A New Species of the Ant Genus Crematogaster from Vietnam (Hymenoptera: Formicidae)

HOSOISHI, Shingo
Institute of Tropical Agriculture, Kyushu University

https://doi.org/10.5109/6610222

出版情報：ESAKIA. 55, pp.60-63, 2022-12-20. Entomological Laboratory, Faculty of Agriculture, Kyushu University
バージョン：
権利関係：

ESAKIA, (55): 60–63. December 20, 2022

A New Species of the Ant Genus *Crematogaster* from Vietnam (Hymenoptera: Formicidae)

Shingo HOSOISHI

Institute of Tropical Agriculture, Kyushu University, Motooka 744, Nishi-ku, Fukuoka, 8190395 Japan.
E-mail: hosoishi@agr.kyushu-u.ac.jp

Abstract. *Crematogaster ogatai* **sp. nov.**, is described from Vietnam based on the worker caste. The new species is distinguished from the Asian members of the genus by the three-segmented antennal club, deep metanotal groove, short and stout propodeal spines and globular postpetiole. The type series of the new species was collected from Tam Dao National Park, Northern Vietnam.

Key words: Myrmicinae, Tam Dao National Park, taxonomy.

Introduction

The ant genus *Crematogaster* is a hyperdiverse group containing more than 500 species and distributed worldwide (Bolton 2022). The genus has been classified into the two subgenera *Crematogaster* and *Orthocrema* (Blaimer 2012). The subgenus *Crematogaster* is a large group and contains more than 350 species. In Asia, the taxonomy has been improved in recent years (Hosoishi 2015, Hosoishi & Ogata 2009, 2012). According to Eguchi *et al*. (2011), thirteen *Crematogaster* species have been recognized from Vietnam, but most species are not identified to the species level because of possibly presence of several undescribed species.

In the course of a recent examination of *Crematogaster* specimens collected from Vietnam, I found one distinct species that appear to be new to science. The author (SH) has not ever seen any morphologically related species in a museum collection before. While the new species clearly belong to the subgenus *Crematogaster sensu stricto* (Blaimer 2012), assignment to any of the species groups was not possible. The species is considered to be distinct in having the deep metanotal groove, short and stout propodeal spines and globular postpetiole. In this paper, I here describe the species as new species based on the worker caste.

Materials and methods

Sources of material. Codes for public institutions mainly follow those in Brandão (2000). Specimens were examined and/or deposited in the collections listed below.

BMNH The Natural History Museum, London, U. K.
IEBR Institute of Ecology and Biological Resources, Hanoi, Vietnam.
KUEC Institute of Tropical Agriculture, Kyushu University, Fukuoka, Japan.
NHMW Naturhistorisches Museum, Wien, Austria.
SKYC Seiki Yamane Collections, Kagoshima, Japan.
THNHM Thailand Natural History Museum, Technopolis, Khlong Luang, Pathum Thani, Thailand.

Observations. Most observations were made on a Leica M205C stereomicroscope. Images were taken using a Canon EOS 50D with a Canon MP-E 65 mm 1-5 × Macro lens, then processed using Combine ZM (Hadley 2010).

Measurements and indices. Measurements were made under a Leica M205C stereomicroscope using micrometers. All measurements are expressed in millimeters, recorded to the second decimal place. The measurements for petiole and postpetiole follow Longino (2003).

Head Width (HW): Maximum width of head in full-face view, excluding the eyes.

Received 31 March 2022, accepted 31 August 2022

Head Length (HL): Perpendicular distance from vertex margin to line tangent to anteriormost projections of clypeus in full-face view.
Cephalic Index (CI): HW/HL × 100.
Scape Length (SL): Length of the first antennal segment, excluding the neck and basal condyle.
Scape Index (SI): SL/HW × 100.
Eye Length (EL): Maximum length of the compound eye.
Pronotal Width (PW): Maximum width of the pronotum in dorsal view.
Weber's Length of the mesosoma (WL): Diagonal length, measured in lateral view from the anterior margin of the pronotum (excluding the collar) to the posterior extremity of the propodeal lobe.
Propodeal Spine Length (PSL): measured from tip of propodeal spine to closest point on outer rim of propodeal spiracle.
Petiole Length (PtL): Length of the petiole in lateral view (see Longino 2003, fig. 2).
Petiole Width (PtW): Maximum width of petiole in dorsal view.
Petiole Height (PtH): Height of the petiole in lateral view (see Longino 2003, fig. 2).
Postpetiole Length (PpL): Length of the postpetiole in lateral view (see Longino 2003, fig. 2).
Postpetiole Width (PpW): Maximum width of postpetiole in dorsal view, excluding the helcium.
Petiole Height Index (PtHI): PtH/PtL x 100.
Petiole Width Index (PtWI): PtW/PtL x 100.
Postpetiole Width Index (PpWI): PpW/PpL x 100.
Waist Index (WI): PpW/PtW x 100.

Taxonomy

Crematogaster ogatai sp. nov.

(Figs 1–3)

ZooBank taxon LSID:
zoobank.org:act:7162D3A6-9F18-4867-A3CC-7CC0046FC5A5

Type series. HOLOTYPE: Worker from Vietnam: Tam Dao (1,000–1,240 m alt.), Vinh Phuc Prov., 8.viii.1998 (Sk. Yamane) (IEBR, KUECANT038). **Twelve paratype workers:** same data as holotype, (BMNH (two paratypes, KUECANT040, KUECANT041), IEBR (one paratype, KUECANT039), KUEC (two paratypes, KUECANT042, KUECANT043), NHMW (two paratypes, KUECANT044, KUECANT045), SKYC (three paratypes, KUECANT046, KUECANT047, KUECANT048), THNHM (two paratypes, KUECANT049, KUECANT050)).

Measurements and indices. Holotype: HW 0.88; HL 0.84; CI 105; SL 0.62; SI 71; EL 0.16; PW 0.51; WL 0.91; PSL 0.07; PtL 0.26; PtW 0.32; PtH 0.18; PpL 0.13; PpW 0.28; PtHI 67; PtWI 122; PpWI 217; WI 86. Paratype workers (n = 5): HW 0.81–0.91; HL 0.80–0.90; CI 101–108; SL 0.62–0.63; SI 68–77; EL 0.15–0.17; PW 0.49–0.53; WL 0.83–0.97; PSL 0.06–0.08; PtL 0.25–0.29; PtW 0.31–0.32; PtH 0.15–0.17; PpL 0.13–0.16; PpW 0.25–0.28; PtHI 57–67; PtWI 108–130; PpWI 163–221; WI 78–89.

Description of worker. Head slightly broader than long in full-face view (CI 101–108); posterior margin almost straight, angulate posterior corner and convex sides. Frontal carina extending to bottom of eyes. Occipital carina weakly developed, but undeveloped at dorsal portion. Mandible with four teeth; apical and subapical teeth large. Anterior margin of clypeus weakly convex in median portion; anterolateral margin of clypeus protruded anteriad; posterior margin of clypeus rounded between frontal lobes. Compound eyes slightly projecting beyond lateral margins of head in full-face view. Antenna with 11-segmented; antennal club 3-segmented, but appears 2-segmented in one specimen (KUECANT041). Scape reaching posterior corner of head.

Pronotum and mesonotum almost fused without defined suture in dorsal view. In lateral view, promesonotum forming dorsal convex outline. Mesothoracic spiracle circular; its diameter as large as base of propodeal spines. Metanotal groove straight in dorsal view, forming a deep V-shaped concavity between mesonotum and propodeum in lateral view. Metapleural gland bulla developed long, extending to anterodorsal portion of metapleuron. Metapleural gland opening slit-shaped. Propodeal spiracle dorsoventrally oval, with its horizontal diameter 2.0 times larger than vertical diameter, located on posterolateral corner of propodeum in lateral view, close to metapleural gland bulla. Propodeal spine short and stout with thick base, directed dorsolaterally in dorsal view (PSL 0.06–0.08).

Petiole broader anteriorly, but broadest at mid-length, wider than long in dorsal view

FIGURES 1–3. *Crematogaster ogatai* **sp. nov.**, holotype worker (IEBR). 1, body in profile view. 2, dorsal view of mesosoma, petiole and postpetiole. 3, full-face view of head.

(PtWI 108–130); spiracle situated at midportion between dorsal and ventral margin of petiole in lateral view, directed laterally. Subpetiolar process short and acute. Postpetiole globular, not bilobed in dorsal view; spiracle situated anteriorly on lateral surface. Petiole wider than postpetiole in dorsal view (WI 78–89).

Dorsal surface of head longitudinally rugose on anterior half, but shagreened weakly shagreened on frons and posterior half; longitudinal rugulae surrounding antennal sockets and gena. Clypeus with weak longitudinal rugulae. Promesonotum shagreened. Lateral surface of pronotum shiny but weakly shagreened. Mesopleuron weakly sculptured with feeble rugulae. Propodeal dorsum and declivity smooth and shiny. Dorsal surface of petiole smooth and shiny. Lateral surface of petiole shiny but weakly shagreened. Dorsal and lateral surfaces of postpetiole shiny but weakly shagreened.

Scape with abundant suberect to decumbent setae. Dorsal face of head with long erect setae and short decumbent setae. Clypeus with suberect setae. Anterior clypeal margin with one median setae and one pair of longer setae, mixed with shorter setae laterally. Dorsum of promesonotum with some pairs of long erect setae and short decumbent setae anteriorly, one pair of lone erect setae posteriorly. Dorsum of propodeum with decumbent setae. Petiole with one pair of long suberect setae posteriorly. Postpetiole with one pair of long suberect setae posteriorly. Fourth abdominal tergite with long erect setae and decumbent to appressed setae. Body color reddish brown.

Remarks. This species is similar to *C. treubi* Emery, 1896 in having the weakly developed occipital carinae, but can be distinguished by the deep metanotal groove, long metanotal gland bulla and globular postpetiole.

Distribution. This species has so far been known only from the type locality. The type series was collected from Tam Dao National Park (21° 21'–42' N, 105° 23'–44' E; 1,000–1,240 m altitude) of northern Vietnam.

Etymology. The specific name is dedicated to Dr. Kazuo Ogata, who worked on the systematics of Asian ants.

Acknowledgments

I would like to thank Seiki Yamane (SKY) for providing the type series. I am grateful to Bui Tuan Viet (former staff of IEBR, Vietnam) who helped SKY to collect the type series in Vietnam.

I would like to thank ANeT members for encouragement. This work was supported in part by JSPS KAKENHI (Grand-in-Aid for Scientific Research (C)) Grant Number JP21K05616 and JSPS KAKENHI (Grand-in-Aid for Scientific Research (C)) Grant Number JP19K06824.

References

Blaimer BB, 2012. A subgeneric revision of *Crematogaster* and discussion of regional species-groups (Hymenoptera: Formicidae). *Zootaxa*, **3482**: 47–67.

Bolton B, 2022. AntCat. An Online Catalog of the Ants of the World. https://antcat.org [Accessed 31 March 2022].

Brandão CRF, 2000. Major regional and type collections of ants (Formicidae) of the world and sources for the identification of ant species. In: Agosti D, Majer JD, Alonso LE & Schultz TR (eds) *Ants: Standard Methods for Measuring and Monitoring Biodiversity*. Smithsonian Institution Press, Washington & London, pp. 172–185.

Eguchi K, Viet BT & Yamane Sk, 2011. Generic synopsis of the Formicidae of Vietnam (Insecta: Hymenoptera), Part I - Myrmicinae and Pseudomyrmecinae. *Zootaxa*, **2878**: 1–61.

Hadley A, 2010. Combine ZM (image stacking software). http://www.hadleyweb.pwp.blueyonder.co.uk/CZP/News.htm

Hosoishi S, 2015. Revision of the *Crematogaster ranavalonae*-group in Asia, with description of two new species (Hymenoptera, Formicidae). *Journal of Hymenoptera Research*, **42**: 63–92.

Hosoishi S & Ogata K, 2009. A taxonomic revision of the Asian endemic subgenus *Physocrema* of the genus *Crematogaster* (Hymenoptera: Formicidae). *Zootaxa*, **2062**: 15–36.

Hosoishi S & Ogata K, 2012. Revision of the *Crematogaster* brevis complex in Asia (Hymenoptera: Formicidae). *Zootaxa*, **3349**: 18–30.

Longino JT, 2003. The *Crematogaster* (Hymenoptera, Formicidae, Myrmicinae) of Costa Rica. *Zootaxa*, **151**: 1–150.