.33-2.80 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile extremely lower than pronotum and relatively short with feebly convex dorsal outline; propodeal junction angulate, overhanging the declivitous face of propodeum; the declivity broadly and shallowly concave, encircled with a distinct rim. Petiole almost as long as high, with its dorsal outline slightly elevated posteriorly; subpetiolar process low, with its anteroventral corner angulate and ventral margin weakly convex. Postpetiole subrectangular, almost as long as petiole, with its dorsal outline slightly elevated posteriorly.

Head entirely smooth and shiny. Mandible very finely striate. Antennal scape superficially sculptured but somewhat shiny. Promesonotum smooth and shiny except for anteriormost

portion punctate; mesopleuron wrinkled and reticulate; in addition mesopleuron with several irregular longitudinal rugae; metapleuron reticulate, partly smooth and shiny; petiole entirely reticulate; postpetiole reticulate except for dorsal faces smooth and shiny. Legs smooth and shiny except basalmost portions of femora and tibiae micropunctate.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with relatively dense decumbent hairs; longest pronotal hairs 0.18-0.20 mm long. Head including mandible and antennal scape, gaster and legs yellowish brown; mesosoma, petiole and postpetiole reddish brown but petiole and postpetiole paler than mesosoma.

Non-type material examined. WESTERN: Tak Prov., Umphang Dist., 20 Oct. 2000, S. Hasinleg. (SKYC, THNHM); NORTHEASTERN: Nakhon Ratchasima Prov., Sakaerat ERS., 15 Jul. 2001, C. Bourmas leg. (SKYC, THNHM).

Distribution. Thailand (Fig. 20D).

Bionomics. This species inhabits both lowland primary and disturbed forests.

Remarks. *Aenictus khaoyaiensis* is similar to *A. watanasiti*. For discrimination, see under *A. watanasiti*.

Aenictus laeviceps (F. Smith) (Fig. 21A-D)

Typhlatta laeviceps F. Smith, 1857: 79.

Aenictus (*Typhlatta*) *laeviceps*: Wheeler, 1930: 199 (in key), 200-203 (queen).

Aenictus laeviceps: Wilson, 1964: 467, figs 15-17, 88 (part); Bolton, 1995: 60 (part); Jaitrong and Nabhitabhata, 2005: 12; Jaitrong and Yamane, 2011: 36, figs 57-62; Jaitrong, 2013: 340.

Eciton (*Aenictus*) *fergusoni* var. *sundaica* Karavaiev, 1927: 7 (synonymized with *A. laeviceps* by Wilson, 1964: 467). Type locality: Prinsen I. [Panaitan I.], Sunda Strait, off western coast of Java.

Types. *Typhlatta laeviceps*: Lectotype and two

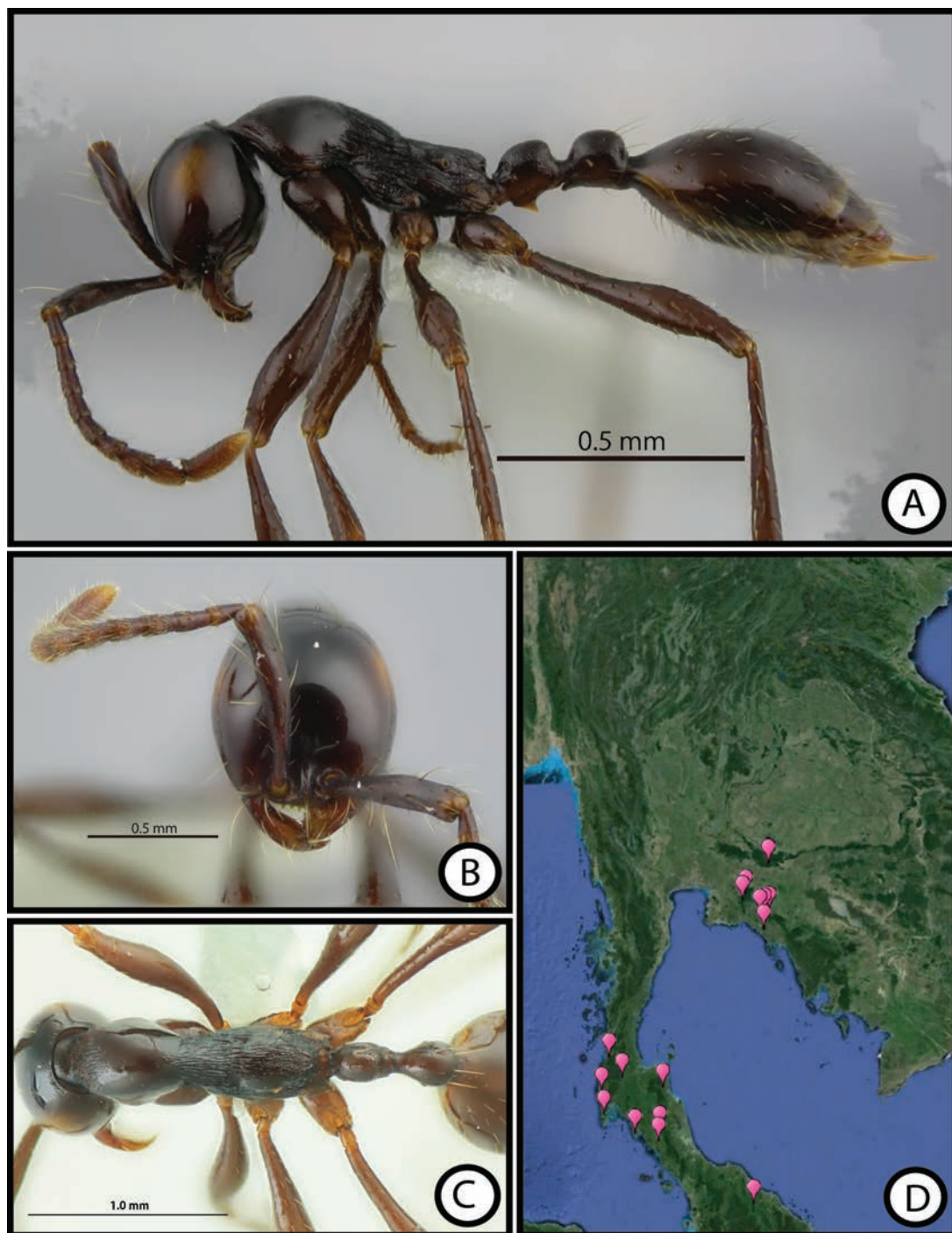


Figure 21. *Aenictus laeviceps*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

paralectotype workers from Borneo, Sarawak (BMNH and OXUM, examined).

Measurements. A worker lectotype: TL 4.15 mm; HL 0.93 mm; HW 0.80 mm; SL 0.83 mm; ML 1.35 mm; PL 0.33 mm CI 86; SI 103.

Non-type workers (n = 9): TL 3.90-4.15 mm; HL 0.88-0.92 mm; HW 0.70-0.82 mm; SL 0.73-0.87 mm; ML 1.30-1.40 mm; PL 0.28-0.33 mm CI 86-92; SI 103-113.

Description of worker. Head in full-face view clearly longer than broad, with sides and posterior margin strongly convex; occipital margin bearing a carina. Antenna 10-segmented, relatively long; scape almost reaching the posterolateral corner of head; antennal segments II-X each longer than broad. Frontal carina short, slightly extending beyond the level of posterior margin of torulus. Anterior margin of clypeus convex, bearing 6-8 denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth, 4-5 denticles, and a medium-sized basal tooth; basal margin of mandible lacking denticles. Promesonotum in profile distinctly convex dorsally; propodeum much lower than promesonotum, and in profile its dorsal outline almost straight; propodeal junction right-angled; declivity of propodeum weakly concave, encircled with an indistinct rim. Mesopleuron demarcated from metapleuron by a shallow groove. Petiole longer than high, in profile its dorsal outline almost straight or weakly convex in posterior portion; subpetiolar process well developed, its lobe surmounted by a thin, acute flange that is directed downward and backward; postpetiole slightly shorter than petiole, in dorsal view scarcely longer than broad.

Head entirely smooth and shiny. Antennal scape microreticulate and subopaque, slightly shining. Mandible finely microsculptured and feebly shiny. Pronotum smooth and shiny, its anteriormost portion punctate; mesothorax, metapleuron, and propodeum with dense punctures; upper portion of mesopleuron and

metapleuron with 15-20 irregular longitudinal rugulae; propodeum with approximately 40 densely packed, nearly straight, fine rugulae; interrugular spaces irregularly microreticulate, and opaque to feebly shiny. Petiole with dense punctures; postpetiole entirely smooth and shiny. Femora extensively but superficially reticulate and shiny; tibiae very finely reticulate.

Head with a pair of standing hairs on vertex; mesosoma devoid of pilosity. Entire body dark reddish brown. Typhlatta spot located anterior to occipital corner.

Non-type material examined. WESTERN: Tak Prov., Umphang Dist., Umphang W.S., Mae hlong Ki, 25 Jan. 2015, W. Jaitrong leg., TH15-WJT-030 (THNHM); same loc., Thi Lor Su Waterfall, 26 Jan. 2015, W. Jaitrong leg., TH15-WJT-075; Kanchanaburi Prov., Thong Pha Phum Dist., 20 Dec. 2003, W. Jaitrong leg. (AMK). EASTERN: Sakhaio Prov., Pang Sida, 29 May 2006, W. Jaitrong leg., WJT06-E382 (AMK, SKYC, THNHM); same loc., 30 May 2006, W. Jaitrong leg., WJT06-E382 (THNHM); Chonburi Prov., Khao Ang Reu Nai, Khlong Ploy, 6 Apr. 2004, W. Jaitrong leg., WJT04-E065 (THNHM); Chachoengsao Prov., Khao Ang Reu Nai, Baw Thong, 29 Oct. 2005, W. Jaitrong leg., THNHM-I2005-3401 (AMK, SKYC, THNHM); same loc., 25 Apr. 2005, W. Jaitrong leg., THNHM-I2005-3465 (THNHM); same loc., 26 Oct. 2005, W. Jaitrong leg., THNHM-I2005-3400 (THNHM); same loc., 26 Apr. 2003, W. Jaitrong leg., WJT03-TH13 (THNHM); same loc., 28 Jun. 2003, W. Jaitrong leg., WJT03-TH209 (THNHM); same loc., 27 May 2005, W. Jaitrong leg., WJT05-E201 (THNHM); same loc., 29 Jan. 2005, W. Jaitrong leg., WJT05-E500 (THNHM); same loc., 29 Jan. 2005, W. Jaitrong leg., WJT05-E501 (THNHM); Chanthaburi Prov., Nam Tok Pheao, Nam Tok Troknong Waterfall, EF, 22 Nov. 2003, D. Wiwatwitaya leg., DEW03-TH001 (AMK); same loc., 29 Nov. 2003, W. Jaitrong leg.,

WJT02-TH492 (AMK, SKYC, THNHM); same loc., 300-500 m alt. 23 Nov. 2003, Sk. Yamane leg., TH03-SKY-134 (SKYC, THNHM); same loc., 24 Nov. 2003, W. Jaitrong leg., TH03-TH-592 (THNHM); Chanthaburi Prov., Khao Soi Dao, 19 Jul. 1997, Sk. Yamane leg., TH99-SKY-04 (SKYC, THNHM); same 20 Jan. 2008, T. Jeenthong leg., 08-99 (THNHM); same loc., 20 Jan. 2008, W. Jaitrong leg., WJT08-TH98 (THNHM); same loc., 20 Jan. 2008, W. Jaitrong leg., WJT08-TH99 (THNHM); same loc., 17 May 2008, W. Jaitrong leg., WJT08-E162 (THNHM); same loc., 16 Apr. 2007, W. Jaitrong leg., WJT07-TH613 (THNHM); Chanthaburi Prov., Pong Nam Ron Dist., Khlong Tab Mak, 18 May 2008, W. Jaitrong leg., WJT08-E173 (THNHM); Chanthaburi Prov., Khao Kitchakud, 15 Mar. 2006, Watana leg., Q6 (THNHM); Trat Prov., Koh Kud Dist., 17 Apr. 2009, T. Jeenthong leg., TJ170409-1 (THNHM). **SOUTHERN:** Phang Nga Prov., Khao Lak Lam Loo, EF, 3 Jun. 2000, W. Jaitrong leg., WJT00-KL01 (AMK, SKYC, THNHM); Ranong Prov., Khlong Naka, EF, 12 Aug. 2009, W. Jaitrong leg., WJT09-TH2049 (AMK, SKYC, THNHM); Krabi Prov., Koh Lanta Dist., Khlong Chak Waterfall, 4 May 2013, W. Jaitrong leg., WJT040513-1 (THNHM); same loc., 4 May 2013, W. Jaitrong leg., WJT040513-3 (THNHM); Phuket Prov., Thalang Dist Bang Kanun Forest Plantatipn, 7 Apr. 2013, W. Jaitrong leg., WJT070413-3 (THNHM); Surat Thani Prov., Khlongsang, 15 Oct. 2011, W. Jaitrong leg., TH11-WJT-132 (THNHM); Nakhon Si Thammarat Prov., Khao Nan, 11 Jul. 2007, W. Jaitrong leg., WJT07-KN02 (AMK, SKYC, THNHM); same loc., San Yen, 1,095 m alt., 8 Apr. 2007, W. Jaitrong leg., WJT07-TH682 (AMK, SKYC, THNHM); same loc., Yod Nam, 1 Nov. 2008, T. Jeenthong leg., TJ011108-01 (THNHM); Trang Prov., Khao Chong Botanical Garden, 29 Oct. 2007, P. Kosolpanyapiwat leg., PPK07-4 (AMK, SKYC, THNHM); same loc., EF, 10 Aug. 2009, W. Jaitrong leg., WJT09-TH2028 (AMK,

SKYC, THNHM); same loc., 25 May 2005, D. Lohman leg., KC-A007-01 (SKYC, THNHM); Trang Prov., Yantakhao Dist., Thung Khai B.G., 9 Aug. 2009, W. Jaitrong leg., WJT09-TH2011 (AMK, SKYC, THNHM); same loc., DEF, 10 Aug. 2009, W. Jaitrong leg., WJT09-TH2016 (AMK, SKYC, THNHM); Songkhla Prov., Khao Kor Hong, Songkhlanakarin University, 30 Aug. 2013, W. Jaitrong leg., WJT300813-04 (THNHM); same loc., 19 Oct. 2011, W. Jaitrong leg., TH11-WJT-160 (THNHM); Songkhla Prov., Ton Nga Chang, 7 Jun. 2002, N. Noon-anant leg., WJT04-S59 (THNHM); Narathiwat Prov., Wang Dist., 8 Nov. 2002, W. Jaitrong leg., TH02-WJT-304 (THNHM).

Distribution. Thailand (Fig. 21D), Malaysia (W. Malaysia, Sabah, and Sarawak), Indonesia (Sumatra), Brunei, and Philippines (Jaitrong and Yamane, 2011).

Bionomics. *Aenictus laeviceps* is widespread and dominant in rainforests of Southeast Asia (Gotwald, 1995). I found it foraging in lowland seasonal forests (dry evergreen forest) in eastern Thailand. A single colony may contain as many as 60,000 to 110,000 workers (Schneirla and Reyes, 1966).

This species forages mainly on the ground (Hirosawa *et al.*, 2000) but sometimes climbs up trees. I observed this species preying on other ants such as *Anoplolepis glacilipes* (WJT09-TH2016), *Camponotus* (WJT09-TH2028), *Euprenolepis* (WJT09-TH2028), *Polyrhachis* (THNHM-I2005-3400), *Pheidole dugasi* (WJT06-E382), *Pseudolasius* (WJT04 0513-1), and also on grasshoppers (WJT09-TH2016) and leaf beetles (THNHM-I2005 -3400). Wilson (1964) mentioned that *A. laeviceps* preyed on other ant species such as *Camponotus* (*Tanaemyrmex*) *carin*, *Diacamma* sp., *Echinopla* sp., *Hypoclinea* sp. [*Dolichoderus* sp.], *Myrmecaria* sp., *Pristomyrmex* sp., *Paratrechina longicornis*, *Polyrhachis* (*Polyrhachis*) *bellicosa*, *Polyrhachis* (*Myrmhopla*) sp., *Polyrhachis* (*Myrma*) sp., *Ponera* sp., *Vollenhovia* sp., and

also on the social wasp, *Ropalidia flavopicta*. Chapman (1964) found this species feeding on myriapods, termites, small staphylinid beetles, while Rościszewski and Maschwitz (1994) mentioned that ants of the genera *Crematogaster*, *Paratrechina*, *Pheidole*, *Polyrhachis*, and *Prenolepis* were the prey of *A. laeviceps*. Hashimoto and Yamane (2014) recorded more than ten ant genera as prey of this species in Lambir Hills National Park, Sarawak. Both adults and immatures were almost equally seen among the victims.

Remarks. *Aenictus laeviceps* is closely related to *A. breviceps* Forel (Java), *A. sonchaengi*, and *A. rotundicollis* Jaitrong et Yamane (Borneo) in having only 2 standing hairs on the vertex of the head. It has a more weakly convex promesonotum in profile than the last two (promesonotum strongly convex in *A. sonchaengi* and *A. rotundicollis*). It is also separated from them by the absence of standing hairs on the pronotum (more than 4 hairs present in *A. sonchaengi*; 2-4 hairs in *A. rotundicollis*). Another character separating *A. laeviceps* from *A. rotundicollis* is the relative length of the petiole, which is longer than high in the former but shorter than high in the latter. This species can be distinguished from *A. breviceps* as follows: mesonotum, metanotum, and propodeum entirely punctate in *A. laeviceps* (partly smooth and shiny in *A. breviceps*); pronotum without hairs (with 2-4 hairs in *A. breviceps*).

***Aenictus leptotyphlatta* Jaitrong et Eguchi**
(Fig. 22A-D)

Aenictus leptotyphlatta Jaitrong and Eguchi,
2010: 14, figs 1-2; Jaitrong, 2013: 340, fig. 1C.

Types. Holotype and 63 paratype workers (ACEG, BMNH, MCZC, MHNG, MSNG, NHMW, SKYC, THNHM, examined) from northern Thailand, Chiang Mai Province, the Campus of Chiang Mai University, 10 Jun. 2001, W. Jaitrong leg., WJT01-CMU01.

Measurements. Holotype and nine paratype workers (n = 10): TL 2.35-2.45 mm; HL 0.50-0.53 mm; HW 0.43-0.48 mm; SL 0.33-0.35 mm; ML 0.73-0.78 mm; MTL 0.38-0.45 mm; PL 0.18-0.20 mm; CI 85-90; SI 74-76.

Description of worker (holotype and paratypes). Head in full-face view subrectangular, longer than broad, with slightly convex sides and almost straight or very weakly concave posterior margin. Occipital margin of head lacking collar. Antenna 10-segmented; antennal scape short, reaching or little extending beyond the half length of head; antennal segments II-X each longer than broad; II longer than each of III-VI; VII, VIII and IX combined shorter than the terminal segment (X). Frontal carina short and thin extending posteriad, not beyond the level of posterior margin of torulus; anterior curve of frontal carina reaching or extending beyond anterior clypeal margin. Clypeus short, its anterior margin lacking denticles; median portion of anterior clypeal margin slightly convex and protruded anteriorly. Mandible subtriangular with a large apical tooth followed by 4-5 relatively large teeth on masticatory margin; basal margin of mandible sinuate with a series of 3-5 ill-defined denticles. With mesosoma in profile promesonotum weakly convex dorsally and sloping gradually to propodeum. Mesopleuron rather long; anepisternum demarcated from katepisternum by a groove. Propodeal junction convex or somewhat obtusely angulated; propodeal declivity laterally margined with a thin rim; opening of propodeal spiracle clearly circular with its diameter 1.5-2.0 times as long as diameter of petiolar spiracle; area below propodeal spiracle impressed; metapleural gland bulla 0.13-0.15 mm in maximum diameter, almost as long as postpetiolar node. Petiole narrow, seen from above almost parallel-sided; in profile its node distinctly longer than high, round dorsally; subpetiolar process well developed and triangular with apex directed

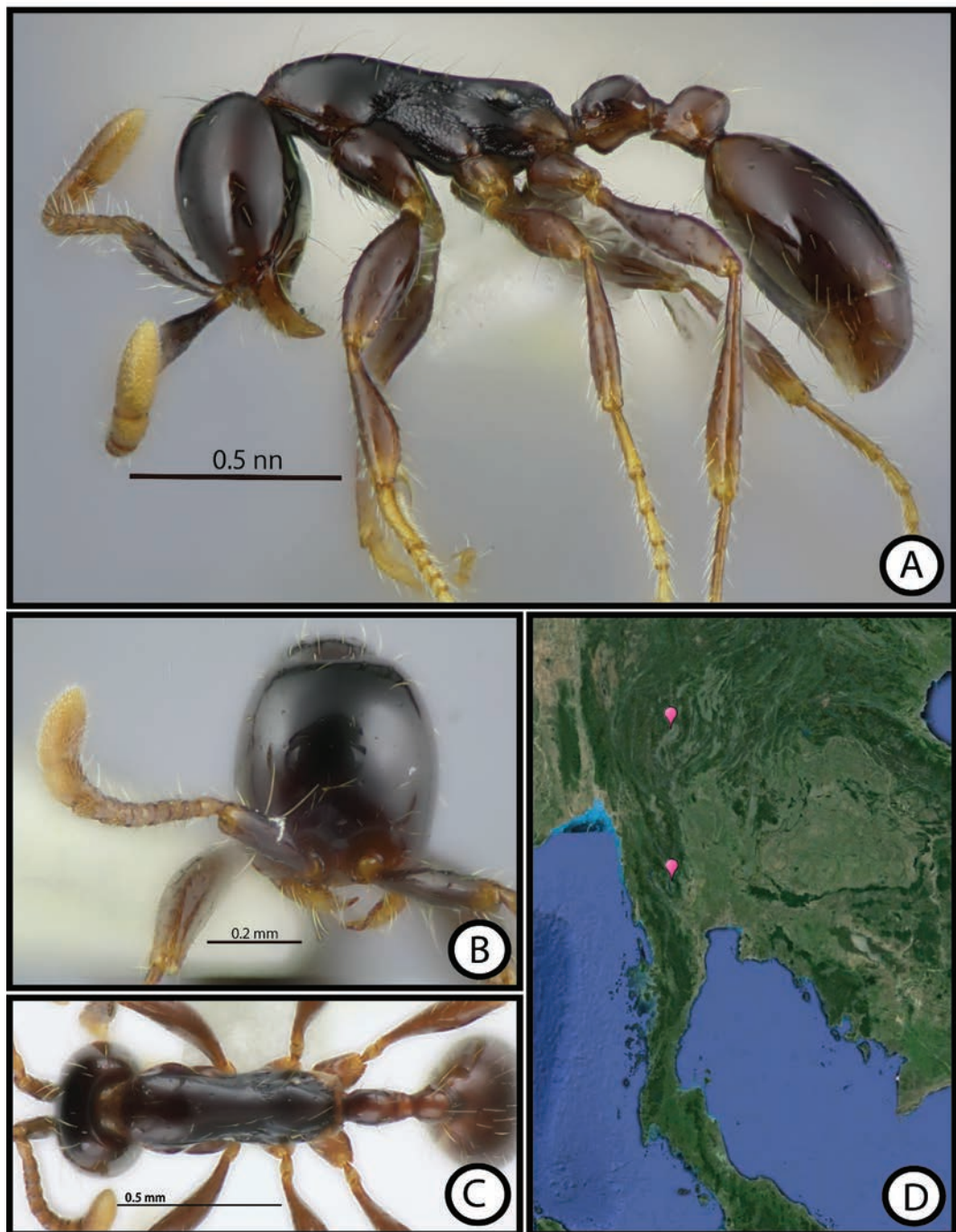


Figure 22. *Aenictus leptotyphlatta*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

downward. Postpetiole clearly shorter than petiole; its node almost as long as high. Gaster elliptical, narrowed anteriorly and posteriorly, in dorsal view 0.43-0.45 mm in maximum width.

Head and antennal scape smooth and shiny. Dorsum of mesosoma entirely smooth and shiny; mesopleuron with 10-12 longitudinal rugae and dense micropunctures; lower portion of metapleuron with dense micropunctures; propodeum almost smooth and shiny. Petiole and postpetiole smooth and shiny. Gaster, and femora and tibiae of all legs smooth and shiny.

Body with relatively sparse standing hairs; longest pronotal hairs 0.13-0.15 mm long. Head reddish brown or dark brown; mesosoma black or dark brown; petiole, postpetiole and gaster dark brown or reddish brown; antennal scape reddish brown or dark brown except at base and apex yellowish brown; funiculus of antenna yellowish brown; mandible yellowish brown; legs reddish brown; typhlatta spot present but not clear.

Non-type material examined. NORTHERN: Chiang Mai Province, Campus of Chiang Mai University, 10 Jun. 2001, K. Eguchi leg., Eg01-TH-158 (same colony as holotype, THNHM). WESTERN: Kanchanaburi Prov., Sri Sawat Dist., 18-19 Jan. 2014, P. Pitaktunskul leg., honey baiting trap (THNHM).

Distribution. Thailand (Fig. 22D).

Bionomics. The type series was collected from a secondary forest on the Campus of Chiang Mai University, the campus being continuous to the natural forest of Doi Suthep National Park. Specimens from Kachanaburi Prov, western Thailand were collected using honey baiting traps in a bamboo forest.

Remarks. *Aenictus leptotyphlatta* exhibits conditions intermediate between two species groups. In this species the anterior clypeal margin lacks denticles as in the *A. currax* group but the occipital corner of the head is similar to that of the *A. laeviceps* group. Furthermore, the typhlatta spot is less developed, much paler in coloration than in

the other typhlatta-bearing species. It is the smallest among the species with typhlatta spots seen in the Oriental, Indo-Australian, and Australasian regions, and is similar to *A. alticola* Wheeler et Chapman in the shape of the subpetiolar process (large and angulate with the apex directed downward). However, the latter is much larger and has the clypeus provided with denticles on its anterior margin.

***Aenictus longinodus* Jaitrong et Yamane**
(Fig. 23A-D)

Aenictus longinodus Jaitrong et Yamane, 2012: 59, figs 4, 7A; Jaitrong, 2013: 340, fig. 1D.

Types. Holotype and 37 paratype workers from S. Thailand, Trang Prov., Khao Chong Botanical Garden, evergreen forest, 8 Nov. 2003, W. Jaitrong, THNHM-I03-942 (= TH03-WJT-713, BMHN, MCZC, MHNG, SKYC, THNHM, examined).

Measurements. Holotype: TL 2.55 mm; HL 0.55 mm; HW 0.53 mm; SL 0.33 mm; ML 0.80 mm; PL 0.25 mm; CI 95; SI 62.

Larger workers (paratypes, n = 8): TL 2.45-2.60 mm; HL 0.55-0.58 mm; HW 0.53-0.55 mm; SL 0.33-0.35 mm; ML 0.80-0.88 mm; PL 0.25 mm; CI 95-96; SI 61-64.

Smaller workers (paratypes, n = 4): TL 1.90-2.00 mm; HL 0.45-0.53 mm; HW 0.40-0.43 mm; SL 0.22-0.28 mm; ML 0.63-0.73 mm; PL 0.18-0.19 mm; CI 85-89; SI 56-61.

Description of worker. Head in full-face view slightly longer than broad, with sides convex and posterior margin almost straight; seen in profile occipital corner of head rounded. Antenna 10-segmented; scape reaching midlength of head; antennal segment II longer and narrower than each of III-VI; terminal segment about 2 times as long as broad. Anterior margin of clypeus bearing 7 denticles. Masticatory margin of mandible with 3 acute teeth including a large apical tooth; basal margin lacking denticles.

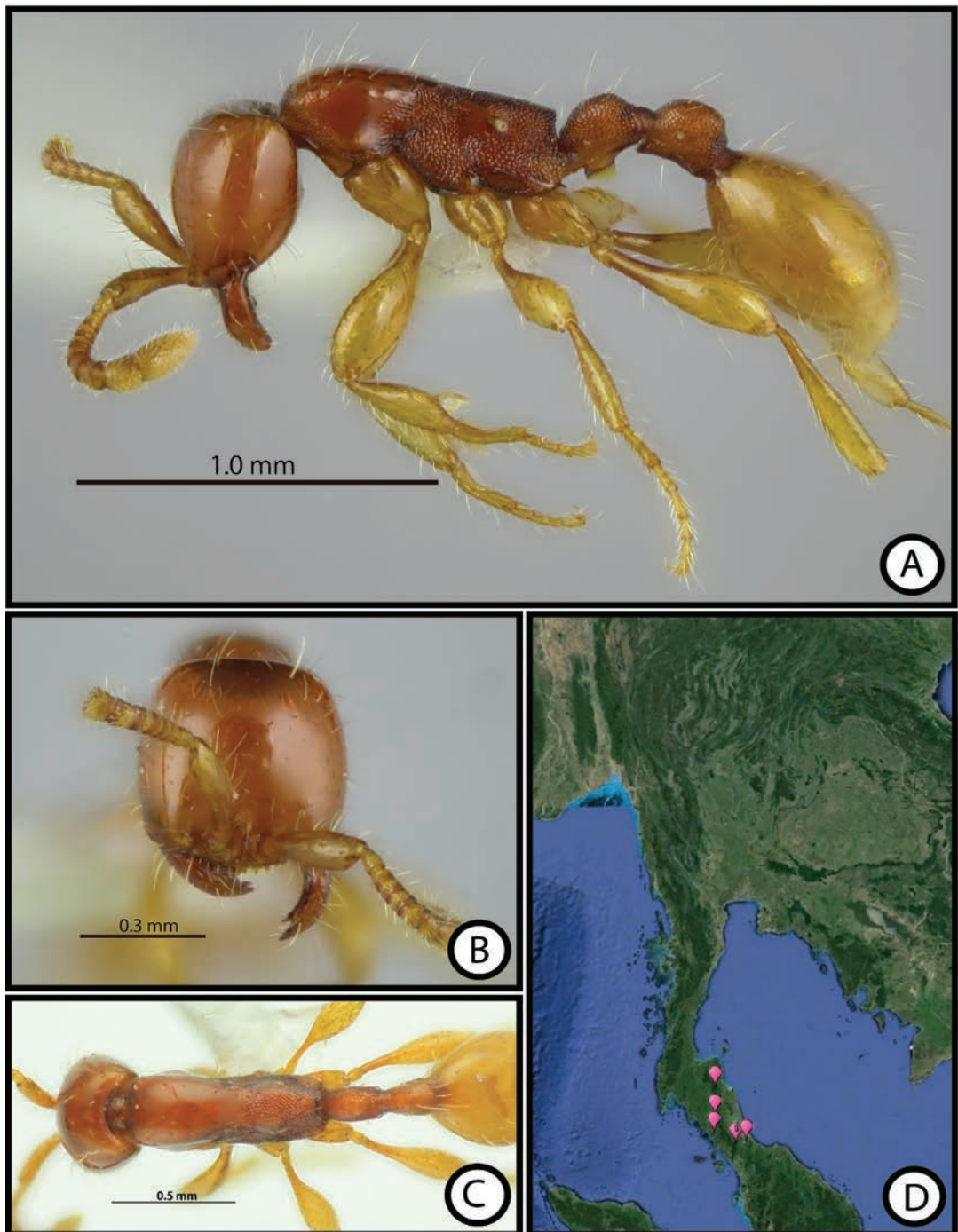


Figure 23. *Aenictus longinodus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Promesonotum seen in profile almost flat or weakly convex dorsally and sloping gradually to propodeal junction; in profile propodeum slightly lower than promesonotum and almost flat dorsally; propodeal junction angulate, right-angled; declivity of propodeum shallowly concave, encircled by a thin rim. Petiole longer than high, its dorsal outline convex; subpetiolar process well developed, subrectangular, its ventral margin almost straight or weakly convex and slightly longer than posterior margin; postpetiole seen in profile subrectangular and slightly shorter than petiole.

Head including antennal scape smooth and shiny; mandible striate along basal margin and smooth in apical and peripheral parts. Dorsal and lateral surfaces of pronotum smooth and shiny except for anteriormost part microreticulate; mesothorax, metapleuron and propodeum microreticulate. Petiole entirely microreticulate. Postpetiole microreticulate except for a small smooth and shiny area on dorsal surface.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.13-0.15 mm long. Head, mesosoma, petiole and postpetiole reddish brown; gaster yellowish brown and paler than the other parts of body; propodeum darker than elsewhere.

Non-type material examined. SOUTHERN: Nakhon Si Thammarat Prov., Nuppitam Dist., Khao Luang N.P., Krung Ching waterfall, rainforest, 20 May 2003, W. Jaitrong leg., TH03-WJT330 (THNHM); Trang Prov., Palian Dist., Ban Suso, Open area, 31 Oct. 2011, W. Jaitrong leg., TH11-WJT-183 (SKYC, THNHM); Songkhla Prov., Ton Nga Chang W.S., 5 Feb. 1998, N. Noon-anant leg., N98-3 (SKYC, THNHM); same loc., 29 Oct. 1997, N. Noon-anant leg., N97-1 (SKYC, THNHM); Songkhla Prov., Hat Yai, Songkhlanakarin Campus, PSU forest, 21 Oct. 2011, Sk. Yamane leg., TH11-SKY-166 (SKYC, THNHM).

Distribution. Thailand (Fig. 23D).

Bionomics. The type series, two colonies from Ton Nga Chang Wildlife Sanctuary (N98-3 and N97-1), and a colony from Khao Luang National Park (TH03-WJT330) were collected in lowland rainforests. A colony (TH11-WJT-183) was collected from an open area in the day, while a colony (TH11-SKY-166), just coming out of soil, was from a disturbed forest near a concrete road in the night. Thus, this species inhabits both primary and disturbed forests and is active in the day and night.

***Aenictus maneerati* Jaitrong et Yamane**
(Fig. 24A-D)

Aenictus maneerati Jaitrong and Yamane, 2013:
201, fig. 13A-C

Types. Holotype and 23 paratype workers from Thailand, Tak Prov., Umphang Dist., Thung Yai W.S., 25 May 2000, W. Jaitrong leg., WJT00-TY01 (AMK, BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 10): TL 2.80-3.05 mm; HL 0.65-0.68 mm; HW 0.65-0.68 mm; SL 0.50-0.53 mm; ML 1.00-1.03 mm; PL 0.25-0.28 mm; CI 100; SI 77-81.

Description of worker. Head in full-face view subrectangular, almost as long as broad, sides feebly convex and posterior margin feebly concave; occipital margin lacking collar. Antenna 10-segmented; scape relatively long, extending beyond 2/3 of head length, but not reaching posterolateral corner of head. Frontal carina very short, not reaching level of posterior margin of torulus. Parafrontal ridge absent. Anterior clypeal margin almost straight or feebly concave, lacking denticles. Masticatory margin of mandible with 4 teeth including a large apical tooth; basal margin feebly concave, lacking denticles. Maximum width of gap between anterior clypeal margin and mandibles about 2.4 times as broad as

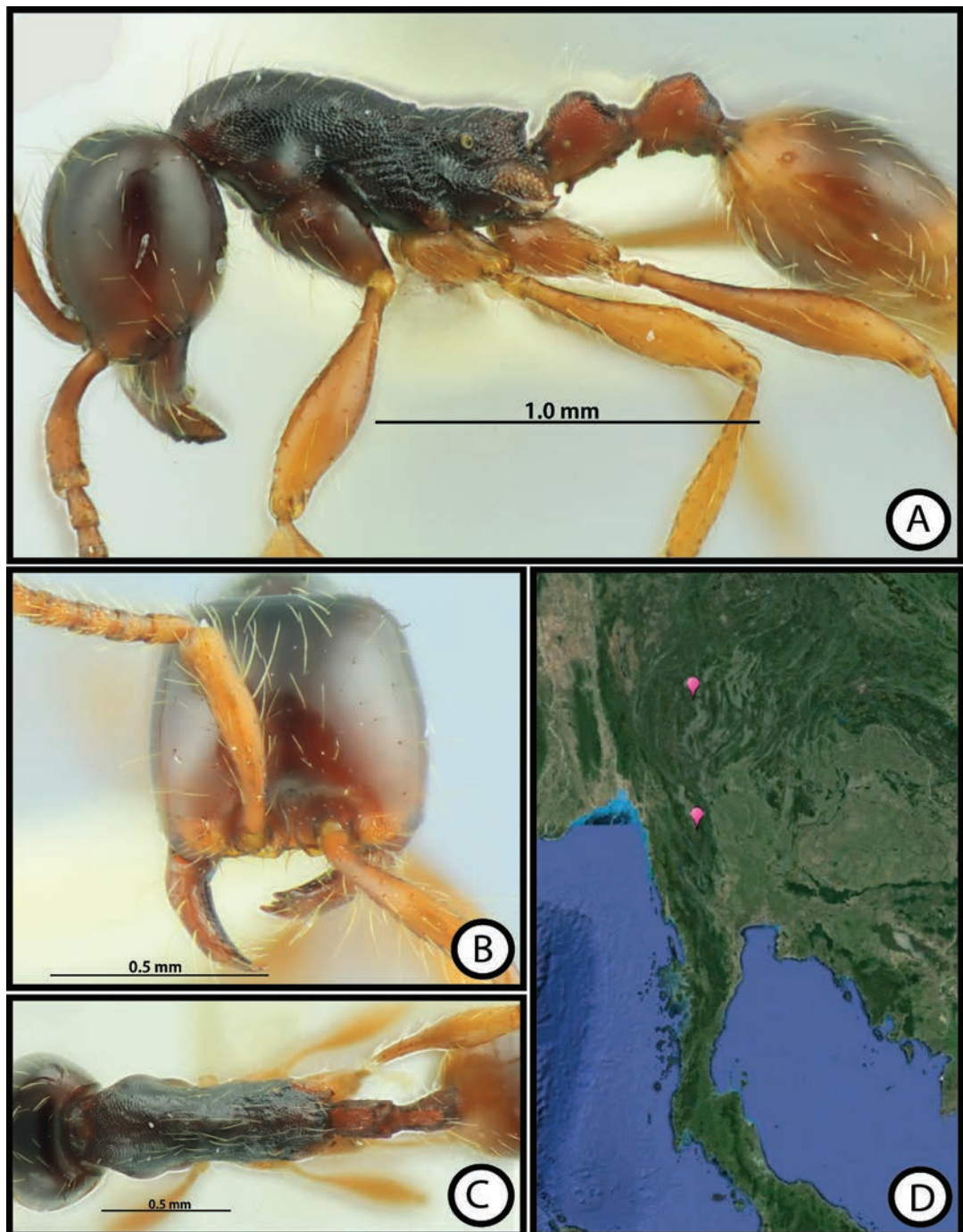


Figure 24. *Aenictus maneerati*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; metapleural gland bulla relatively large, its maximum diameter about 2.0 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with almost straight dorsal outline; propodeal junction angulated; declivity of propodeum shallowly concave, and encircled with a distinct rim. Petiole subsessile, slightly longer than high, elevated posteriorly, posterior face of petiole shallowly concave, and encircled with a thin rim; subpetiolar process generally very low, with its anteroventral and posteroventral corners angulate, and margin between the corners concave. Postpetiole almost as long as petiole, with its dorsal outline convex.

Head entirely smooth and shiny. Mandible very finely punctate. Antennal scape superficially microreticulate, but shiny. Promesonotum reticulate except anteriormost portion punctate; mesopleuron, metapleuron and propodeum punctate; in addition, mesopleuron and metapleuron with approximately 10 longitudinal rugae; propodeal dorsum with several short longitudinal rugae in front of propodeal junction. Petiole and postpetiole densely punctate. Femora entirely smooth and shiny except basal portion punctate; tibiae punctate but slightly shiny.

Head and mesosoma dorsally with relatively dense standing hairs; longest pronotal hairs 0.23-0.25 mm long. Head dark reddish brown; mesosoma dark brown; dark reddish brown; gaster and legs reddish brown or yellowish brown, paler than head and mesosoma. Typhlatta spot absent.

Non-type material examined. NORTHERN: Chiang Mai Prov., Mae Yod, 28 Apr. 2000, W. Jaitrong leg., TH00-WJT-01 (AMK).

DISTRIBUTION. Vietnam and Thailand (Fig. 24D) (Jaitrong and Yamane, 2013).

Bionomics. Little is known about the bionomics of *A. maneerati*. However, judging from the type series and non-types this species

inhabits primary forests.

Remarks. *Aenictus maneerati* is very closely related to *A. fuchuanensis*, *A. pinkaewi*, and *A. sundalandensis* in having the long cylindrical petiole and short head (CI 100-112). However, it is separated from the other three by the subrectangular head (in full-face view with weakly convex posterior margin) and unique subpetiolar process (very low, with downward-directed anterior and posterior processes, Fig. 24A).

***Aenictus minutulus* Terayama et Yamane**
(Figs 25A-E, 7B)

Aenictus minutulus Terayama and Yamane, 1989: 601, figs 7-10; Bolton, 1995: 60; Jaitrong and Hashimoto, 2012: 36, figs 4A-E, 7.

Types. Holotype and three paratype workers from Indonesia, Mentawai Is., Pulau Sipora, 28.VII.1985, Sk. & S. Yamane leg. (MZB and SKYC; two paratypes examined).

Measurements. Paratype workers (n = 2): TL 1.90-1.95 mm; HL 0.45 mm; HW 0.83-0.39 mm; SL 0.25-0.26 mm; ML 0.63 mm; PL 0.15-0.16 mm; CI 83-86; SI 67-68.

Non-type workers (n = 10): TL 1.7-2.40 mm; HL 0.43-0.53 mm; HW 0.33-0.48 mm; SL 0.23-0.33 mm; ML 0.55-0.75 mm; PL 0.14-0.20 mm; CI 76-90; SI 65-71.

Description of worker. Head in full-face view rectangular, clearly longer than broad, with almost parallel sides and almost straight or weakly concave posterior margin. Antenna 10-segmented; scape reaching midlength of head; antennal segment II longer than broad; III as long as broad; IV-VI each slightly broader than long; VII-IX each as long as broad and III slenderer than IV-VI; terminal segment 2.0 times as long as broad. Frontal carina very short, not extending beyond level of posterior margin of torulus. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with a large

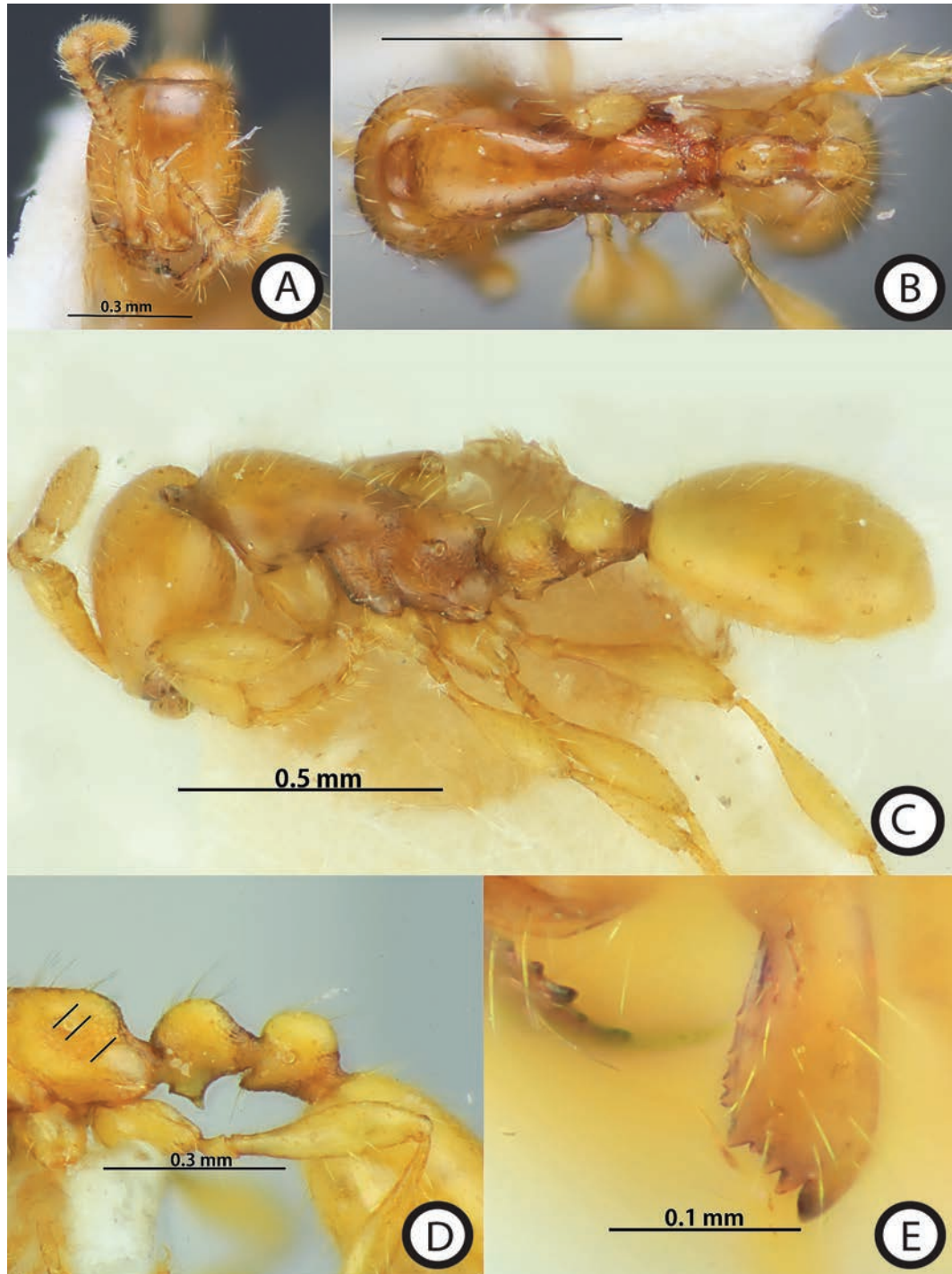


Figure 25. *Aenictus minutulus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

apical tooth followed by a medium-sized subapical tooth, 1-2 denticles, and medium-sized basal tooth; basal margin with 3-4 small denticles. Mesosoma in profile almost straight dorsally; metanotal groove indistinct; metapleural gland bulla relatively small; distance between propodeal spiracle and metapleural gland bulla clearly longer than spiracular diameter (Fig. 25D). Propodeum in profile with straight dorsal outline; propodeal junction bluntly angulate; declivity of propodeum shallowly concave, seen from back distinctly convergent above, with lateral carinae, but not demarcated basally by a transverse carina. Petiole almost as long as high, with its dorsal outline convex; subpetiolar process large, subrectangular, with anterior and posterior corners each acutely angulate. Postpetiole almost as long as petiole, its dorsal outline convex.

Head including mandible and antennal scape smooth and shiny; mesonotum and lateral face of propodeum microreticulate; remainder of mesosoma smooth and shiny. Dorsa of petiole and postpetiole smooth and shining; lower 1/2 of lateral faces of petiole and postpetiole microreticulate and opaque. Legs entirely smooth and shiny.

Head and mesosoma dorsally with relatively dense standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.10 mm long. Ground color light brownish yellow; antennae, legs and gaster yellow.

Non-type material examined. SOUTHERN: Trang Prov., Khao Chong B.G., 28 Sep. 2001, W. Jaitrong leg., WJT01-TH80 (AMK, THNHM); Narathiwat Prov., Bala-Hala W.S., 26 Sep. 2001, W. Jaitrong leg., THNHM-I2012-03726 (AMK, THNHM).

Distribution. Thailand (new record, fig. 7B), Sumatra and Java (Jaitrong and Hashimoto, 2012).

Bionomics. Jaitrong and Hashimoto (2012) reported that *A. minutulus* inhabited both primary and disturbed forests in lowland. In Thailand this species was found in a lowland

primary forest.

Remarks. *Aenictus minutulus* is very similar in general appearance to *A. changmaianus*, and *A. minimus*. See under *A. changmaianus* for details.

***Aenictus nishimurai* Terayama et Kubota**
(Fig. 26A-D)

Aenictus nishimurai Terayama and Kubota, 1993: 70, figs 9-10; Jaitrong *et al.*, 2011: 321, figs 10-12; Jaitrong and Yamane, 2012: 61, figs 5, 7A; Jaitrong, 2013: 340.

Types. Holotype and 10 paratype workers (NIAST, SKYC) from Thailand, Changmai Prov. [Chiangmai Prov.], Doi Suthep (1,500 m alt.), 18 Aug. 1992, M. Terayama and S. Kubota leg. A paratype in SKYC was examined.

Measurements. Paratype: TL 2.40 mm; HL 0.58 mm; HW 0.48 mm; SL 0.25 mm; ML 0.75 mm; PL 0.20 mm; CI 83; SI 53.

Larger workers (non-types, n = 7): TL 2.66-2.90 mm; HL 0.60-0.65 mm; HW 0.53-0.58 mm; SL 0.33-0.35 mm; ML 0.83-0.90 mm; PL 0.23-0.25 mm; CI 88; SI 61-64.

Smaller workers (non-types, n = 4): TL 1.95-2.25 mm; HL 0.48-0.50 mm; HW 0.38-0.43 mm; SL 0.20-0.25 mm; ML 0.55-0.65 mm; PL 0.15-0.18 mm; CI 79-85; SI 53-59.

Description of worker. Head in full-face view longer than broad, with sides slightly convex and posterior margin almost straight or feebly concave; seen in profile occipital corner of head rounded. Antenna 10-segmented; scape reaching midlength of head; antennal segment II almost as long as broad; III-VIII each slightly broader than long; terminal segment 2.3 times as long as broad. Anterior margin of clypeus bearing 7-10 denticles. Masticatory margin of mandible with 3 acute teeth including a large apical tooth; basal margin lacking denticles. Mesosoma seen in profile weakly convex or almost flat dorsally; in profile propodeum almost flat dorsally; suture between mesopleuron and metapleuron

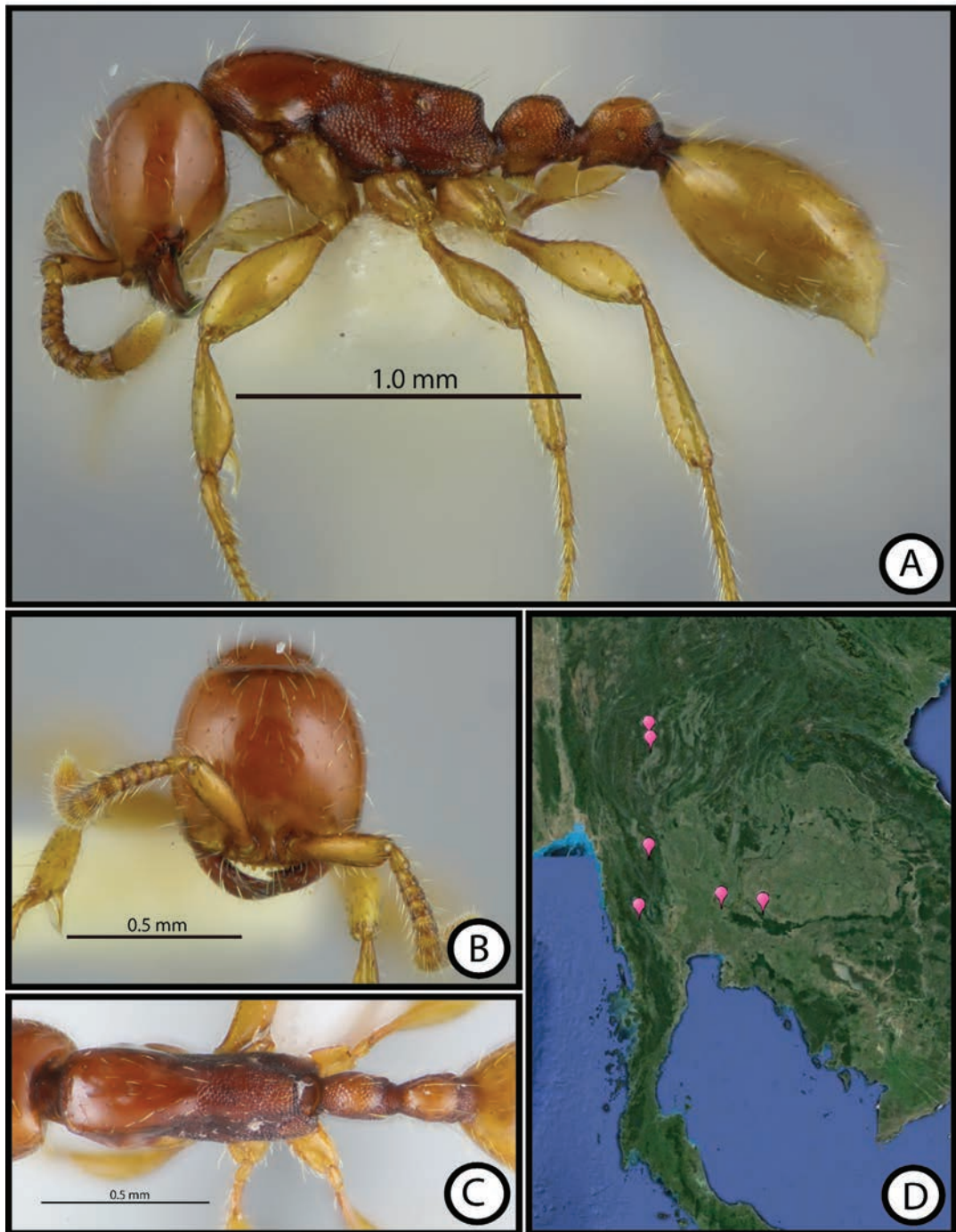


Figure 26. *Aenictus nishimurai*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

absent; propodeal junction dully angulated, forming an almost right angle; declivity of propodeum shallowly concave, encircled by a thin rim. Petiole nearly as long as high, its dorsal outline convex; subpetiolar process well developed, subrectangular, its ventral margin nearly straight and longer than posterior margin; postpetiole seen in profile almost as long as petiole, with round node.

Head including antennal scape entirely smooth and shiny; mandible finely striate with outer zone smooth and shiny. Dorsal and lateral surfaces of pronotum smooth and shiny except for anteriormost part microreticulate; mesothorax, metapleuron, and propodeum microreticulate. Petiole entirely microreticulate. Postpetiole microreticulate except for smooth and shiny area on dorsal surface.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.15-0.18 mm. Head yellowish brown; mesosoma, petiole and postpetiole reddish brown; gaster yellowish brown, but paler than head.

Non-type material examined. NORTHERN: Chiang Mai Prov., Mae Tang dist., 26 Jun. 2000, W. Jaitrong leg., WJT00-TH01 (SKYC, THNHM). WESTERN: Tak Prov., Umphang Dist., 13 Oct. 2000, S. Hasin leg. (THNHM); Kachanaburi Prov., Sai Yok N.P., 140 m alt., 30 Jun. 2002, Sk. Yamane leg., TH02-SKY-19 (SKYC, THNHM). NORTHEASTERN: Pitsanulok Prov., Thung Salang Luang, 10 Oct. 1999, W. Jaitrong leg., WJT101099-1 (AMK, THNHM). CENTRAL: Saraburi Prov., Phukae B.G., 1 Jul. 2002, Sk. Yamane leg., TH02-SKY-41 (SKYC, THNHM).

Distribution. Vietnam, Laos, and Thailand (Fig. 26D) (Jaitrong and Yamane, 2012).

Bionomics. *Aenictus nishimurai* is distributed from lowland to highland (200-1,500 m alt.) and inhabits primary, secondary and disturbed forests.

Remarks. This species is most similar to

A. doydeei. See under *A. doydeei* for details.

***Aenictus paracentatus* Jaitrong et Yamane**
(Fig. 27A-D)

Aenictus paracentatus Jaitrong and Yamane, in Jaitrong *et al.*, 2012: 136, figs. 6-12; Jaitrong, 2013: 340.

Types. The holotype and seventeen paratype workers (BMNH, MCZC, MHNG, SKYC, THNHM, examined) from N. Thailand, Chiang Mai Prov., Muang Dist., Doi Suthep-Pui National Park, 20 Aug. 1998, W. Jaitrong leg., WJT98-PD01.

Measurements (n = 10, holotype and paratypes). TL 4.55-4.65 mm; HL 0.95-1.05 mm; HW 0.80-0.93 mm; SL 0.93-1.08 mm; ML 1.50-1.55 mm; PL 0.33-0.35 mm; CI 83-88; SI 117-124.

Description of worker. Head in full-face view round, slightly longer than broad, with convex sides and posterior margin; occipital carina bearing a distinct collar. Antenna 10-segmented; scape long, extending beyond posterolateral corner of head; segment II almost as long as III, but slightly shorter than IV-VII; apical segment (X) almost as long as three previous ones combined. Frontal carina well developed, much extending beyond level of posterior margin of torulus. Parafrontal ridge well developed, 0.40-0.43 mm long, extending 1/3 of head length; with head seen in profile, its anteriormost part well developed and subtriangular and anterior part with almost straight dorsal outline. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with large apical tooth, followed by 11-12 denticles; basal margin lacking denticles. Mesosoma rather stout; promesonotum in profile with strongly convex dorsum, sloping gradually to metanotal groove; propodeum lower and with almost straight dorsum; mesopleuron not demarcated from metapleuron; propodeal junction acutely angulated, protruding as a

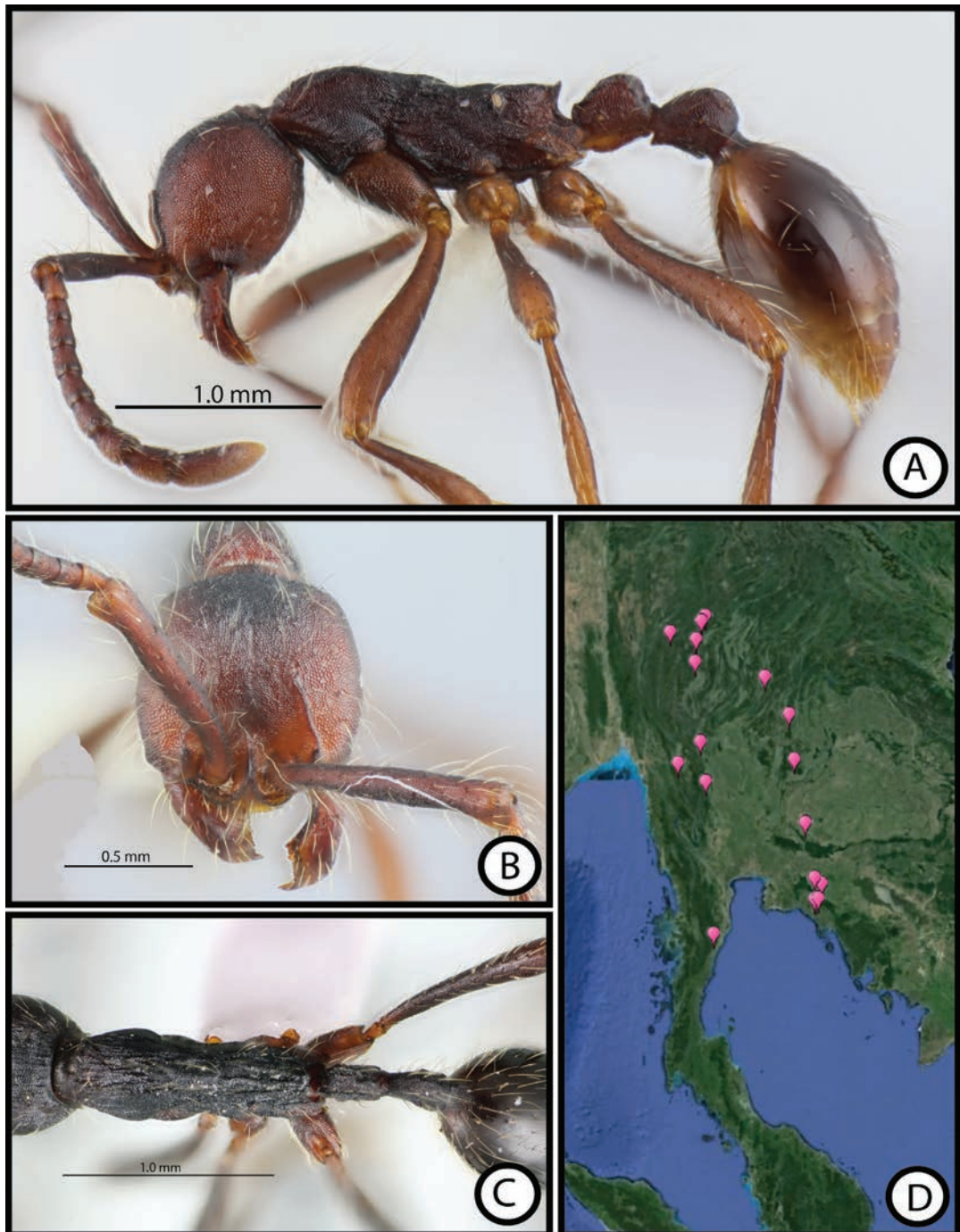


Figure 27. *Aenictus paracentatus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

ridge that is often slightly upward directed; declivity of propodeum shallowly concave, encircled with a very narrow rim. Petiole almost as long as high without a peduncle, its dorsal outline elevated posteriorly; subpetiolar process generally very low, its ventral outline weakly convex. Postpetiole seen in profile slightly larger than petiole, its dorsal outline elevated posteriorly.

Head, mesosoma, petiole and postpetiole entirely and densely micropunctate and opaque. In addition, promesonotum dorsally rugose, laterally with approximately 10 longitudinal rugae; dorsal petiolar surface with longitudinal or irregular rugae. First gastral segment very weakly shagreened with smooth and shiny interspaces, except in the basalmost part with dense micropunctures.

Head and mesosoma with relatively dense standing hairs; length of the longest pronotal hairs 0.43–0.45 mm. Entire body dark reddish brown or dark brown.

Non-type materials examined. NORTHERN: Chiang Mai Prov., Doi Phahom Pok, 28 May 2008, WJT08-N33, W. Jaitrong leg. (SKYC, THNHM); Chiang Mai Prov., Doi Ang Khang, 13 Jul. 2000, WJT00-TH061, W. Jaitrong leg. (SKYC, THNHM); Chiang Mai Prov., Doi Chiang Dao, 500–600 m alt., 19 Aug. 1998, TH98-SKY-09, Sk. Yamane leg. (SKYC); same loc., 25 Aug. 2014, W. Jaitrong leg., WJT250814-1 (THNHM); Mae Hong Son Prov., Pang Mapha Dist., Tham Lod, 6 Mar. 2008, WJT08-TL01, W. Jaitrong leg. (SKYC, THNHM); Nan Prov., Sri Nan, 4 Jun. 2006 (THNHM). WESTERN: Tak Prov., Umphang Dist., Thung Yai, 18 May 2000, D. Wiwatwitaya leg., (THNHM); same loc., Umphang W.S., 12 Sep. 2004, W. Jaitrong leg., WJT04-W036 (THNHM); Tak Prov., Wang Chao Dist., Chiang Thong Forest Platanation, 19 Jun. 2014, W. Jaitrong leg., WJT190614-1 (THNHM). NORTHEASTERN: Pitsanulok Prov., Phu Soi Dao, 8 Jul. 2006, D. Wiwatwitaya leg., DW080706-1 (AMK, THNHM); Chaiyaphum

Prov., Phu Kheao, 13 Jan. 1999, WJT99-TH64, W. Jaitrong leg. (SKYC, THNHM); Loei Prov., Phu Luang, 11 Apr. 2008, Sk. Yamane leg., TH08-SKY-103 (SKYC, THNHM); same loc., 11 Apr. 2008, W. Jaitrong leg., WJT03-TH803 (THNHM); Nakhon Ratchasima Prov., Sakhaerat ERS., 22 Nov. 1999, WJT99-TH46, W. Jaitrong leg. (SKYC, THNHM). CENTRAL: Uthai Thani Prov., Ban Rai Dist., Kan Ma Kud Village, 18 Jun. 2010, HKK10-06-06, W. Jaitrong leg. (THNHM); Prachuap Kirikhan Prov., Tabsakae Dist., 5 Aug. 2009, WJT09-TH2002, W. Jaitrong leg. (SKYC, THNHM). EASTERN: Chachoengsao Prov., Khao Ang Reu Nai, 21 Aug. 2003, Sk. Yamane leg., TH03-SKY-43 (SKYC, THNHM); same loc., 21 Aug. 2003, W. Jaitrong leg., WJT03-TH-280 (THNHM); Chanthaburi Prov., Pheao, 22 Nov. 2003, TH03-HS12, S. Hasin leg. (SKYC, THNHM); same loc., 23 Nov. 2003, D. Wiwatwitaya leg., DC03-TH022 (THNHM); Chanthaburi Prov., Khao Soi Dao, 14 May 2008, W. Jaitrong, WJT08-E054 (THNHM); Chanthaburi Prov., Pong Nam Ron Dist., Khlong Tab Mak, 18 May 2008, W. Jaitrong leg., WJT08-E189 (THNHM); same loc., 18 May 2008, W. Jaitrong leg., WJT08-E174 (THNHM); Chanthaburi Prov., Khlung Dist., Ban Ang-ed, 25 Jan. 2014, W. Jaitrong leg., WJT250114-5 (THNHM).

Distribution. Vietnam, Laos, and Thailand (Fig. 27D) (Jaitrong *et al.*, 2012).

Bionomics. *Aenictus paradenatus* occurs from lowlands to highlands (up to 1300 m alt., Doi Ang Khang, N. Thailand) and inhabits primary and disturbed forests. Jaitrong *et al.* (2012) found this species feeding on other ants such as species of *Leptogenys*, *Oecophylla*, *Ectomomyrmex* and *Pheidole*, and also on termites, *Macrotermes* sp. I observed this species preying on ants of other genera such as *Plagiolepis* (WJT190614-1), *Camponotus* (WJT190614-1), and *Polyrhachis* (WJT190614-1).

Remarks. *Aenictus paradenatus* is very

similar in general appearance to *A. dentatus* (see under *A. dentatus*). In most specimens the subpetiolar process is very low with its ventral outline weakly convex as seen in the type series, but in two specimens collected from Doi Ang Khang (ca. 1300 m alt.), northern Thailand it is more developed, protruded anteroventrally.

***Aenictus parahuonicus* Jaitrong et Yamane**
(Fig. 28A-D)

Aenictus parahuonicus Jaitrong and Yamane, 2011: 19, figs 17-19; Jaitrong, 2013: 340.

Types. Holotype and paratype workers from S. Thailand, Trang Prov., Yan Takhao Dist., Thung Khai Botanical Garden, 9 Aug. 2009, W. Jaitrong leg., WJT09-TH2007 (AMK, BMNH, MCZC, MHNG, SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 8): TL 3.85-4.25 mm; HL 0.80-0.93 mm; HW 0.70-0.85 mm; SL 0.60-0.73 mm; ML 1.27-1.73 mm; PL 0.30-0.35 mm; CI 86-92; SI 83-87.

Description of worker. Head in full-face view subrectangular, slightly longer than broad, with sides feebly convex and posterior margin almost straight; occipital carina often evanescent medially. Antenna 10-segmented; scape extending to only 2/3 of head length; antennal segments II-X each longer than broad; II almost as long as each of III-VI. Frontal carina short, slightly extending beyond level of posterior margin of torulus. Parafrontal ridge essentially absent. Anterior clypeal margin convex, lacking denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth and 6 denticles; basal margin sinuate with a series of ill-defined denticles. Mesosoma relatively elongate; promesonotum in profile convex dorsally and sloping gradually to metanotal groove. Propodeum in profile with feebly convex

dorsal outline; propodeal junction rounded; declivity of propodeum feebly convex, with blunt lateral carinae but not demarcated basally by a transverse carina; area below propodeal spiracle distinctly impressed; opening of propodeal spiracle clearly circular with its diameter about 2.5 times as long as diameter of postpetiolar spiracle. Petiole clearly longer than high, with its dorsal outline convex; subpetiolar process well developed, triangular or roundly produced anteriorly, with its ventral outline feebly convex. Postpetiole shorter than petiole and almost as long as high, with its dorsal outline convex.

Head including mandible entirely smooth and shiny; antennal scape dorsally smooth but ventrally sculptured. Pronotum smooth and shiny except for the anterior portion punctate; mesonotum smooth and shiny; mesopleuron wrinkled and macroreticulate; metapleuron and propodeum punctate but the punctation weaker than in mesopleuron. Petiole with dense micropunctures except for a small area on dorsal surface smooth and shiny. Postpetiole smooth and shiny except for anterior and lateral portions punctate. Legs smooth and shiny.

Head with some short standing hairs in addition to two long hairs on vertex; mesosoma with relatively sparse standing hairs mixed with sparse suberect short hairs over the surface; longest pronotal hairs 0.35-0.40 mm long. Entire body dark reddish-brown, with a relatively large typhlata spot on occipital corner.

Non-type material examined. NORTHERN: Phrae Prov., Wang Chin Dist., 22 Sep. 2000, D. Wiwatwitaya leg. (AMK). NORTHEASTERN: Chaiyaphum Prov., Phu Kheao, 11 Jul. 1998, W. Jaitrong leg., WJT98-TH052 (AMK, THNHM); same loc., 27 Mar. 1999, W. Jaitrong leg., WJT99-TH054 (AMK, THNHM); Nakhon Ratchasima Prov., Khao Yai, 31 May 2000, Sk. Yamane leg. (SKYC). EASTERN: Chachoengsao Prov., Khao Ang Reu Nai, 26 Oct. 2002, W. Jaitrong leg.,

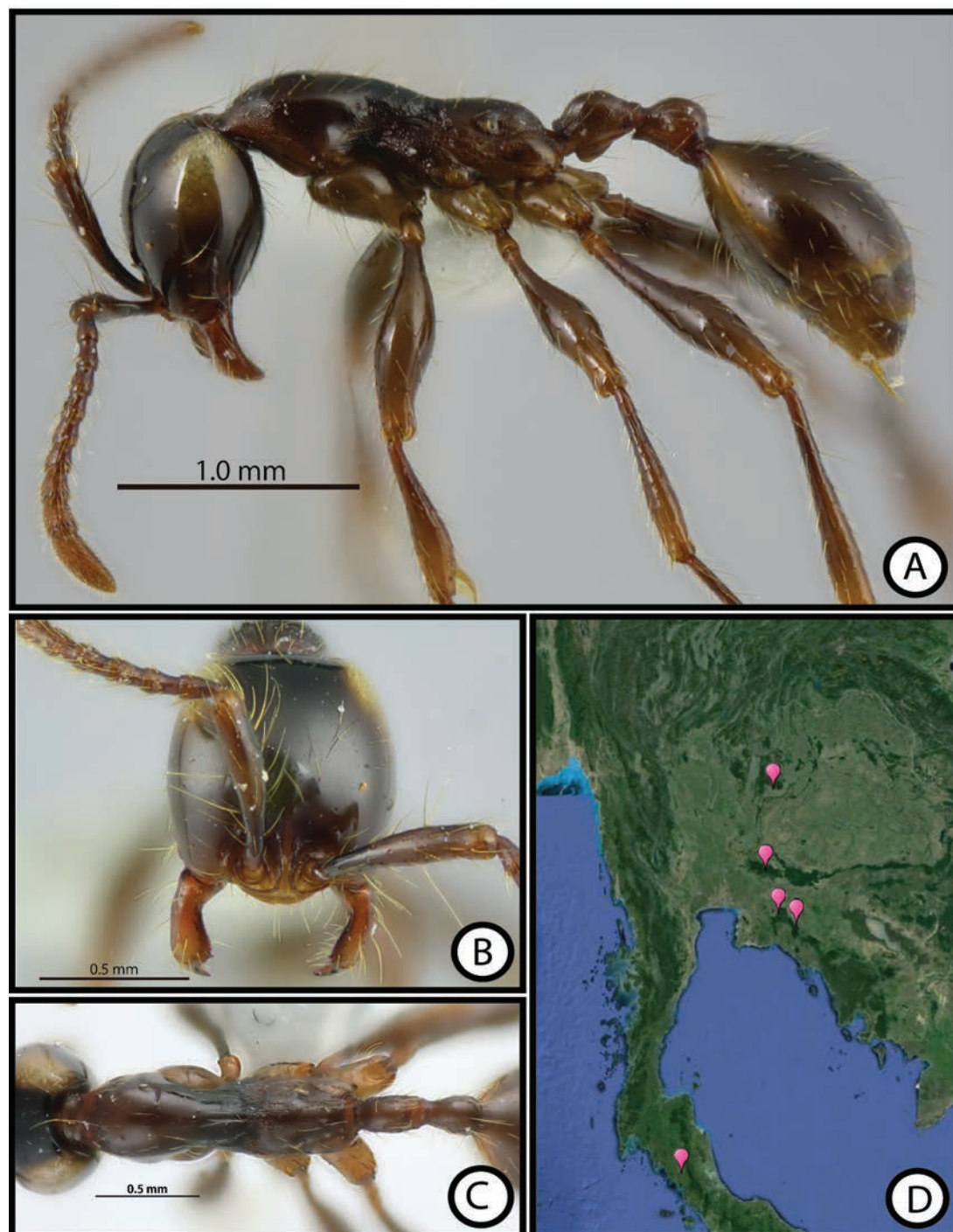


Figure 28. *Aenictus parahuonicus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

THNHM-I02-3488 (SKYC, THNHM); same loc., 17 Jan. 2004, W. Jaitrong leg., WJT04-CS009 (SKYC, THNHM); Chanthaburi Prov., Khao Soi Dao, 19 Jul. 1997, Sk. Yamane leg., TA970719-01 (SKYC, THNHM).

Distribution. Vietnam, Laos, and Thailand (Fig. 28D) (Jaitrong and Yamane, 2011).

Bionomics. *Aenictus parahuonicus* is widespread, distributed from northern Vietnam to southern Thailand (Sundaland). This species carries out its raids and emigrations on the surface in highly varied situations from open area, plantation, and light cover to deep forest in the day and night (Jaitrong and Yamane, 2011). I observed this species preying on ants of other genera such as *Pheidologeton* and *Dolichoderus* (TA970719-01) and also on termites (type series and WJT09-TH2007).

Remarks. *Aenictus parahuonicus* is very similar in general appearance to *A. currax* Emery, *A. diclops* Shattuck, *A. huonicus* Wilson, *A. pfeifferi* Zettel et Sorger, and *A. wayani* Jaitrong et Yamane. However, it is easily distinguished from the other species of the *A. currax* group by the declivity of propodeum not demarcated from dorsum by a carina (bluntly margined laterally), while in the others it is encircled with a distinct rim (see also Jaitrong and Yamane, 2011).

All the Thai specimens cited as *A. huonicus* in Jaitrong and Nabhitabhata (2005) were reidentified as *A. parahuonicus*.

***Aenictus pinkaewi* Jaitrong et Yamane** (Fig. 29A-D)

Aenictus pinkaewi Jaitrong and Yamane, 2013: 207, fig. 16A-C.

Types. Holotype and 40 paratype workers from N. Thailand, Chiang Mai Prov., Muang Dist., near Chiang Mai University, Jun. 2000, W. Jaitrong leg., WJT00-CM01 (BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype and paratype

workers (n = 10): TL 2.90-3.35 mm; HL 0.60-0.69 mm; HW 0.65-0.75 mm; SL 0.45-0.58 mm; ML 0.93-1.10 mm; PL 0.23-0.29mm; CI 105-109; SI 69-82.

Description of worker. Head in full-face view subrectangular, slightly shorter than broad, sides feebly convex, and posterior margin feebly concave. Antenna 10-segmented; scape reaching 2/3 of head length; antennal segments II-VI each distinctly longer than broad, of approximately same length; terminal segment (X) slightly longer than VII+VIII+IX. Frontal carina short, reaching level of posterior margin of torulus. Parafrontal ridge absent. Anterior clypeal margin almost straight or feebly concave, lacking denticles, concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with 4 teeth including a large apical tooth; basal margin feebly concave, lacking denticles. Maximum width of gap between anterior clypeal margin and mandibles approximately 1.9 times as broad as maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; metanotal groove indistinct; mesopleuron demarcated from metapleuron by a shallow groove; metapleural gland bulla relatively small, its maximum diameter about 1.6 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with almost straight dorsal outline; propodeal junction angulate, overhanging the declivitous face of propodeum; the declivity broadly and shallowly concave, encircled with a rim. Petiole cylindrical, distinctly longer than high, with its dorsal outline slightly elevated posteriorly; posterior face of petiole shallowly concave, and encircled with a thin carina; subpetiolar process generally very low, with its anteroventral corner acutely angulate, and ventral outline feebly convex. Postpetiole almost as long as petiole, node convex dorsally and elevated posteriorly.

Head and gaster entirely smooth and shiny. Mandible very finely striate. Antennal scape

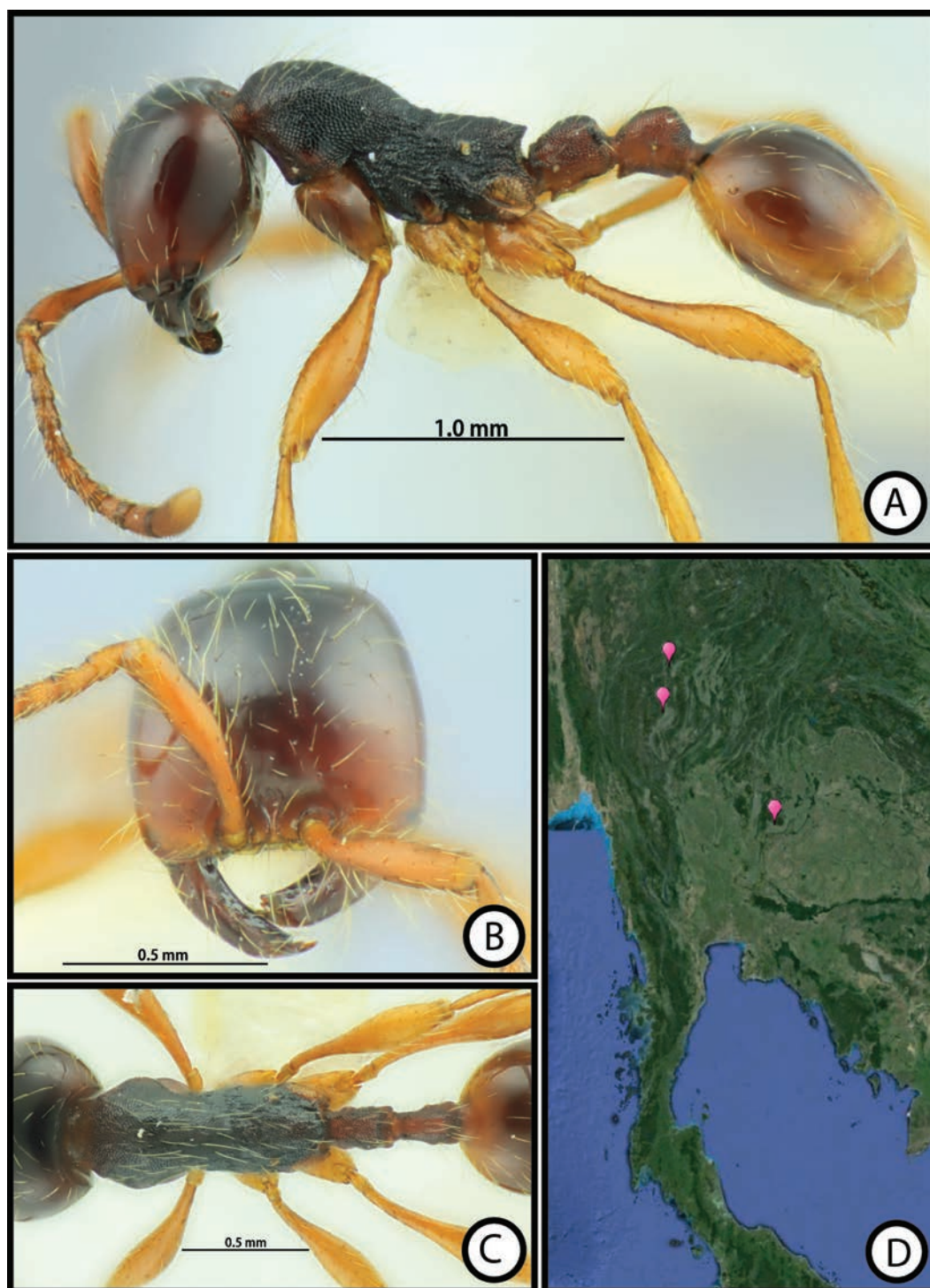


Figure 29. *Aenictus pinkaewi*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

superficially microreticulate, but shiny. Promesonotum entirely punctate; mesopleuron, metapleuron and propodeum punctate; in addition, upper portion of mesopleuron, upper portion of metapleuron, and lateral face of propodeum with longitudinal rugae. Petiole and postpetiole densely reticulate. Legs entirely smooth and shiny except basal portions of femora densely micropunctate.

Head and mesosoma dorsally with relatively dense standing hairs mixed with sparse short decumbent hairs; longest pronotal hairs 0.23-0.25 mm long. Head including antennal scape and mandible, petiole, postpetiole, and first gastral tergite and sternite dark reddish brown; mesosoma dark brown; gaster dark reddish brown; tip and lateral face of gaster, and legs yellowish brown.

Non-type material examined. NORTHERN: Chiang Mai Prov., Doi Ang Khang, 13 Jul. 2000, W. Jaitrong leg., WJT00-TH047 (SKYC, THNHM); same loc., 30 Jan. 1997, W. Jaitrong leg., AMK-01-01-03-116 (AMK). NORTHEASTERN: Chaiphaphum Prov., Phu Kheao, hill evergreen forest, 16 Sep. 1998, W. Jaitrong, WJT98-TH065 (SKYC, THNHM).

Distribution. Thailand (Fig. 29D).

Bionomics. So far this species is known only from highlands. Workers carry out their raids and immigrations on the ground surface in highly varied situations from open area, secondary forest to deep forest in the day and night. The type series was collected by pitfall traps in a secondary forest. I observed this species preying on ants of the genus *Pheidole* (WJT00-TH047).

Remarks. *Aenictus pinkaewi* is very closely related to *A. fuchuanensis*, *A. maneerati*, and *A. sundalandensis* Jaitrong et Yamane in having the long cylindrical petiole and the short head (CI 100-112). It is most similar to *A. fuchuanensis* (see under *A. fuchuanensis*).

***Aenictus siamensis* Jaitrong et Yamane**
(Fig. 30A-D)

Aenictus siamensis Jaitrong and Yamane, 2011: 42, figs 35-37; Jaitrong, 2013: 340, fig. 1E.

Types. Holotype and eighteen paratype workers from NE. Thailand, Chaiphaphum Prov., Phu Kheao Dist., Hill evergreen forest, 27 Mar. 1999, W. Jaitrong leg., WJT99-TH55 (AMK, BMNH, MCZC, MHNG, SKYC, THNHM, examined).

Measurements. Holotype and paratypes (n = 10): TL 3.75-3.90 mm; HL 0.78-0.85 mm; HW 0.63-0.70 mm; SL 0.68-0.75 mm; ML 1.18-1.25 mm; PL 0.25-0.28 mm CI 81-82; SI 107-108.

Description of worker. Head in full-face view distinctly longer than broad, with sides convex and posterior margin almost straight; occipital carina complete. Antenna 10-segmented; scape relatively long, reaching posterolateral corner of head; antennal segments II-X each longer than broad; II almost as long as each of III-VI. Frontal carina very short, not extending beyond level of posterior margin of torulus. Anterior margin of clypeus convex, bearing 8-9 denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth, 6-7 denticles, and often 1 or 2 small basal teeth; basal margin lacking denticles. Mesosoma relatively slender; promesonotum in profile weakly convex dorsally and sloping gradually to metanotal groove; dorsal outline of propodeum feebly convex; propodeal junction angulate; declivity shallowly concave, encircled by a thin rim. Petiole subsessile, its node almost as long as high with strongly convex dorsal outline; subpetiolar process well developed and triangular with apex directed downward; postpetiole almost as long as petiole, the node similar to that of petiole in shape.

Entire head smooth and shiny. Mandible very finely striate except along masticatory and outer margins. Antennal scape superficially sculptured and shiny. Pronotum dorsally almost smooth and shiny; lateral face

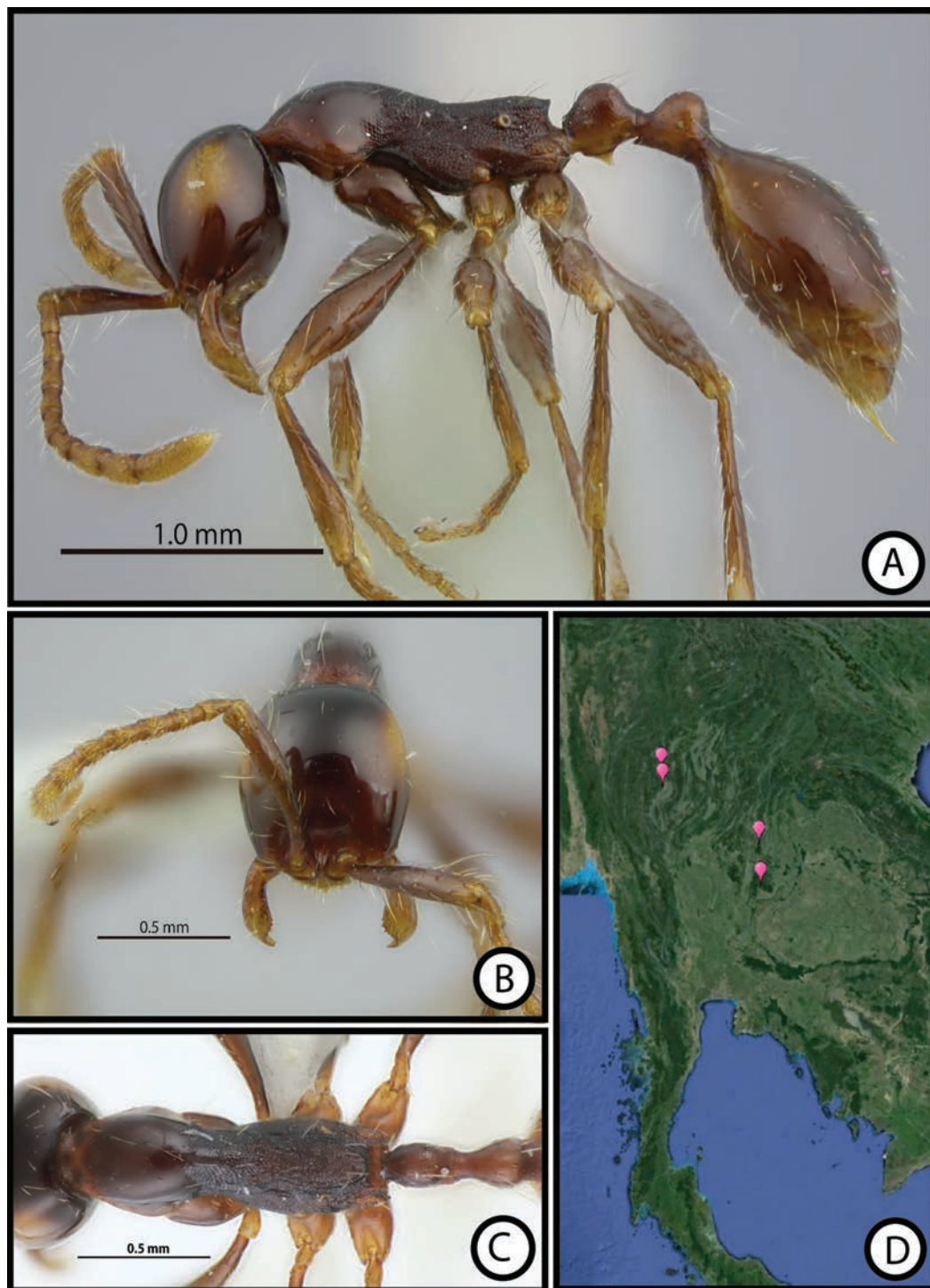


Figure 30. *Aenictus siamensis*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

superficially reticulate and weakly shiny; mesothorax, metapleuron and propodeum densely punctate; mesothorax and propodeum often with ill-defined longitudinal rugulae on lateral faces. Petiole with dense small punctures; postpetiole entirely smooth and shiny. Legs extensively smooth and shiny.

Head and mesosoma dorsally with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.23-0.27 mm long. Entire body dark reddish brown. Typhlatta spot located anterior to occipital corner.

Non-type material examined. NORTHERN: Chiang Mai Prov., Mae Tang Dist., Haui Prachao, HEF, 6 Sep. 2000, W. Jaitrong leg., WJT00-HPC05 (AMK, SKYC, THNHM); Chiang Mai Prov., Doi Suthep-Pui, SE, May 2008, S. Sonthichai leg., WJT08-11 (AMK, THNHM). NORTHEASTERN: Chaiyaphum Prov., Phu Kheao, DEF, 10 Jan 1997, D. Wiwatwitaya leg. (AMK); Loei Prov., Phu Ruea Dist., 11 Apr. 2008, W. Jaitrong and Sk. Yamane leg., WJT08-TH801/TH08-SKY-17 (SKYC, THNHM); same loc., 10 Apr. 2008, P. Kosonpanyapiwat leg., PPK08-TH101 (THNHM).

Distribution. Thailand (Fig. 30D).

Bionomics. *Aenictus siamensis* is found in seasonal forests (hill evergreen forest and dry evergreen forest) and open areas at altitudes of 700-900 m. Two colonies from Loei Province (WJT08-TH801 and PPK08-TH101) were collected in the night, a colony from Chiang Mai Province (WJT00-HPC05) in the day. The type series (WJT99-TH55) and the colony from Doi Suthep-Pui National Park, Chiang Mai Province (WJT08-11) were collected using pitfall traps.

Remarks. *Aenictus siamensis* is similar to *A. binghami* in having the mesosoma extensively sculptured, but is much smaller than the latter in body length. Furthermore, the pronotal sculpture is much weaker (dorsum almost smooth) in the latter. For more information, see under *A. binghami*.

Aenictus sonchaengi Jaitrong et Yamane (Fig. 31A-D)

Aenictus sonchaengi Jaitrong and Yamane, 2011:43, figs 38-40; Jaitrong, 2013: 340.

Types. Holotype and fourteen paratype workers from S. Thailand, Nakon Si Thammarat Prov., Khao Nan, 12 Dec. 2007, W. Jaitrong leg (BMNH, SKYC, THNHM, examined).

Measurements. Holotype and paratypes (n = 10): TL 4.20-4.35 mm; HL 0.85-0.95 mm; HW 0.83-0.85 mm; SL 0.68-0.73 mm; ML 1.33-1.35 mm; PL 0.30-0.33 mm CI 89-97; SI 82-85.

Description of worker. Head in full-face view subrectangular, slightly longer than broad, with sides convex and posterior margin almost straight; occipital carina complete. Antenna 10-segmented; scape relatively short, only reaching 3/4 of head length; antennal segments II-X each longer than broad; II almost as long as each of III-V; terminal segment (X) slightly shorter than VII+VIII+IX. Frontal carina short, slightly extending beyond posterior margin of torulus. Anterior margin of clypeus slightly convex, bearing 5-6 denticles. Masticatory margin of mandible with a large apical tooth followed by a medium-sized subapical tooth, 5 denticles, and a medium-sized basal tooth; basal margin bearing 2-3 denticles. Mesosoma rather stout; promesonotum in profile strongly convex to form a dome, mesonotum sloping to metanotal groove; propodeum distinctly lower than promesonotum, with its dorsal outline almost straight; propodeal junction round or weakly angulate; declivity seen in profile almost vertical, not margined dorsally and laterally with a carina. Petiole relatively short, globular, almost as long as high; subpetiolar process well developed and triangular, its apex directed downward and backward; postpetiole slightly larger than petiole.

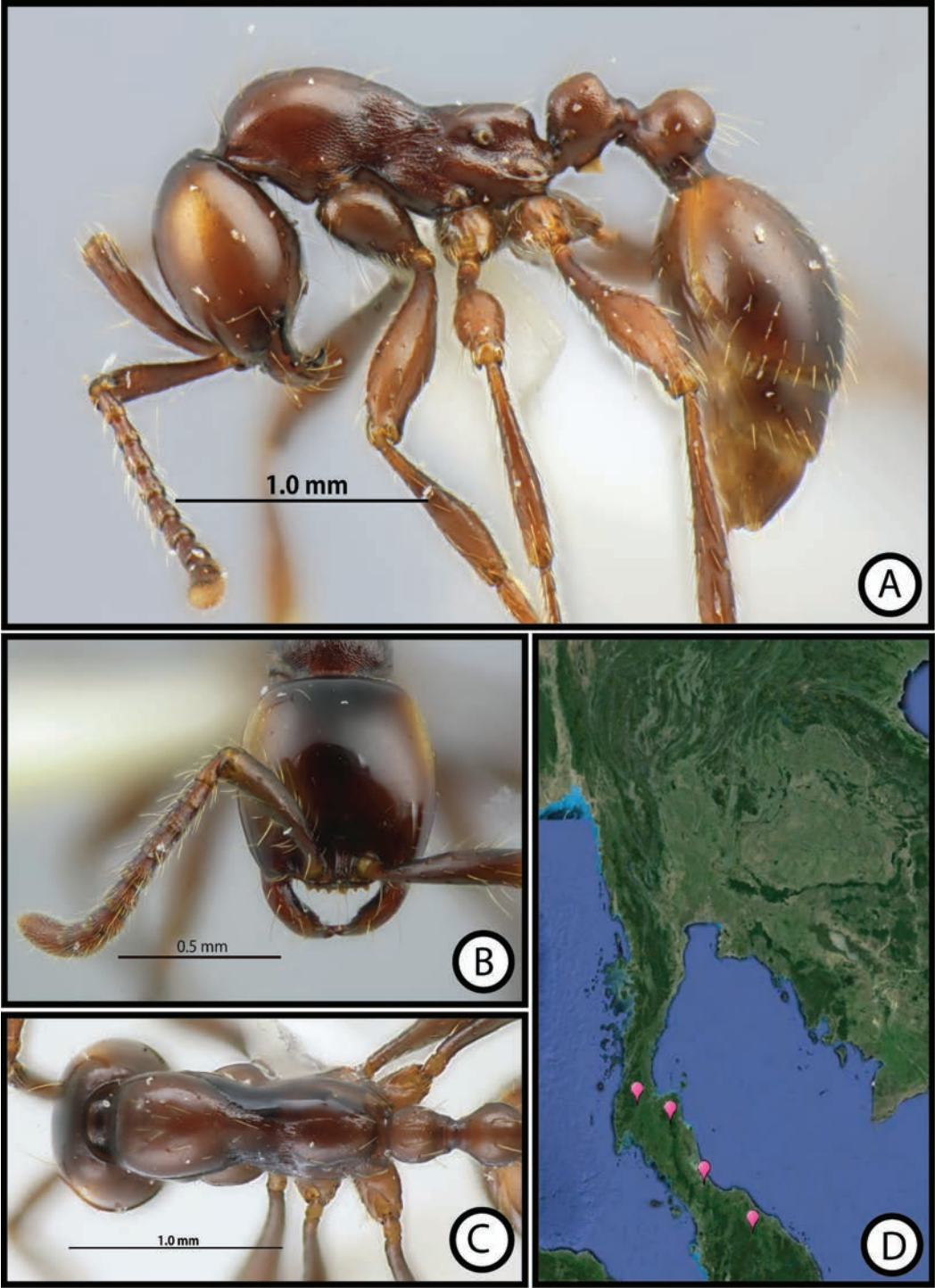


Figure 31. *Aenictus sonchaengi*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Entire head smooth and shiny. Mandible very finely striate except along masticatory and outer margins. Antennal scape superficially sculptured and shiny. Pronotum entirely smooth and shiny except for its anteriormost portion punctate; mesonotum and upper portion of mesopleuron longitudinally rugulose; remainder of mesopleuron, metapleuron and lateral face of propodeum punctate; dorsal surface of propodeum smooth and shiny. Petiole densely reticulate; postpetiole dorsally smooth and shiny, its lateral face weakly reticulate. Legs entirely smooth and shiny.

Vertex with a pair of standing hairs; promesonotum with relatively sparse standing hairs; longest pronotal hairs 0.20-0.23 mm long; propodeum with a pair of standing hairs near posterolateral corners. Entire body dark reddish-brown. Typhlatta spot located anterior to occipital corner.

Non-type material examined. SOUTHERN: Nakhon Si Thammarat Prov., Khao Nan, 12 Jul. 2007, W. Jaitrong leg., WJT07-KN01 (AMK, SKYC, THNHM); same loc., Yod Nam, 28 Sep. 2008, W. Jaitrong leg., WJT08-S1100 (AMK, SKYC, THNHM); Surat Thani Prov., Ratchaprapa Dam, SF, 21 Jun. 2010, S. Hasin leg., SH10-TH01 (AMK, SKYC, THNHM); Songkhla Prov., Khao Kor Hong, 25 Sep. 2008, W. Jaitrong leg., WJT08-S1022; Narathiwat Prov., Bala Hala, EF, 26 Sep. 2001, C. Bourmas leg., THNHM-I2012-02032 (THNHM); same loc., 23 Feb. 2003, Y. Sittimul leg., THNHM-I2012-02033 (THNHM).

Distribution. Thailand (Fig. 31D), Malaysia (W. Malaysia and Sarawak), and Brunei (Jaitrong and Yamane, 2011).

Bionomics. All materials examined of this species were collected from lowland primary rainforests, except for the single colony collected from a disturbed forest in Surat Thani Province (southern Thailand, SH10-TH01). Two colonies from Khao Nan National Park, southern Thailand (WJT07-

KN02 and WJT08-S1100) were found in the night, while a colony from Songkhla Province (southern Thailand, WJT08-S1022) was found in early morning.

Remarks. This species is closely related to *A. rotundicollis* in having only 2 long standing hairs on the vertex of the head and the promesonotum seen in profile strongly convex dorsally to form a high dome. However, it is easily separated from *A. rotundicollis* as follows: promesonotum with 2-4 standing hairs (more than 4 hairs in *A. rotundicollis*); dorsal surface of propodeum smooth and shiny (propodeum entirely sculptured in *A. rotundicollis*); pronotal dorsum superficially shagreened and shiny and somewhat wrinkled (smooth and shiny in *A. rotundicollis*). See also 'Remarks' for *A. laeviceps*.

***Aenictus stenocephalus* Jaitrong et Yamane**
(Fig. 32A-D)

Aenictus stenocephalus Jaitrong and Yamane, in Jaitrong *et al.*, 2010: 41, figs. 13-15; Jaitrong, 2013: 340, fig. 1F.

Types. The holotype and three paratype workers (SKYC, THNHM, examined) from NE. Thailand, Chaiphaphum Prov., near Phu Kheao, Agricultural area, 30 Jan. 1999, W. Jaitrong leg., WJT99-AG20.

Measurements. Worker (n = 5 including holotype and three paratypes): TL 3.0-3.1 mm; HL 0.55-0.58 mm; HW 0.48 mm; SL 0.63-0.65 mm; ML 1.00-1.03 mm; MTL 0.65-0.68 mm; PL 0.23-0.25 mm; CI 83-86; SI 132-137.

Description of worker. Head in full-face view narrow, elliptical, distinctly longer than broad, with slightly convex sides and posterior margin. Antenna 10-segmented; scape long, extending beyond posterior margin of head (SI 132-137); antennal segment II slightly shorter than III and as long as or slightly longer than IV; V-VII combined as long as

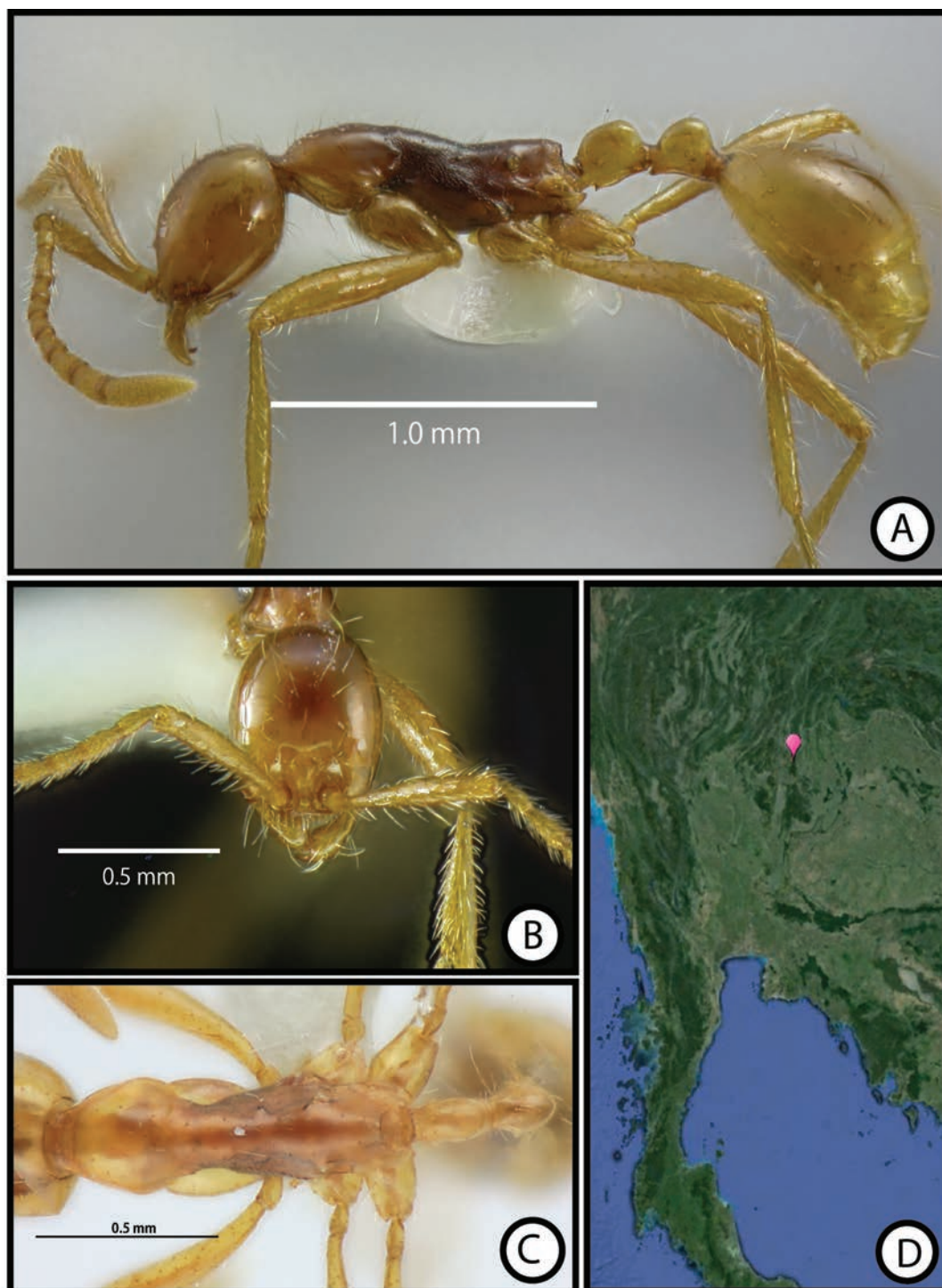


Figure 32. *Aenictus stenocephalus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

VIII and IX combined and almost as long as the terminal segment (X). Frontal carina short and thin, not extending beyond level of posterior margin of torulus. Clypeus short, with very slightly convex anterior margin that bears 8-10 denticles. Mandible with the apical tooth large and curved, followed by 10-12 minute teeth on masticatory margin. Mesosoma elongate; in profile pronotum weakly convex dorsally; promesonotum sloping gradually to metanotal groove. Propodeum slightly lower than promesonotum with its dorsal outline almost straight in profile; propodeal junction angulated; declivity of propodeum widely and shallowly concave, encircled with a thin rim. Petiole large, seen in profile subrectangular, slightly longer than high and almost straight dorsally; subpetiolar process weakly developed, with its ventral outline feebly convex, and anteroventral corner acutely angulate; postpetiole slightly smaller than petiole, with its node rounded above and scarcely longer than broad.

Head and antennal scape smooth and shiny. Pronotum smooth and shiny, with its anteriormost portion punctate; mesothorax and metapleuron with dense microreticulae; propodeum extensively smooth and shiny; propodeal declivity entirely sculptured; in the area in front of the junction with fine sculpture. Petiole smooth and shiny, with its anteriormost part sparsely punctate; postpetiole also extensively smooth and shiny. Gaster, and femora and tibiae of legs smooth and shiny.

Body with relatively sparse standing hairs mixed with sparse short hairs over the surface; longest pronotal hairs 0.15-0.18 mm long. Head, waist, gaster, antenna and legs yellow or pale brown; mesosoma dark brown.

Non-type material examined. NORTH-EASTERN: Chaiphaphum Prov., Phu Kheao W.S., dry evergreen forest, 11 Jul. 1998, W. Jaitrong leg. (THNHM); Chaiphaphum Prov., Phu Khieo [Kheao] W.S., savanna forest, 5 Jul. 1998, D. Wiwatwitaya leg. (THNHM).

Distribution. Thailand (Fig. 32D).

Bionomics. The type specimens were collected with pitfall traps in a natural forest (dry evergreen forest and grassland), and non-type specimens from an agricultural area near a natural forest in northeastern Thailand.

Remarks. This species is easily distinguished from the other species of the *A. wroughtonii* group by the almost entirely smooth and shiny body together with angulated propodeal junction. The other important characteristics are the exceptionally narrow head with long antennal scape, subrectangular petiole, only weakly convex pronotum, almost rudimentary subpetiolar process (but with an acutely angulate anteroventral corner).

Aenictus thailandianus Terayama et Kubota
(Fig. 33A-D)

Aenictus thailandianus Terayama and Kubota, 1993: 71, figs 11-13; Jaitrong, 2013: 340.

Types. Holotype and 39 paratype workers (NIAST, SKYC, THNHM) from N. Thailand, Chang Mai [Chiang Mai], Doi Step [Doi Suthep-Pui N.P.], ca. 1500 m alt. Six paratype workers (SKYC) were examined.

Measurements. Worker paratypes (n = 6): TL 3.33-3.50 mm; HL 0.68-0.78 mm; HW 0.65-0.73 mm; SL 0.50-0.58 mm; ML 1.10-1.23 mm; PL 0.28-0.33 mm CI 93-96; SI 77-81.

Description of worker. Head in full-face view slightly longer than broad, sides convex, posterior margin almost straight and occipital corner roundly angulate; occipital margin bearing a carina. Antenna 10-segmented; scape relatively long, extending beyond 2/3 of head length but not reaching posterolateral corner of head. Frontal carina relatively long and distinct, extending beyond level of posterior margin of torulus. Parafrontal ridge indistinct, slightly extending beyond level of posterior margin of torulus. Anterior clypeal

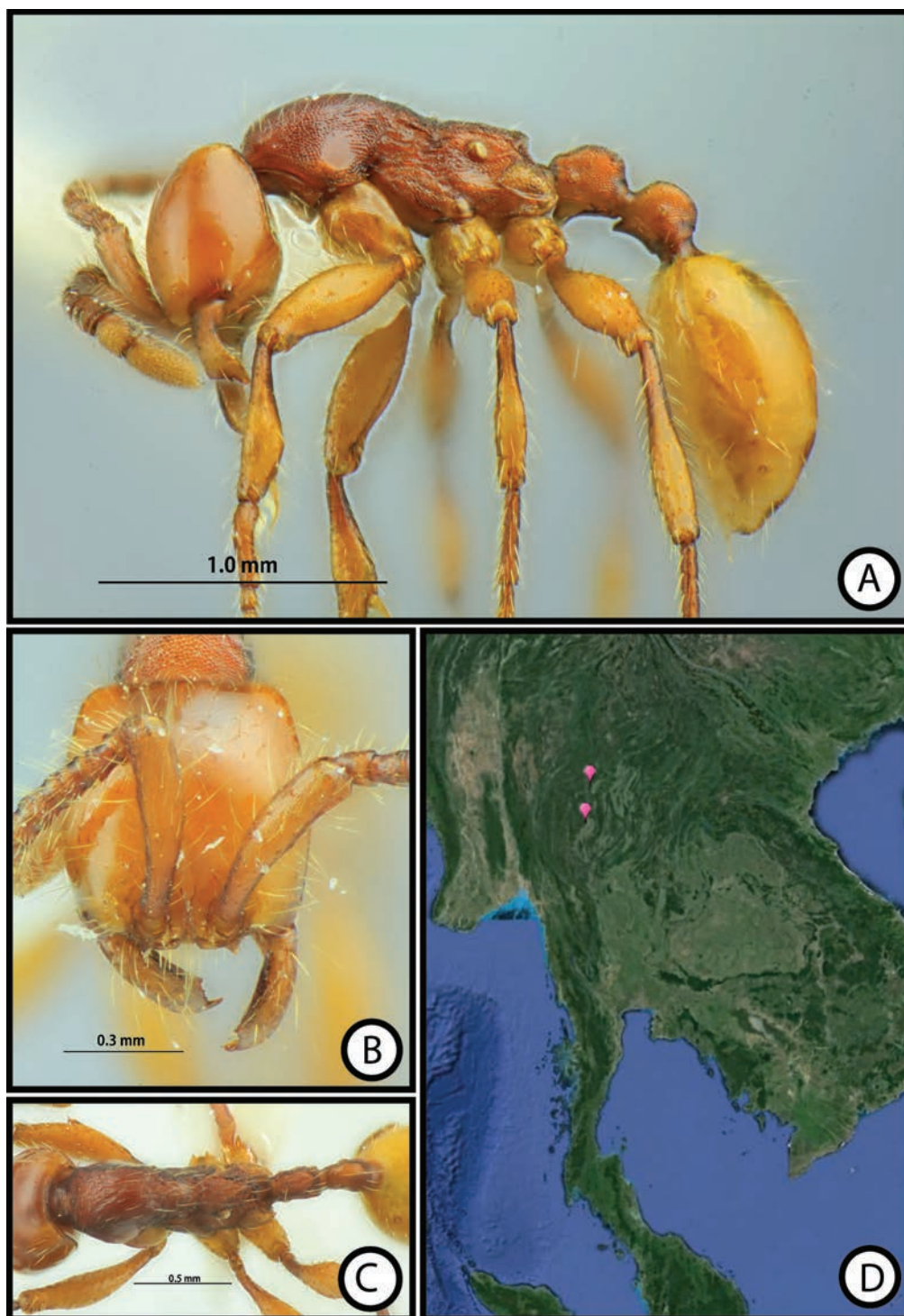


Figure 33. *Aenictus thailandianus*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

margin almost straight or feebly concave, its lateral portions forming blunt angle. Masticatory margin of mandible with a large acute apical tooth followed by a medium-sized subapical tooth, 8 denticles, and a medium-sized basal tooth; basal margin straight, lacking denticles. Maximum width of gap between anterior clypeal margin and mandibles approximately 1.5 times as broad as maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; metanotal groove indistinct or almost absent; mesopleuron relatively short and clearly demarcated from metapleuron by a deep groove; mesonotum demarcated from mesopleuron by a conspicuous ridge; metapleural gland bulla relatively large, its maximum diameter approximately 3 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with weakly convex dorsal outline; propodeal junction angulated, overhanging declivitous face of propodeum; the declivity narrowly and shallowly concave, encircled with a thin rim. Petiole almost as long as high, its node with dorsal outline elevated posteriorly; subpetiolar process low, with forward-directed lobe whose ventral margin straight or feebly concave. Postpetiole slightly shorter than petiole, with its dorsal outline convex.

Head and gaster entirely smooth and shiny. Mandible very finely striate. Antennal scape entirely punctate. Mesosoma, petiole, and postpetiole strongly macroreticulate. Lateral face of pronotum partly smooth or superficially reticulate; mesopleuron and lateral face of propodeum with relatively irregular longitudinal rugae. Legs weakly microreticulate, except for smooth coxae.

Head and mesosoma dorsally with relatively dense standing hairs; longest pronotal hairs 0.30-0.33 mm long. Antennal scape, mesosoma, petiole and postpetiole reddish brown; head, gaster and legs yellowish brown.

Non-type material examined. **NORTHERN:** Chiang Mai Prov., Muang Dist., Doi Suthep-Pui N.P., 9 Jun. 2001, W. Jaitrong leg., WJT01-DST01 (SKYC, THNHM); same loc. (pine evergreen forest), 8 Jun. 2001, S. Hasin leg. (SKYC, THNHM); Chiang Mai Prov., Doi Ang Khang, 21 Aug. 1998, Sk. Yamane leg., TH98-SKY-30 (SKYC, THNHM); same loc., 17 Aug. 2001, W. Jaitrong leg., WJT01-AK10 (SKYC, THNHM).

Distribution. Vietnam and Thailand (Fig. 33D) (Jaitrong and Yamane, 2013).

Bionomics. This species mainly inhabits highlands (1,000-1,500 m alt.), both primary and secondary forests.

Remarks. *Aenictus thailandianus* is most similar to *A. cylindripetiolus* in having the mandible with more than 4 teeth and entirely sculptured promesonotum. However, it can be separated from the latter by the following characteristics: Pronotum entirely punctate (reticulate in the latter); petiole almost as long as postpetiole, with high node (distinctly longer than high in the latter); femora superficially sculptured (punctate, shagreened or partly reticulate; but in the latter entirely smooth and shiny except basalmost portion micropunctate); body larger (TL 3.30-3.50 mm, HW 0.65-0.73 mm in the former; TL 2.90-3.15 mm, HW 0.60-0.65 mm in the latter).

Aenictus vieti Jaitrong et Yamane (Fig. 34A-D)

Aenictus vieti Jaitrong and Yamane in Jaitrong et al., 2010: 44, figs 11, 12, 15.

Types. Holotype and seven paratype workers (IEBR, SKYC, THNHM, examined) from N. Vietnam, Lao Cai, Sa Pa, 4 May 2002, K. Eguchi leg., Eg02-VN-272.

Measurements. Worker (n = 11): TL 2.85-2.95 mm; HL 0.58-0.60 mm; HW 0.45-0.48 mm; SL 0.58 mm; ML 0.98-1.00 mm; MTL 0.58-6.00 mm; PL 0.23 mm; CI 78-79; SI

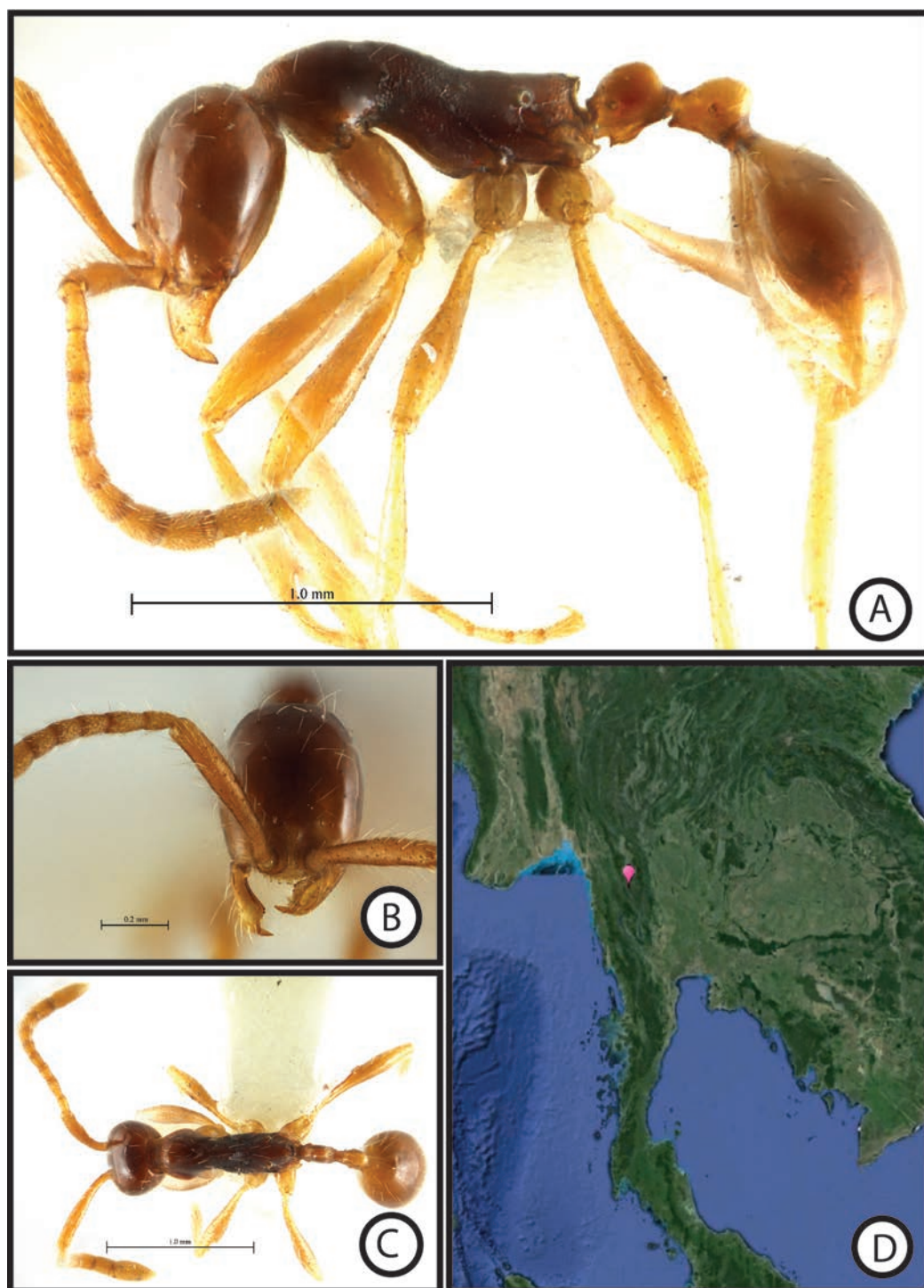


Figure 34. *Aenictus vieti*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

121-128.

Description of worker. Head in full-face view elliptical, slightly longer than broad, with convex sides and almost straight posterior margin of head. Antenna 10-segmented; scape long, reaching posterolateral corner of head; antennal segments II-X each longer than broad; II slightly shorter than III, but as long as each of IV-VI or more; terminal segment (X) slightly longer than VIII and IX combined. Frontal carina long, extending posteriad beyond posterior margin of antennal torulus. Clypeus short, with its anterior margin convex, bearing 8-10 denticles. Mandible with the apical tooth large and curved, followed by 10-12 minute teeth on masticatory margin. With mesosoma in profile, pronotum weakly convex dorsally, demarcated from mesonotum by a shallow transverse groove; mesonotum convex, promesonotum sloping gradually to metanotal groove. Propodeum slightly lower than promesonotum with its dorsal outline almost straight in profile; propodeal junction angulated; declivity of propodeum widely and shallowly concave, encircled with a thin rim. Petiole in profile slightly longer than high and somewhat rounded dorsally; subpetiolar process developed, with its ventral margin convex anteriorly and bearing a thin rim below, with the anteroventral corner acutely angulate; postpetiole slightly smaller than petiole; its node rounded dorsally and scarcely longer than broad.

Head smooth and shiny; antennal scape sparsely punctate. Pronotum smooth and shiny, with its anteriormost portion punctate; mesothorax, metapleuron and propodeum with dense microreticulae and several rugae; dorsum and sides of propodeum with short longitudinal rugae along the junction. Dorsum of petiole and entire postpetiole smooth and shiny. Gaster, and femora and tibiae of legs smooth and shiny.

Body with relatively sparse standing hairs mixed with sparse short hairs over the surface;

longest pronotal hairs 0.10-0.13 mm long. Head, waist, gaster, mandible, antenna and legs yellow or pale brown; mesosoma brown.

Non-type material examined. WESTERN: Tak Prov., Umphang W.S., 12 Sep. 2004, W. Jaitrong leg., WJT04-W037 (THNHM).

Distribution. Taiwan and Vietnam (Jaitrong *et al.*, 2010), and Thailand (new record, fig. 34D).

Bionomics. The single colony was collected from the highland of western Thailand in a disturbed forest.

Remarks. *Aenictus vietii* is closely related to *A. camposi*, but is slightly larger than the latter in body length. It is easily distinguished from *A. camposi* as follows: subpetiolar process anteroventrally clearly acutely angulate in *A. vietii* (unarmed in *A. camposi*); pronotum demarcated from mesonotum by a shallow transverse groove in *A. vietii* (groove indistinct in *A. camposi*).

Aenictus watanasiti Jaitrong et Yamane (Fig. 35A-D)

Aenictus watanasiti Jaitrong and Yamane, 2013: 213, fig. 18A-C.

Types. Holotype and 24 paratype workers from N. Thailand, Chiang Mai Prov., Muang Dist., Doi Suthep-Pui N.P., 7 Jun. 2001, W. Jaitrong leg., WJT01-DST02 (BMHN, MCZC, SKYC, THNHM) and 10 paratype workers, same colony as holotype collected by K. Eguchi, Eg01-TH-080 (SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 10): TL 2.65-3.05 mm; HL 0.53-0.65 mm; HW 0.50-0.66 mm; SL 0.38-0.50 mm; ML 0.80-1.03 mm; PL 0.20-0.26 mm; CI96-106; SI 70-79.

Description of worker. Head in full-face view subrectangular, almost as long as broad, sides convex, posterior margin feebly concave. Antenna 10-segmented; scape relatively short, slightly extending beyond midlength of head. Frontal carina relatively

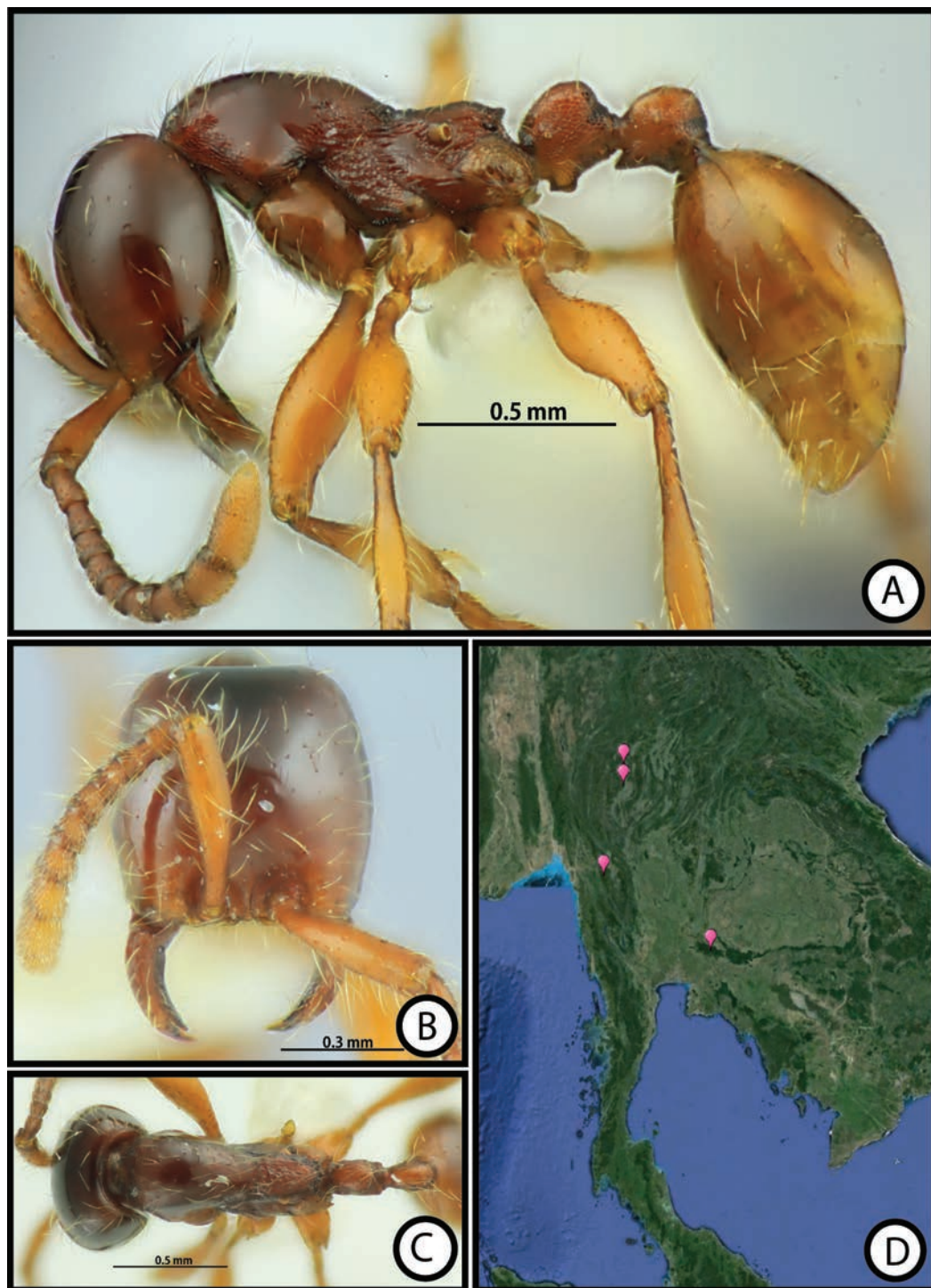


Figure 35. *Aenictus watanasiti*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

short, not reaching level of posterior margin of torulus. Parafrontal ridge incomplete. Anterior clypeal margin feebly concave, concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with 3 teeth, including a large apical tooth; basal margin feebly concave. Maximum width of gap between anterior clypeal margin and mandibles approximately 2 times as broad as maximum width of mandible. Promesonotum strongly convex dorsally and sloping gradually to metanotal groove; mesopleuron not clearly demarcated from metapleuron; metapleural gland bulla relatively large, its maximum diameter approximately 3.8 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile extremely lower than pronotum and relatively short with weakly convex dorsal outline; propodeal junction angulate; declivity of propodeum broadly and shallowly concave, encircled with a distinct rim. Petiole slightly longer than high, elevated posteriorly; subpetiolar process low and subrectangular, anteroventral corner acutely angulate, but posteroventral corner bluntly angulate. Postpetiole almost as long as petiole, with its dorsal outline roundly convex.

Head entirely smooth and shiny. Mandible very finely striate. Basal 1/3 of antennal scape microreticulate, apical 2/3 smooth and shiny. Promesonotum smooth and shiny except for anteriormost portion reticulate; upper portion of mesopleuron reticulate; lower portion of mesopleuron and propodeum with several longitudinal rugae; metapleuron reticulate; petiole entirely reticulate; postpetiole reticulate except for dorsal face smooth and shiny. Legs smooth and shiny except basalmost portion of femora and tibiae micropunctate.

Head and mesosoma dorsally with relatively dense standing hairs mixed with decumbent hairs; longest pronotal hairs 0.18-0.20 mm long. Head including mandible and antennal

scape, mesosoma, petiole postpetiole, and first gastral tergite dark reddish brown; tip of gaster, gastral sternites yellowish brown. Typhlatta spot absent.

Non-type material examined. NORTHERN: Chiang Mai Prov., Chiang Dao Dist., 21 Sep. 2013, W. Jaitrong leg., WJT210913-18 (THNHM); Chiang Mai Prov., Muang Dist., Doi Suthep-Pui N.P., May 2008, S. Sonthichai leg., WJT08-ST01 (SKYC, THNHM); same loc., Feb. 2008, S. Sonthichai leg., (THNHM). WESTERN: Tak Prov., Thung Yai W.S., 20 Oct. 2000, S. Hasin leg. (AMK, SKYC). NORTHEASTERN: Nakhon Ratchasima Prov., Khao Yai N.P., 30 May 2000, W. Lappon leg. (SKYC, THNHM).

Distribution. Vietnam (Jaitrong and Yamane, 2013) and Thailand (Fig. 35D).

Bionomics. Judging from the specimens examined this species is distributed from the lowland to highland (300-1,100 m alt.). I observed this species preying on ants of the genus *Ectomomyrmex* (WJT210913-18).

Remarks. *Aenictus watanasiti* is similar to *A. khaoyaiensis*, but the mandible has 3 teeth (4 teeth in the latter) and the subpetiolar process is subrectangular (low, with anteroventral corner acutely angulate and ventral outline feebly convex in the latter).

Aenictus wilaiiae Jaitrong et Yamane (Fig. 36A-D)

Aenictus wilaiiae Jaitrong and Yamane, 2013: 215, fig. 19A-C.

Types. Holotype and 39 paratype workers from E. Thailand, Chachoengsao Prov., Khao Ang Reu Nai W.S., 29 May 2005, W. Jaitrong leg., WJT05-E203 (BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Holotype and paratype workers (n = 10): TL 2.10-2.55 mm; HL 0.53-0.55 mm; HW 0.50-0.53 mm; SL 0.36-0.39 mm; ML 0.75-0.83 mm; PL 0.18-0.23 mm; CI 95-100; SI 71-74.

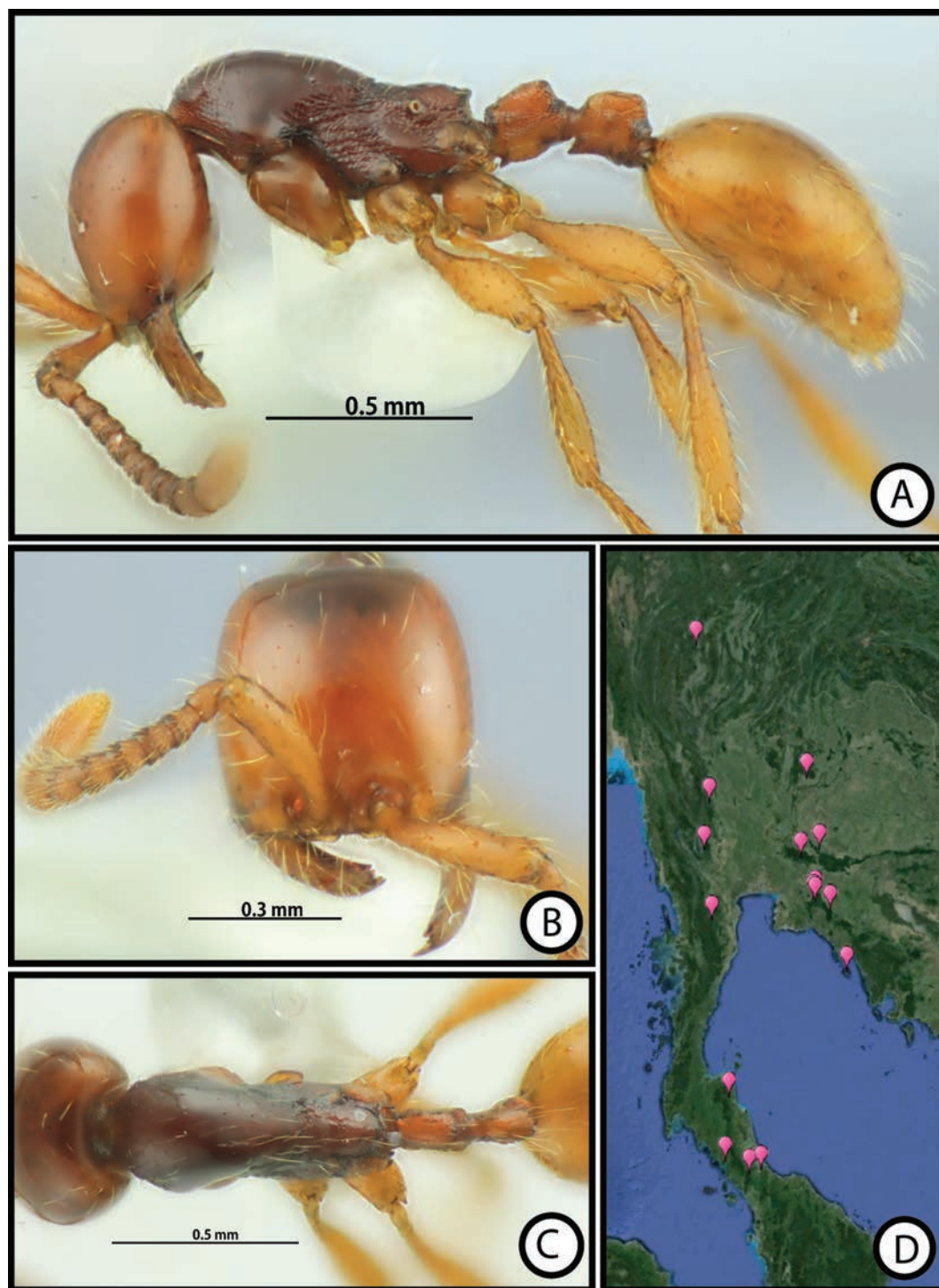


Figure 36. *Aenictus wilaiae*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

Description of worker. Head in full-face view subrectangular, slightly longer than broad, sides weakly convex and posterior margin almost straight or feebly concave. Antenna 10-segmented; scape relatively short, not reaching 2/3 of head length. Frontal carina slightly extending beyond level of posterior margin of torulus. Parafrontal ridge absent. Anterior clypeal margin almost straight, lacking denticles and partly concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with a large acute apical tooth followed by a medium-sized subapical tooth, 2 denticles, and a medium-sized basal tooth; basal margin feebly concave lacking denticles. Maximum width of gap between anterior clypeal margin and mandibles approximately 1.8 times as broad as maximum width of mandible. Promesonotum convex dorsally and sloping gradually to metanotal groove; mesopleuron not clearly demarcated from metapleuron; metapleural gland bulla relatively small, its maximum diameter approximately 2 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with almost straight or feebly concave dorsal outline, sloping gradually to propodeal junction that is nearly right-angled; declivity of propodeum shallowly concave, and encircled with a distinct rim. Petiole almost as long as high, with its dorsal outline slightly elevated posteriorly; subpetiolar process generally very low, with its anteroventral corner angulate and ventral margin convex. Postpetiole almost as long as petiole, with its dorsal outline convex.

Head entirely smooth and shiny. Mandible very finely striate. Antennal scape superficially microreticulate, but shining. Promesonotum smooth and shiny except for anteriormost portion punctate, lateral face of pronotum superficially microreticulate with smooth and shiny bottoms; mesopleuron, metapleuron, and propodeum entirely reticulate except for metapleuron partly smooth and shiny; in

addition, mesopleuron with longitudinal rugae; lateral face of propodeum with 2-3 short longitudinal rugae. Petiole and postpetiole densely punctate. Legs entirely smooth and shiny.

Head and mesosoma dorsally with relatively dense standing hairs; longest pronotal hairs 0.10-0.13 mm long. Head, gaster, and legs yellowish brown; mesosoma, petiole, and postpetiole reddish brown; mandible reddish brown. Typhlatta spot absent.

Non-type material examined. NORTHERN: Chiang Mai Prov., Chiang Dao Dist., 24 Aug. 2014, W. Jaitrong leg., WJT240814-1 (THNHM). WESTERN: Kanchanaburi Prov., Sri Sawat Dist., 18-19 Jan. 2014, P. Pitaktunskul leg. (THNHM); Kanchanaburi Prov., Sai Yok N.P., 140 m alt., 30 Jun. 2002, Sk. Yamane leg., TH02-SKY-19 (SKYC, THNHM). NORTHEASTERN: Chaiyaphum Prov., Phu Kheao W.S., 10 Oct. 2002, N. Kongjam leg. (AMK, SKYC); same loc., 30 Jan. 1999, W. Jaitrong leg., WJT99-AG22; Nakhon Ratchasima Prov., Khao Yai N.P., 16 Aug. 2002, D. Wiwatwitaya leg. (AMK, SKYC, THNHM); same loc., 25 May 2006, W. Jaitrong leg., WJT250505-1 (THNHM); same loc., 25 May 2006, W. Jaitrong leg., WJT250505-4 (THNHM); same loc., 31 May 2000, W. Jaitrong leg., TH00-WJT01 (THNHM); same loc., 31 May 2000, Sk. Yamane leg., TH00-SKY-35 (THNHM); Nakhon Ratchasima Prov., Sakaerat, 15 Sep. 2001, W. Jaitrong leg., WJT01-TH30 (SKYC, THNHM); same loc., 20 May 2005, S. Hasin leg. (AMK); same loc., 5 Nov. 2011, W. Jaitrong leg., TH11-WJT186 (THNHM); same loc., 27 Jun. 1998, W. Jaitrong leg. (THNHM); CENTRAL: Uthai Thani Prov., Ban Rai Dist., Kan Ma kud Village, 18 Jun. 2010, W. Jaitrong leg., HKK10-06-03 (THNHM); Pechaburi Prov., Kang Krachan N.P., 320 m alt., 28 Jun. 2014, Sk. Yamane, S. Hasin and M. Maruyama leg., TH14-SKY-83 (SKYC, THNHM). EASTERN: Chanthaburi Prov., Khao Soi Dao W.S., 15 May 2008,

W. Jaitrong leg., WJT08-E099 (SKYC, THNHM); same loc., 2 Jun. 2001, Sk. Yamane leg., TH01-SKT-35 (SKYC, THNHM); same loc., 2 Jun. 2001, Sk. Yamane leg., TH01-SKY-29 (SKYC, THNHM); Chachoengsao Prov., Thatakiab Dist., Khao Ang Reu Nai W.S., 23 Apr. 2003, W. Jaitrong leg., WJT03-TH17 (SKYC, THNHM); same loc., 20 Nov. 2003, H. Iamsa-ard leg., WJT03-TH526 (THNHM); same loc., 28 May 2005, W. Jaitrong leg., WJT05-E203 (THNHM); same loc., 27 Aug. 2005, W. Jaitrong leg., THNHM-I2005-3461 (THNHM); same loc., 28 Oct. 2002, W. Jaitrong leg., WJT02-TH0143 (THNHM); Trat Prov., Ko Kud Island, 20 Sep. 2009, T. Jeenthong leg., THNHM-I2009-01556 (THNHM). SOUTHERN: Nakhon Si Thammarat Prov., Khao Nan N.P., 13 Mar. 2007, Sk. Yamane leg., TH07-SKY-26 (SKYC, THNHM); Trang Prov., Palian Dist., Ban Suso, 29 Jun. 2008, W. Jaitrong leg. (THNHM); Songkhla Prov., Ton Nga Chang W.S., 24 Apr. 1997, N. Noon-anant leg., N97-2 (SKYC, THNHM); Songkhla Prov., Khor Hong Hills, Campus of Songkhlanakarin University, 19 Oct. 2011, W. Jaitrong leg., TH11-WJT-157 (= TH07-SKY-142, Sk. Yamane leg.) (SKYC, THNHM).

Distribution. Thailand (Fig. 36D).

Bionomics. This species mainly inhabits lowland primary forests. I observed this species preying on other ants (HKK10-06-03; *Monomorium pharaonis*) and termites (HKK10-06-03) in N. Thailand.

Remarks. *Aenictus wilaiiae* is most similar in general appearance to *Aenictus pilosus* Jaitrong et Yamane, from the Philippines. However, it is separated from the latter by the following characteristics: promesonotum in profile weakly convex (strongly convex, forming a dome in the latter); propodeum in profile with feebly convex dorsal outline (clearly straight in the latter); petiole sessile with low node, its posterior face encircled with a thin carina (not encircled with a carina

in the latter); ventral margin of subpetiolar process convex (concave in the latter); postpetiole almost as long as petiole (slightly longer in the latter); body smaller.

Aenictus wiwatwitayai Jaitrong et Yamane (Fig. 37A-D)

Aenictus wiwatwitayai Jaitrong and Yamane, 2013: 218, fig. 20A-C.

Types. Holotype and 19 paratype workers from NE. Thailand, Nakhon Ratchasima Prov., Sakaerat Environmental Research Station, dry evergreen forest, 9.VII.1999, Sk. Yamane leg., TH99-SKY-05 (BMHN, MCZC, SKYC, THNHM, examined).

Measurements. Larger workers (holotype and paratypes, n = 10): TL 2.00-20.5 mm; HL 0.45-0.50 mm; HW 0.40-0.45 mm; SL 0.28-0.35 mm; ML 0.63-0.68 mm; PL 0.18-0.20 mm; CI 89-90; SI 69-78.

Smaller worker (a paratype): TL 1.80 mm; HL 0.40 mm; HW 0.35 mm; SL 0.20 mm; ML 0.55 mm; PL 0.15 mm; CI 88; SI 57.

Description of worker. Head in full-face view subrectangular, clearly longer than broad, sides convex, posterior margin straight; occipital margin bearing a carina. Antenna 10-segmented; scape relatively short, not reaching 2/3 of head length. Frontal carina relatively short, not reaching level of posterior margin of torulus. Parafrontal ridge feeble and incomplete. Anterior clypeal margin concave, concealed by curved anterior extension of frontal carina. Masticatory margin of mandible with a large acute apical tooth followed by a medium-sized subapical tooth, 2-3 denticles, and a medium-sized basal tooth; basal margin almost straight. Maximum width of gap between anterior clypeal margin and mandibles approximately 2.4 times as broad as maximum width of mandible. Promesonotum weakly convex or almost straight dorsally and sloping gradually to propodeal junction; metanotal

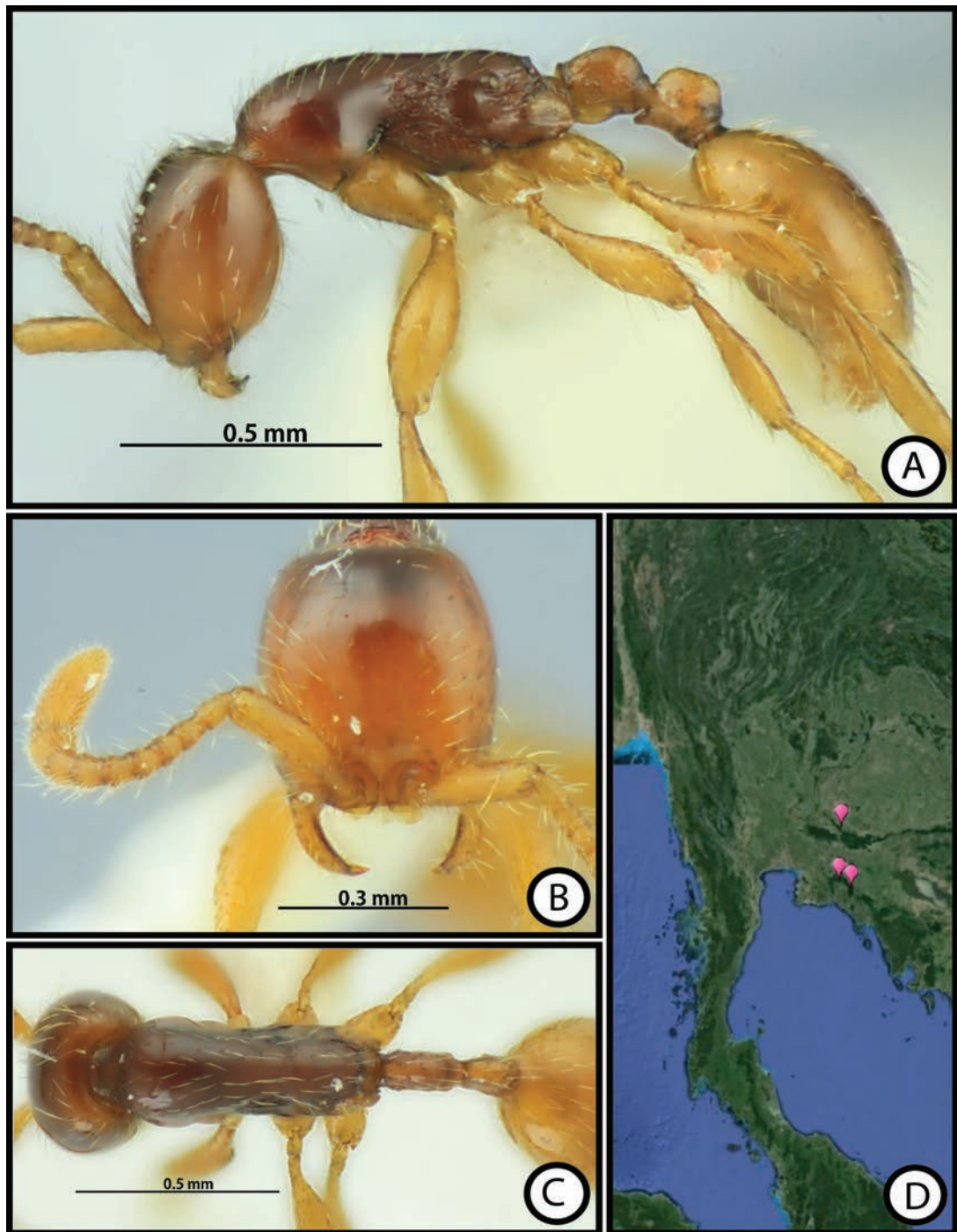


Figure 37. *Aenictus wiwatwitayai*. A, Habitus in profile; B, head in full-face view; C, dorsal view of body; D, distribution.

groove indistinct; mesopleuron relatively long, demarcated from metapleuron by an indistinct groove; metapleural gland bulla relatively large, its maximum diameter approximately 2.2 times as long as distance between propodeal spiracle and metapleural gland bulla. Propodeum in profile with almost straight or feebly convex dorsal outline; propodeal junction nearly right-angled; declivity of propodeum widely and shallowly concave, encircled with a distinct rim. Petiole slightly longer than high, its node low, dorsally convex; subpetiolar process weakly produced below, its anteroventral corner acutely angulate and ventral margin convex. Postpetiole subrectangular, shorter than petiole, with its dorsal outline almost straight.

Head including mandible and antennal scape entirely smooth and shiny. Dorsum of mesosoma smooth and shiny except for anteriormost portion and area in front of propodeal junction punctate; mesopleuron and lateral face of propodeum with relatively irregular longitudinal rugae; metapleuron largely smooth and shiny; petiole anteriorly, laterally and posteriorly reticulate, but dorsally smooth and shiny; postpetiole entirely smooth and shiny.

Head with relatively dense long standing hairs mixed with dense short hairs; mesosoma dorsally with relatively dense decumbent hairs; longest pronotal hairs 0.08-0.10 mm long. Head, mesosoma, petiole, and postpetiole reddish brown; gaster and legs yellowish brown.

Smaller worker (a paratype). Similar to the larger worker in general appearance with the following conditions that should be noted: head relatively long and narrow (CI 88); antennal scape very short (SI 57), not reaching midlength of head; sculpturation weaker than in the larger worker, entire body smooth and shiny.

Non-type material examined. EASTERN: Chacheungsao Prov., Khao Ang Reu Nai W.S.,

20 Sep. 2003, H. Iamsa-ard leg., WJT03-TH526 (SKYC, THNHM); Chanthaburi Prov., Khao Soi Dao W.S., 2 Jun. 2001, Sk. Yamane leg., TH01-SKY-29 (SKYC, THNHM).

Distribution. Vietnam (Jaitrong and Yamane, 2013) and Thailand (Fig. 37D).

Bionomics. This species inhabits lowland primary forests. All of Thai specimens were collected from dry evergreen forests.

Remarks. *Aenictus wiwatwitayai* is closely related to *A. baliensis* Jaitrong et Yamane, *A. longicephalus* Jaitrong et Yamane, and *A. minipetiolus* Jaitrong et Yamane in having the mandible with more than 4 teeth (including denticles) and smooth and shiny propodeal dorsum. It can be separated from the latter three by the following characteristics: mesosoma almost flat dorsally or feebly convex (strongly convex in the latter); subpetiolar process low, with its anteroventral corner angular, and directed forward and downward (subpetiolar process subrectangular in the latter).

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