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A New Species from *Crematogaster* the Subgenus *Orthocrema* in Asia (Hymenoptera, Formicidae)

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Abstract *Crematogaster* (*Orthocrema*) *reticulata* sp. nov. is described from the Malay Peninsula and Borneo. This species is easily distinguished from the other Asian *Orthocrema* ants in having the reticulated sculpture with the head, mesosoma, petiole and postpetiole.

Introduction

The genus *Crematogaster* is one of the most species-rich ant genera and abundant in the tropics (HÖLLDOBLER and WILSON, 1990). The genus includes more than 900 available species-level names and is divided into 16 subgenera (BOLTON, 2006). The subgenus *Orthocrema* consists of more than 150 species and subspecies worldwide, 23 species and 7 subspecies in Asia. *Orthocrema* ants are generally considered as ground-dwellers. The subgenus is easily distinguished by the characters of 2-jointed antennal club, petiole with parallel sides and postpetiole without median sulcus (SANTSCHI, 1918; EMERY, 1922). In his review of Asian ants, BINGHAM (1903) listed up only one *Orthocrema* species. A key to several *Orthocrema* species from the Indo-Australian region is given by MENOZZI (1935), but it is out of date because of presence of several undescribed species.

In the course of my recent examination on *Crematogaster* specimens collected from Southeast Asia, I found a unique *Orthocrema* species which is apparently new to science and herein described as a new species.

Methods

Most observations were made on a Nikon SZX12 stereomicroscope. Images were processed using Helicon Focus 4.47.1 Pro. Measurements were made under a Nikon SMZ-U microscope using micrometers. All measurements are expressed in millimeters, representing to the second decimal place. Measurements were based on the three workers, small, medium and large ones.

The holotype is deposited in the collection of the Kyushu University, Japan (KUM). The paratypes will be kept temporarily in the same collection.

Taxonomy

Crematogaster (*Orthocrema*) *reticulata* sp. nov.

(Figs. 1–3)



Figs. 1–3. *Crematogaster (Orthocrema) reticulata* sp. nov. — 1, Lateral view; 2, full face view; 3, dorsal view of mesosoma. Scale bars are all 0.5mm.

Type material. Holotype: Worker, Type locality: Ulu Gombak (University Malaya Field Studies Centre), Selangor, MALAYSIA, 27. xi. 2005 (SH05-Mal-01) (S. HOSOISHI) (KUM). Paratypes: 10 workers, same data as holotype.

Other material examined. 1 worker, BRUNEI, Tasek Merimbun, 12. ii. 1999. (Eg99-BOR-032) (K. EGUCHI); 2 workers, MALAYSIA, Lambir Hills N. P. Miri, Sarawak, 20. x. 2005. (CH000512) (C. HANDA).

Etymology. The specific epithet *reticulata* refers to the reticulated sculpture on this species, which form the reticulation on the head, mesosoma, petiole and postpetiole.

Measurements. HW (head width) 0.43–0.46 mm; HL (head length) 0.42–0.46 mm; CI (cephalic index = $HW/HL \times 100$) 97–103; SL (scape length) 0.36–0.42 mm; SI (scape index = $SL/HW \times 100$) 84–91; EL (eye length) 0.10–0.11 mm; PW (pronotal width) 0.27–0.30 mm; WL (WEBER's length of the mesosoma) 0.51–0.57 mm; PSL (propodeal spine length) 0.11–0.14 mm; PtL (petiole length) 0.15–0.16 mm; PtW (petiole width) 0.12–0.14 mm; PtH (petiole height) 0.11–0.12 mm; PpL (postpetiole length) 0.11–0.12 mm; PpW (postpetiole width) 0.14–0.15 mm; PtHI (petiole height index = $PtH/PtL \times 100$) 67–75; PtWI (petiole width index = $PtW/PtL \times 100$) 75–83; PpWI (postpetiole width index = $PpW/PpL \times 100$) 122–125; WI (waist Index = $PpW/PtW \times 100$) 110–111 (Three workers measured).

Diagnosis of worker. Workers monomorphic in size.

Head subquadrate, slightly broader than long, with weakly concave posterior margin, rounded posterior corners and convex sides. Mandibles smooth and shining, with four teeth, apical and subapical teeth large, basal two teeth lower. Anterior margin of clypeus convex; posterior margin of clypeus broadly rounded between frontal lobes. Anterolateral margins of clypeus not protruded anteriorly; forming convex anterior margin. Frontal triangle undeveloped. Frontal carinae developed, just reaching the line between the bottom of eyes. Occipital carinae clear. Antennae 11 segmented; scape exceeding posterior corner of head, with appressed setae; antennal club 2-jointed. Compound eyes large and distinctly projecting beyond lateral margins of head in full face view.

Pronotum and mesonotum completely fused. Promesonotum steeply raised in profile. Anterior margin of pronotal collar not concave in dorsal view. Mesonotal dorsum with two distinct rugulae laterally. The ridge separating lateral portion from ventral portion in mesopleuron distinct. Metanotal groove straight in dorsal view. Metapleural gland opening slit-shaped situated close to hind coxal base. Propodeal spines developed and directed subparallel posteriorly in dorsal view.

Petiole cylindrical with node-like process posteriorly; subpetiolar process weakly developed; spiracle situated anteriorly and middle part between dorsal and ventral margin of petiole in lateral view; in dorsal view, the shape subrectangular with parallel sides, longer than broad. Postpetiole with more or less distinct node, anterior face more gently curved than posterior face; spiracle distinct situating anteriorly on the lateral surface; in dorsal view, the shape wider than long, weakly bilobed but without longitudinal median sulcus. Subpostpetiolar process developed.

Clypeus striated with longitudinal rugulae. The longitudinal rugulae extending to the frontal region between frontal carinae. Integument essentially sculptured reticulately. Propleuron and mesopleuron sculptured reticulately. The rugulae on the higher portion of the mesopleuron extending to propodeal spines, forming lateral margins of propodeal spines. The rugulae on the mesonotum extending posteriorly to propodeal spines.

Standing pilosity present. Dorsal face of head, clypeus and mesosoma with erect and stout setae. Posterolateral tubercles of the petiole with two setae. Postpetiole with 3 pairs

of erect setae, dorsally, laterally and posteriorly respectively. Fourth abdominal tergite with erect and stout setae sparsely.

Body color yellow-brown.

Distribution. Malaysia (Peninsula and Borneo).

Remarks. This species is very unique among the Asian *Orthocrema* ants in having the reticulated sculpture with the head, mesosoma, petiole and postpetiole. Although *C. (O.) biroi* MAYR also has the reticulated sculpture on the integument, its surface of the head is smooth and shining.

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References

- BINGHAM, C. T., 1903. The fauna of British India, including Ceylon and Burma. Hymenoptera 2. Ants and Cuckoo-Wasps: 506pp. London.
- BOLTON, B., G. ALPERT, P. S. WARD, and NASKRECKI, P., 2006. BOLTON's catalogue of ants of the world. Harvard University Press, Cambridge, Massachusetts, CD-ROM.
- EMERY, C., 1922. Hymenoptera, Fam. Formicidae, subfam. Myrmicinae. In WYTSMAN, P., *Genera Insectorum*. Fasc. 174B: 95–206. Bruxelles.
- HÖLDOBLER, B. and E. O. WILSON, 1990. *The Ants*. Harvard University Press, Cambridge, Massachusetts, xii + 732pp.
- MENOZZI, C., 1935. Formiche indo-australiene del genere *Crematogaster* LUND raccolte da W. KARAWAIEW. *Konowia*, 14: 103–116.
- SANTSCHI, F., 1918. Sous-genres et synonymies de *Crematogaster*. *Bulletin de la Société Entomologique de France*, 1918: 182–185.

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