The ant genus *Aenictus* from Laos, with description of a new species (Hymenoptera: Formicidae: Aenictinae)

Weeyawat Jaitrong\(^\text{a,b,*}\), Seiki Yamane\(^\text{b}\), Niyom Chanthalangs\(^\text{c}\)

\(\text{* Corresponding author. Natural History Museum, National Science Museum, Technopolis, Khlong 5, Khlong Luang, Pathum Thani, 12120, Thailand. Fax: +66 25779991. E-mail address: polyrhachis@yahoo.com (W. Jaitrong).}\)

\(\text{\textsuperscript{a} Natural History Museum, National Science Museum, Technopolis, Khlong 5, Khlong Luang, Pathum Thani, 12120, Thailand.}\)

\(\text{\textsuperscript{b} Laboratory of Biodiversity Sciences, Graduate School of Science and Engineering, Kagoshima University, Kagoshima, 8900065 Japan.}\)

\(\text{\textsuperscript{c} Forest Research Center, National Agriculture and Forestry Research Institute, Saythany District, Vientiane Capital, Lao Democratic People's Republic.}\)

**A B S T R A C T**

Ants of the genus *Aenictus* are recorded from Laos for the first time. Here, we report six species including a new species and a new status: *Aenictus binghami* Forel, *A. cf. dentatus* Forel, *A. doydeei* Jaitrong et Yamane, sp. nov., *A. cf. fuchuanensis* Zhou, *A. hodgsoni* Forel, stat. nov., and *A. nishimurai* Terayama et Kubota. *A. doydeei* sp. nov. is very probably a nocturnal species.

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**Introduction**

*Aenictus Shuckard, 1840* is the only genus contained within the subfamily Aenictinae of the family Formicidae. All of the members of this genus 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), India, South China, the southernmost part of Japan, various countries in Southeast Asia, to New Guinea and Australia (*Arnold*, 1968; Bolton, 1994; *Gotwald*, 1995; *Akaç* et al., 2004; *Radchenko* and *Alipanah*, 2004). Currently 38 named species based on the worker caste have been identified in Southeast Asia (*Wilson*, 1964; *Terayama* and *Yamane*, 1989; *Terayama* and *Kubota*, 1993; *Tang* et al., 1995; *Zhou* and *Chen*, 1999; *Yamane* and *Hashimoto*, 1999; *Zhou*, 2001; *Terayama*, 2009; *Jaitrong* and *Nabhithabhata*, 2005; *Bolton* et al., 2006; *Jaitrong* and *Eguchi*, 2010; *Jaitrong* and *Nur-Zati*, 2010; *Jaitrong* and *Yamane*, 2010; *Jaitrong* et al., 2010).However, no species of this genus has thus far been recorded in Laos.

In the present paper, six species of *Aenictus* collected from Laos in June 2010 are recorded. Among them, a species related closely to *Aenictus javanus* and *Aenictus nishimurai*, is described as new to science based on the worker caste.

**Materials and methods**

The material was collected from two sites within Vientiane Province in June 2010. The first site was in Sivilay Village (18°15′N, 102°27′E, ca. 200 m alt.), Nasaythong District, located approximately 20 km northwest of Vientiane City. We collected ants from plantations of several tree species and from the area surrounding the headquarters. The second site was in Phang Dang Village, Pak Ngum District, approximately 30 km northeast of Vientiane City. We collected ants in disturbed areas around the Village along the Num Ngum River (18°12′N, 103°01′E, ca. 200 m alt.), and from primary and secondary forests on a nearby hill at elevations between 250 and 500 m. The lower elevations (around 250 m alt.; 18°13′N, 103°01′E) were covered with mixed deciduous forests, and the upper elevations (up to 500 m; 18°14′N, 103°01′E) with dry evergreen forests.

Most observations of the specimens were made with a Nikon SMZ1000 stereoscope. Multi-focused montage images were generated using a Helicon Focus 4.75 Pro from a series of source images obtained with a Nikon EOS Kiss x4 digital camera attached to a Nikon ECLIPSE E600 microscope. Ten workers of each species were measured with a micrometer; all measurements are expressed in millimeters to the second decimal place.

Abbreviations used for the measurements and indices are as follows: TL, body length roughly measured from the anterior margin of the head to the tip of the gaster in stretched specimens; 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 the head; HW, maximum head width in full-face view; SL, scape length, excluding the basal constriction and condylar bulb; 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; CI (cephalic index), HW × 100/HL; SI (scape index), SL × 100/HW.

Abbreviations of the type depositories are as follows: AMK, Ant Museum, Faculty of Forestry, Kasetsart University, Thailand; BMNH, Natural History Museum, London, U.K.; KKIC, Kasetsart Kampaengsaen Insect Collection, Thailand; MCZC, Museum of Comparative Zoology, Cambridge, MA, U.S.A.; SKYC, SKY collection at Kagoshima University, Kagoshima, Japan; THNHM, Thailand Natural History Museum, Thailand.

Systematics

Aenictus binghami Forel (Figs. 1–2).

Aenictus binghamiri (sic) Forel, 1900: 76, type locality: Burma (MHNG, examined); Wilson, 1964: 450, Figs. 69–71; Bolton, 1995: 59; Jaitrong and Nabhitabhata, 2005: 11.

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

Measurements. Worker (n = 10): TL 4.75–4.85 mm; HL 0.85–1.05 mm; HW 0.83–0.88 mm; SL 0.85–0.95 mm; ML 1.48–1.60 mm; PL 0.33–0.35 mm; CI 83–100; SI 100–106.

Diagnosis. Head entirely smooth and shiny; antenna 10-segmented; anterior clypeal margin convex, bearing 6–7 denticles; mandible subtriangular with 7–8 denticles excluding a large apical tooth. Mesosoma entirely microreticulate and opaque; promesonotum convex dorsally; propodeal junction obtusely angulate; declivity of propodeum weakly concave, encircled with a thin rim. Petiole distinctly longer than high, in profile its dorsal outline elevated posteriorly; subpetiolar process well developed and triangular, its apex directed downward and backward. Entire body dark reddish-brown. Typhlatta spot present, located anterior to occipital corner.


Remarks. This species is similar to A. hodgsoni in having a “typhlatta spot” located anterior to the occipital corner, but is slightly larger than

Figs. 1–6. 1 & 2, Aenictus binghami worker: head in full-face view; 2, habitus in profile. 3 & 4, Aenictus hodgsoni worker: 3, head in full-face view; 4, habitus in profile. 5 & 6, Aenictus ef. dentatus worker. 5, head in full-face view; 6, habitus in profile.
the latter. The mesonotum is microreticulate in *A. binghami*, while it is entirely smooth and shiny in *A. hodgsoni*.

*Aenictus* cf. *dentatus* Forel (Figs. 5–6).

**Measurements.** Worker (n = 10): TL 4.25–4.70 mm; HL 0.88–0.98 mm; HW 0.80–0.88 mm; SL 0.90–1.03 mm; ML 1.22–1.50 mm; PL 0.33–0.35 mm; CI 87–91; SI 113–124.

**Diagnosis.** Head and mesosoma entirely densely micropunctate with strong longitudinal rugae on pronotum and mesopleuron; occipital margin bearing a distinct collar; antenna 10-segmented; scape long extending beyond posterior margin of head; anterior clypeal margin convex, lacking denticles; mandible triangular with 12–13 denticles excluding apical tooth. Promesonotum convex dorsally; propodeal junction acutely angulate; declivity of propodeum weakly concave. Petiole almost as long as petiolo, its dorsal outline elevated posteriorly; subpetiolar process weakly developed, its ventral outline feebly convex. First gastral tergite very weakly shagreened with smooth interspaces. Entire body black to dark brown. Typhlatta spot absent.


**Distribution.** Laos.

**Remarks.** The specimens examined are very similar to specimens of *A. dentatus* from Sundaland, both sharing the following characteristics: head and mesosoma entirely densely micropunctate with strong longitudinal rugae on pronotum and mesopleuron, occipital margin bearing a distinct collar, scape long extending beyond the posterior margin of the head. We are carefully comparing the present material with the syntypes of *A. dentatus* to determine its status.

Two colonies were collected in open areas along the Num Ngum River, and an additional colony was collected along a road in a bamboo plantation. Workers carried termites (WJT10-LAO12), and *Pachycondyla leeuenhoeki* workers and pupae (WJT10-LAO16).

*Aenictus* doydeei Jaitrong et Yamane, sp. nov. (Figs. 7–9).

**Types.** Holotype: worker from a plantation, 211 m alt., Sivilay Village, Naxaythong Dist., Vientiane, Laos, 10 VI 2010, WJT10-LAO13 (W. Jaitrong leg., THNHM). Paratypes: 61 workers from same colony as holotype (WJT10-LAO13 and LA10-SKY-58) (AMK, BMHN, KKIC, MCZC, SKYC, THNHM).

**Measurements.** Holotype and nine paratype workers (n = 10): 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.

**Worker description (holotype and paratypes).** Head in full-face view almost as long as broad, with its sides convex; occipital margin almost straight or feebly concave, lacking a collar. Antenna 10-segmented; scape relatively short, reaching only half length of head; antennal segment II longer and narrower than each of III-VI. Frontal carina short, not extending beyond the level of the posterior margin of the torulus; parafacial ridge absent. Clypeus short, with its anterior margin bearing 9–10 denticles. Mandible narrow, its masticatory margin with 3 acute teeth including a large apical tooth; basal margin of mandible lacking denticles. Mesosoma seen from above broader anteriorly than posteriorly; promesonotum laterally margined by ridges, in profile weakly convex dorsally and sloping gradually to metanotal groove; in profile propodeum slightly lower than promesonotum and almost flat dorsally; suture between mesopleuron and metapleuron almost absent; propodeal junction angulate, right-angled; declivity of propodeum shallowly concave, encircled by a very thin rim. Petiole almost as long as high, its dorsal outline slightly elevated posteriorly; subpetiolar process well developed, subrectangular, its ventral border almost straight and longer than the posterior border; postpetiole seen in profile subrectangular and slightly larger than petiole.

Head entirely smooth and shiny. Dorsal surface of pronotum smooth and shiny, sides of pronotum reticulate with smooth bottoms; mesothorax, metapleuron, and propodeum microreticulate. Petiole

![Figs. 7-9. Aenictus doydeei sp. nov. worker, 7, head in full-face view; 8, habitus in profile; 9, dorsal view.](image-url)
entirely microreticulate. Postpetiole microreticulate except for a small area on dorsal surface smooth and shiny.

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

Etymology. The specific name is dedicated to Dr Puvadol Doikey of Kasetsart University, who kindly helped us during our field surveys in Laos.


Distribution. Laos and Thailand.

Remarks. This species is closely related to Aenictus javanus Emery, 1896 (Figs. 13–14) and A. nishimurai Terayama et Kubota (1993) (Figs. 10–12), all of which share the following characteristics: 10-segmented antenna, short antennal scape extending only half the length of the head; anterior clypeal margin roundly convex, bearing several denticles; mandible narrow, its masticatory margin with 3 teeth including the large apical tooth; frontal carina short, not extending beyond the level of the posterior margin of the torulus; parafrontal ridge absent; mesosoma in profile with dorsal margin almost flat; promesonotum laterally margined with ridges; propodeal junction angled, encircled by a thin rim; subpetiolar process developed, subrectangular. A. doydeei, however, can be readily distinguished from A. javanus as follows: occipital margin of head in profile rounded (Fig. 7), while angled in A. javanus (Fig. 14); petiole almost as long as high, but clearly longer than high in A. javanus (Fig. 14). A. doydeei is most similar to A. nishimurai (Figs. 10–12), but is clearly larger than A. nishimurai and has the sides of the pronotum that are reticulated with smooth bottoms (smooth in A. nishimurai).

The type series from Laos and three colonies from Thailand were collected from disturbed areas in the night. Thus this species is very probably nocturnal. In a colony (TH08-SKY-16) observed in Thailand we saw workers preying on Pheidole plagia.
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References


