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Original article

Aenictus shilintongae sp. nov. (Hymenoptera: Formicidae: Dorylinae), an Army Ant of the *Aenictus laeviceps* Species Group from China

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ABSTRACT:- *Aenictus shilintongae,* a new army ant from Southeast China, is described based on the worker caste. The new species belongs to the *A. laeviceps* species group and seems to be closely related to *A. rotundicollis* Jaitrong et Yamane, 2011 and *A. sonchaengi* Jaitrong et Yamane, 2011, but is easily distinguished from the latter two in having dense pilosity on head and mesosoma. It is named in honor of Her Royal Highness Princess Maha Chakri Sirindhorn of the Kingdom of Thailand after her name in Chinese.

KEY WORDS: Army ants, *Aenictus shilintongae*, Taxonomy, China.

INTRODUCTION

Aenictus Shuckard, 1840 (subfamily Dorylinae) 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, 1995; Rościszewski and Maschwitz, 1994; Jaitrong and Yamane, 2011). Currently 180 valid species and 30 valid subspecies names are listed (Antweb, 2016). They are widely distributed throughout the Old World tropics and subtropics, from Africa through the Middle East, India, South China, the southernmost part of Japan, Southeast Asia, to New Guinea and Australia (Arnol′di, 1968; Bolton, 1994; Gotwald, 1995; Aktaç *et al*., 2004; Radchenko and Alipanah 2004; Jaitrong and Yamane, 2013). Recently, Jaitrong and Yamane (2011) established 12 species groups in the genus based on the worker morphology for the species from the eastern Oriental, Indo-Australian and Australasian regions.

The *Aenictus laeviceps* species group is one of the larger species groups in the genus and has been revised in detail by Jaitrong and Yamane (2011). The group contains 13 species in the eastern Oriental, Indo-Australian and Australasian faunal regions that can easily be separated from the other *Aenictus* species by the combination of a large and dark body, presence of typhlatta spot (usually located anterior to the occipital corner), and a rounded anterior clypeal margin bearing several denticles (Jaitrong and Yamane, 2011). In this group only one species, *A. hodgsoni* Forel, 1901, has so far been known from China and Taiwan (see

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Jaitrong and Yamane, 2011). In June 2014, while examining ant specimens in the insect collection of the National Museum of Natural History, Smithsonian Institution, Washington DC., U.S.A., we found 5 unidentified *Aenictus* specimens of a species belonging to the *A. laeviceps* species group that were collected in Mokanshan, South China. After carefully examining these specimens under a stereomicroscope and comparing them with type material of closely related species, we concluded that this species is new to science. We here describe the species and name it *Aenictus shilintongae* sp. nov. in honor of Her Royal Highness Princess Maha Chakri Sirindhorn of the Kingdom of Thailand after her name in Chinese.

MATERIALS AND METHODS

The type series of *Aenictus shilintongae* (Fig. 1) was compared with type material of closely related species: *Aenictus rotundicollis* Jaitrong et Yamane, 2011 (THNHM, fig. 2C-D), *Aenictus sonchaengi* Jaitrong et Yamane, 2011 (THNHM, fig. 3), and *Aenictus hodgsoni* Forel, 1901 (MHNG, fig. 2A-B). Most morphological observations were made with an Olympus SZX12 stereoscope.

Multi-focused montage images were produced using NIS-Elements-D-[Sequence6*-Focused] from a series of source images taken by a Nikon Digital Sight-Ri1 camera attached to a Nikon AZ100M stereoscope. Worker measurements were made using an ocular micrometer, recorded to the nearest 0.01 mm.

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

CI Cephalic index, HW/HL × 100.
HL Maximum head length in full-face view, measured from the anterior clypeal margin to the midpoint of a ine drawn across the lposterior margin of the 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 the metapleuron in profile.
PL Petiole length measured from the anterior margin of the peduncle to the posterior-most point of the tergite.
SI Scape index, SL/HW × 100.
SL Scape length excluding the basal constriction and condylar bulb.
TL Total length, roughly measured from the anterior margin of the head to the tip of the gaster in stretched specimens.

Abbreviations of the type depositories are as follows:

MHNG Museum d'Histoire Naturelle, Geneva, Switzerland
THNHM Natural History Museum of the National Science Museum, Thailand
USNM National Museum of Natural History, Smithsonian Institution, Washinton DC, U.S.A.

The general terminology for the worker caste of the ants 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).

Taxonomy

Aenictus laeviceps species group

Diagnosis. 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. This group is closely related to the *A. currax* and *A. leptotyphlatta* groups (see Jaitrong and Yamane, 2011). *A. laeviceps* group is distinguished from the latter 2 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.

Distribution. China, Vietnam, Cambodia, Thailand, Malay Peninsula, Borneo (Sarawak, Brunei, Sabah, and Kalimantan), Sulawesi, Java and the Philippines (Jaitrong and Yamane, 2001).

Aenictus shilintongae sp. nov.

(Fig. 1)

Types. Holotype (USNM) and four paratype workers (USNM) from Mokanshan, SE. China, W.M. Mann leg., 1954, USNMNH2069734.

Measurements. Holotype: TL 4.70 mm; HL 0.86 mm; HW 0.79 mm; SL 0.66 mm; ML 1.19 mm; PL 0.31 mm; CI 92; SI 83. Paratypes (n=4): TL 4.50-4.75 mm; HL 0.79-0.86 mm; HW 0.50-0.63 mm; SL 0.26-0.30 mm; ML 1.121.19 mm; PL 0.20-0.30 mm; CI 92-95; SI 65-83.

Description of Worker (Holotype and Paratypes). Head in full-face view oval, slightly longer than broad, with sides convex and posterior margin almost straight; occipital margin bearing a narrow carina. Antennal scape relatively short, only reaching 3/4 of head length; antennal segments II-X each longer than broad; terminal segment (X) almost as long as VII+VIII+IX. Frontal carina short, slightly extending beyond posterior margin of torulus. Anterior margin of clypeus slightly convex, bearing 10-11 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 3-4 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 weakly angulate; declivity seen in profile almost vertical. Petiole relatively short, globular, slightly shorter than high, its dorsal outline slightly elevated posteriorly; subpetiolar process well developed and triangular, its apex directed downward and backward; postpetiole almost as long as petiole and with convex dorsal outline.

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 longitudinally rugulose but rugulae weaker than on mesonotum. Petiole superficially microreticulate but shiny; postpetiole entirely smooth and shiny. Legs entirely smooth and shiny.

Head and mesosoma dorsally with relatively dense standing hairs mixed with sparse short hairs over the surface; longest

Figure 1. Worker of *Aenictus shilintongae* sp. nov. (paratype). A. Body in profile; B, head in full-face view; C, dorsal view of body.

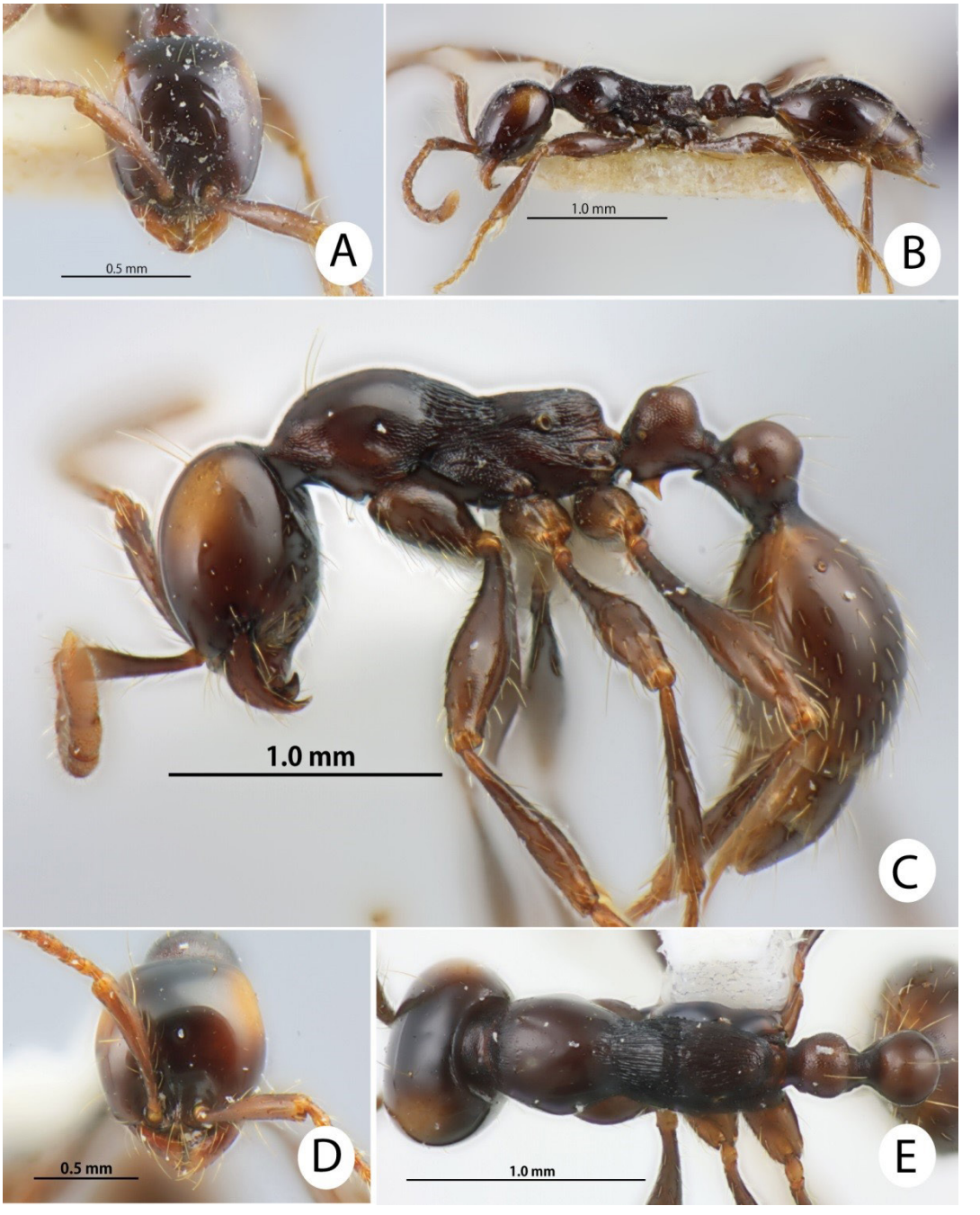

Figure 2. Workers of *Aenictus laeviceps* species group. A-B, *Aenictus hodgsoni* (lectotype); C-E, *Aenictus rotundicollis* (holotype). A, D, Head in full-face view; B, C, body in profile; E, dorsal view of body.

Figure 3. Worker of *Aenictus sonchaengi* (holotype). A. Body in profile; B, head in full-face view; C, dorsal view of body.

pronotal hair 0.23-0.27 mm long. Entire body dark reddish brown. Typhlatta spot relatively large and located anterior to occipital corner.

Distribution. So far this species has been known only from the type locality.

Thai Name. Mod Thahan Thepa (มดทหารเทพา), name given by Her Royal Highness Princess Sirindhorn.

Remarks. This species is closely related to *Aenictus rotundicollis* and *A. sonchaengi* in having a large body size and the promesonotum seen in profile strongly convex dorsally to form a high dome (Figs 2, 3). However, it is easily separated from the latter two as follows: head with a pair of long standing hairs plus dense shorter standing hairs (head with only a pair of long standing on vertex in the latter); promesonotum with more than 15 standing hairs (with 2-4 standing hairs in *A. rotundicollis* and 5-12 hairs in *A. sonchaengi*); dorsal surface of propodeum entirely sculptured as in *A. rotundicollis* (smooth and shiny in *A. sonchaengi*); dorsal surface of propodeum with sparse standing hairs as in *A. sonchaengi* (without hairs in *A. rotundicollis*). *A. hodgsoni* is similar to *A. shilintongae* in having sparse standing hairs mixed with short hairs on the head and promesonotum, and the mesopleuron densely sculptured (Fig. 2A, B). *Aenictus shilintongae* can be distinguished from *A. hodgsoni* by the petiole shorter than high (longer than high in *A. hodgsoni*). Moreover, *A. shilintongae* can be distinguished from the other members of the *A. laeviceps* group by short antennal scape (reaching only ¾ of head length in *A. shilintongae*, while usually attaining posterior corner of head in the members of the species group).

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