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

Shingo HOSOISHI
Institute of Tropical Agriculture, Kyushu University, Fukuoka, 812–8581 Japan

**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 (HÖLLODBLER 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 A key to several *Orthocrema* species from the Indo-Australian region is given by MENOZZI (1935), but it is out of date because of presence of several undescribed species.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.


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 x 100) 97–103; SL (scape length) 0.36–0.42 mm; SI (scape index = SL/HW x 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; PHI (petiole height index = PtH/PtL x 100) 67–75; PtWI (petiole width index = PtW/PtL x 100) 75–83; PpWI (postpetiole width index = PpW/PpL x 100) 122–125; WI (waist Index = PpW/PtW x 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.


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. Propuleuron and mesopuleuron sculptured reticulately. The rugulae on the higher portion of the mesopuleuron 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**


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