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A NEW SPECIES OF THE GENUS *MYRMECINA* CURTIS, 1829 (HYMENOPTERA: FORMICIDAE: MYRMICINAE) FROM SUMATRA

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Summary. *Myrmecina salmahae* sp. n. is described and illustrated based on the worker caste from the highland of Sumatra, Indonesia. This species is easily separated from the other 16 *Myrmecina* species recorded from Sumatra by a combination of the following features of the worker: relatively large species (HL 1.73–1.81 mm, HW 1.94–2.02 mm, WL 2.18–2.36 mm); posterior margin of head slightly concave; mesosoma in lateral view short and stout, as long as height, with dorsal outline convex; eumetanotal spine present and small; propodeal spines in lateral view elongate-triangular, as long as broad and pointed apically; propodeal declivity with posterodorsal angle less than 90°; subpetiolar process absent; head dorsally with coarse longitudinal rugae; mesosoma, petiole and postpetiole with coarse irregular longitudinal rugae.

Key words: ant, taxonomy, new species, description, highland, Indonesia.

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Резюме. Из горных районов Суматры (Индонезия) по рабочим особям описан новый вид *Myrmecina salmahae* **sp. n.** Новый вид отличается от остальных 16 известных с Суматры видов рода *Myrmecina* своеобразным сочетанием признаков: крупными размерами, незначительно вогнутым задним краем головной капсулы, короткой и коренистой мезосомой с выпуклой дорсальной поверхностью, наличием небольшого метанотального шипа и коротких заостренных пропедальных шипиков, отсутствием субпетиолярного отростка, а также ясно выраженными продольными морщинами на голове, мезосоме, петиоле и постпетиоле.

INTRODUCTION

The ant genus *Myrmecina* Curtis, 1829 consists of small to medium-sized species that is characterized by the presence of longitudinal ridge on ventrolateral side of head, and cylindrical petiole that lacks an anterior peduncle. Of 101 valid species, 81 species were described from Asia (Okido *et al.*, 2020), while 16 species have so far been known from the Sumatra Island of Indonesia, the sixth largest island in the world: *Myrmecina andalus* Satria et Yamane, 2019; *M. asiatica* Okido et al., 2020; *M. bandarensis* Forel, 1913; *M. butteli* Forel, 1913; *M. grandis* Okido et al., 2020; *M. insulana* Okido et al., 2020; *M. itoi* Okido et al., 2020; *M. longiseta* Okido et al., 2020; *M. macrops* Okido et al., 2020; *M. magnificens* Wong et Guénard, 2016, *M. mahuana* Okido et al., 2020; *M. nesaea* Wheeler, 1924; *M. nitidiuscula* Satria et Yamane, 2019; *M. padangensis* Okido et al., 2020; *M. parallela* Okido et al., 2020; *M. undulata* Emery, 1900.

In our course of inventory and taxonomic studies of ants in Sumatra, we have described new species and recorded species new to Sumatra (Satria *et al.*, 2015; Satria *et al.*, 2017; Satria & Yamane, 2019; Satria & Herwina, 2020; Satria & Jannatan, 2021; Musfira *et al.*, 2022; Satria *et al.*, 2022), and we herein described a new species of the genus *Myrmecina*.

MATERIAL AND METHODS

Studied specimens are deposited in the Bogor Zoological Museum, Bogor, Indonesia (MZB) and the collection managed by Rijal Satria, Universitas Negeri Padang, Indonesia (RSC).

Multi-focused montage images were produced using Helicon Focus Pro. (Helicon Soft Ltd., <http://www.heliconsoft.com/>) from a series of source images taken by a Canon EOS KissX5 digital camera attached to a Nikon SMZ1270 stereomicroscope. Artifacts/ghosts and unnecessary parts (unfocused appendages, insect pin, etc.) surrounding or covering target objects were erased and cleaned up using the retouching function of Helicon Focus Pro, and the color balance, contrast and sharpness were adjusted using Adobe Photoshop CS6.

The following parts of the bodies were measured using ImageJ 1.49m (National Institute of mental Health, USA, available at <http://imagej.nih.gov/ij/>) based on the photographs taken using a Canon EOS KissX5 digital camera attached to the Nikon SMZ1270 stereomicroscope under suitable magnifications. Measurements and morphological terminology follow Terayama (1996), Shattuck (2009), Wong and Guenard (2016), Satria & Yamane (2019) and Okido et al. (2020).

Abbreviations of measurements and indices are as follows: HL – maximum length of head in full-face view, measured from the midpoint of a line drawn across the anteriormost points of clypeus to the midpoint of a line drawn across posteriormost points of head; HW – maximum width of head in full-face including eyes; MDL – maximum length of mandible measured from mandibular insertion to apical-most point of mandible; EL – diameter of major axis of compound eye measured in lateral view; SL – maximum length of antennal scape excluding the basal condylar bulb; WL – maximum diagonal distance of mesosoma (Weber's length) in lateral view, measured from the anteriormost point of pronotal collar to posteriormost point of propodeal lobe; PNW – maximum width of pronotum measured in dorsal view; PSL – maximum length of propodeal spines measured in lateral view from the tip of the propodeal spine to the closer margin of the propodeal spiracle; PTH – maximum height of petiole measured from ventralmost point of subpetiolar process to an imaginary line tangential to the apex as measured in lateral view; PTL – maximum length of petiole measured from anterodorsalmost point to the posterodorsalmost point of petiolar base in lateral view; CI = HW/HLx100; MDI = MDL/HLx100; SI = SL/HWx100; PTHI = PTH/PTLx100.

DESCRIPTION OF A NEW SPECIES

Myrmecina salmahae Satria et Eguchi, sp. n.

<https://zoobank.org/NomenclaturalActs/46504DB7-3EA8-4780-9598-AE20B48F217E>

Figs 1, 2

TYPE MATERIAL. Holotype: worker (individual code: SEMUT22iv2022B), **Indonesia**: West Sumatra, 50 Kota District, Situjuh Limo Nagari, Situjuh Gadang, Sago Mountain, 3°49'521" N, 97°31'198" E, ca. 2000 m alt., 13.I 2022, Nur Aqsha leg. (MZB). Paratypes: workers (n=6, individual code: SEMUT13i2022, SEMUT22iv2022A, SEMUT22iv2022C, SEMUT22iv2022D, SEMUT22iv2022E, SEMUT22iv2022F), same data as holotype (RSC).

WORKER MEASUREMENTS AND INDICES. Holotype (n=1): HL 1.73 mm, HW 1.94 mm, MDL 0.90 mm, EL 0.27 mm, SL 1.54 mm, WL 2.25 mm, PNW 1.35 mm, PSL 0.36 mm, PTH 0.54 mm, PTL 0.56 mm, CI 111, MDI 51, SI 79, PTHI 96.

Paratypes (n=6): HL 1.73–1.81 mm, HW 1.94–2.02 mm, MDL 0.89–0.97 mm, EL 0.27–0.28 mm, SL 1.54–1.62 mm, WL 2.18–2.36 mm, PNW 1.35–1.38 mm, PSL 0.34–0.36 mm, PTH 0.53–0.56 mm, PTL 0.56–0.58 mm, CI 111–115, MDI 50–53, SI 79–81, PTHI 94–96.

WORKER DIAGNOSIS. *Myrmecina salmahae* sp. n. is easily separated from the other 16 *Myrmecina* species recorded from Sumatra by a combination of the following characters of the worker: relatively large species (HL 1.73–1.81 mm, HW 1.94–2.02 mm, WL 2.18–2.36 mm); posterior margin of head slightly concave; mesosoma in lateral view short and stout, as long as height, with dorsal outline convex; eumetanotal spine present and small; propodeal spines in lateral view elongate-triangular, as long as broad and pointed apically; propodeal declivity with posterodorsal angle less than 90°; subpetiolar process absent; head dorsally with coarse longitudinal rugae; mesosoma, petiole and postpetiole with coarse irregular longitudinal rugae.



Fig. 1. *Myrmecina salmahae* sp. n., body in lateral view (holotype, worker, individual code: SEMUT14iv2022B).

WORKER DESCRIPTION. Relatively large (HL 1.73–1.81 mm, HW 1.94–2.02 mm, WL 2.18–2.36 mm). Head in full-face view subrectangular, slightly shorter than wide, with posterior margin slightly concave (Fig. 2A); lateral sides of head shallowly convex; occipital corners rounded, not projected posteriorly. Clypeus consisting of flat dorsal disc and steep anterior face, laterally serrate; its anterior margin almost straight, with a small median tooth and a pair of lateral denticles. Labrum with pair of apical processes. Compound eye relatively small (EL 2.18–2.36 mm), with 34–45 ommatidia. Mandible triangular; masticatory margin with large apical tooth, followed by small preapical tooth, large third tooth, 5 blunt denticles, and a blunt basal tooth. Antenna 12-segmented, with 3-segmented club; apical segment slightly longer than 10th and 11th segments combined; scape relatively long,

distinctly surpassing posterolateral corner of head when laid backward. Mesosoma in lateral view short and stout, as long as height, with dorsal outline convex; anterior ventrolateral portion of pronotum forming distinct process; mesonotum completely fused with pronotum; lower portion of mesopleuron broadly concave anteriorly; mesopleuron not differentiated from metapleuron; eumetanotal spine present but small; propodeal spines in lateral view elongate-triangular, as long as broad and pointed apically; propodeal declivity slightly concave, with lateral carinae not developed, with posterodorsal angle less than 90°; posteriormost portion of propodeum with very high lateral walls (propodeal lobes) (Fig. 2B). Petiole in dorsal view as broad as long, rectangular, in lateral view with anterior slope almost straight, dorsal outline almost straight to weakly concave, and ventral outline straight without any denticle. Postpetiole in dorsal view much broader than long, broader than petiole; sternopostpetiolar process absent. Gaster in dorsal view slightly elongate circular; anterior margin of first gastral tergite slightly concave, with anterolateral corner very weakly angled.

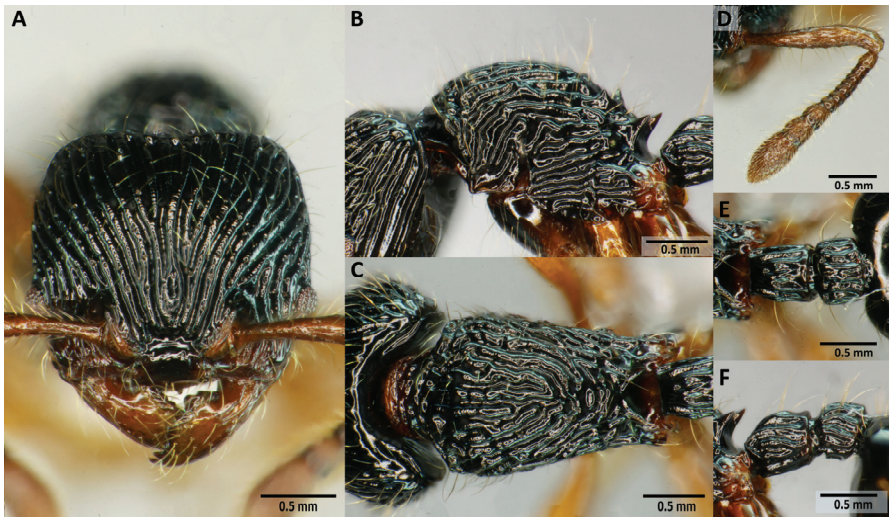


Fig. 2. *Myrmecina salmahae* sp. n. (holotype, worker): A – head in full-face view; B – mesosoma in lateral view; C – mesosoma in dorsal view; D – antenna; E – petiole and postpetiole in dorsal view; F – petiole and postpetiole in lateral view.

Head dorsally with coarse longitudinal rugae; those on lateral part of head diverging posteriad; flat dorsal disc of clypeus smooth and shiny, with irregular punctures around anterolateral corner; ventrolateral area (temple + gena) of head smooth and shiny. Mesosoma, petiole and postpetiole with coarse irregular longitudinal rugae; declivity and posteriormost part of propodeum smooth and shiny. Gaster smooth and shiny.

Body covered with abundant long erect setae; clypeus with several long setae, and a pair of long setae arising from the median tooth of its anterior margin; scape with many suberect to erect hairs that are longer than scape width; all legs with numerous suberect to erect hairs.

For color pattern see Figs 1, 2; body black, with appendages dark reddish brown.

DISTRIBUTION. So far known only from the highland of Sumatra.

TAXONOMIC REMARKS. *Myrmecina salmahae* sp. n. can not be assigned to any species group which is proposed by Okido *et al.* (2020). New species is keyed out as *M. aspera* at the couplet 19 of the key provided by Okido *et al.* (2020), but is distinguished from the latter by a combination of the following characters: masticatory margin of mandible bent at midlength (*vs.* straight in the latter); eye large with EL 0.27–0.28 mm and 34–45 ommatidia (*vs.* small with EL 0.14 mm and 7 ommatidia in the latter); mesosoma in lateral view short and stout, as long as height (*vs.* longer than height in the latter); mesosoma with coarse irregular longitudinal rugae (*vs.* coarse longitudinal rugae in the latter). It is also morphologically similar to *M. boltoni*, and *M. padangensis*, on the basis of the following characteristics: head and mesosoma with coarse longitudinal rugae; antennal scape relatively short; eumetanotal spine present; propodeal spine relatively short; petiole longer than postpetiole in lateral view; petiole without subpetiolar process. However, it is distinguishable from the latter two by the following characteristics: posterior margin of head slightly concave (*vs.* slightly concave in *M. boltoni*; almost straight in *M. padangensis*); mesosoma in lateral view short and stout, as long as height (*vs.* longer than height in the latter two); eye large with EL 0.27–0.28 mm and 34–45 ommatidia (*vs.* 0.11–0.16 mm and 5–10 ommatidia in *M. boltoni*; 0.14 mm and 8 ommatidia in *M. padangensis*); propodeal spine relatively small, as long as broad at base and pointing posteriorly (*vs.* longer than broad in the latter two); mesosoma in dorsal view with coarse and irregular rugae (*vs.* longitudinal rugae in *M. boltoni*; irregular rugae in *M. padangensis*); forecoxa smooth and shiny (*vs.* sculptured in *M. boltoni*; smooth and shiny in *M. padangensis*).

BIONOMICS. New species was collected from leaf litter in the primary highland forests. Other information about the biology of this species is absent.

ETYMOLOGY. The species is named in honor of Dr. Siti Salmah, the emeritus professor of Andalas University, an authority on entomology and taxonomy in Indonesia.

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