



Formosan Entomologist

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Polyrhachis (Cyrtomyrma) debilis Emery, 1887 (Hymenoptera: Formicidae), a New Record of Ant Species in Taiwan 【Scientific note】

臺灣新紀錄種德布利斯棘山蟻記述【科學短訊】

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Received: 2015/11/18 Accepted: 2015/12/19 Available online: 2016/01/01

Abstract

Polyrhachis (Cyrtomyrma) debilis Emery, 1887 is newly reported from Taiwan. This article presents a detailed redescription of the worker of *P. (C.) debilis*, and the diagnostic characters for separating them from the closely related species, *P. (C.) rastellata* (Latreille, 1802).

摘要

德布利斯棘山蟻 (*Polyrhachis (Cyrtomyrma) debilis* Emery, 1887) 首次發現於臺灣。本文提供德布利斯棘山蟻之工蟻形態描述，以及其與臺灣產另一近似種 *P.(C.) rastellata* (Latreille, 1802) 的差異性診斷。

Key words: New record, Formicidae, Taiwan

關鍵詞: 新紀錄、蟻科、臺灣

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Polyrhachis (Cyrtomyrma) debilis Emery, 1887 (Hymenoptera: Formicidae), a New Record of Ant Species in Taiwan

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ABSTRACT

Polyrhachis (Cyrtomyrma) debilis Emery, 1887 is newly reported from Taiwan. This article presents a detailed redescription of the worker of *P. (C.) debilis*, and the diagnostic characters for separating them from the closely-related species, *P. (C.) rastellata* (Latreille, 1802).

Key words: New record, Formicidae, Taiwan

Ants are one of the most successful eusocial insects in the world and they are distributed in all continents except Antarctica. To date, 264 species have been recorded in Taiwan (Terayama, 2009), with several undescribed species or new records waiting to be discovered. Thus, continuous taxonomic work is needed. Recently, during the first author's study of the collection of formicidae deposited in National Taiwan University, a specimen with a unique color and huge spiny petioles was found. This specimen obviously belonged to the genus *Polyrhachis* Smith, 1857 and the subgenus *Cyrtomyrma* Forel, 1915. After careful comparison with photos of type specimens on AntWeb and with the determined specimens deposited in Sun Yat-Sen University (Guangzhou, China), it was confirmed to be *Polyrhachis (Cyrtomyrma) debilis* (Emery, 1887) and is a new record

in Taiwan.

The materials examined in the present study are deposited in the following institutions: NTU (Department of Entomology, National Taiwan University, Taipei, Taiwan) and SYSU (Biological Museum, Sun Yat-Sen University, Guangzhou, China). The terminology used in the descriptions and the methods follow those of Kohout (2006). Standard measurements (in mm) and indices are as defined in Bolton (1973): TL = Total length, HL = Head length, HW = Head width, CI = Cephalic index, SL = Scape index, PW = Pronotal width, MTL = Metathoracic tibial length. The photos were taken using a stereomicroscope (Leica MZ 16, Wetzlar, Germany) with a digital camera (Leica DFC490, Wetzlar, Germany). Images were post-processed using the software Helicon Focus 6.3.5 (Helicon Soft Ltd.).

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Polyrhachis (Cyrtomyrma) debilis
Emery, 1887 (New to Taiwan)
(Figs. 1-5)

Polyrhachis laevior var. *debilis* Emery, 1887: 240.

Polyrhachis (Cyrtomyrma) rastellata laevior var. *debilis*: Emery, 1925: 208. (Variant spelling).

Polyrhachis (Cyrtomyrma) debilis: Donisthorpe, 1938: 265.

Material examined: Taiwan: 1 ♀, TAIWAN. Huisun, 4-V-1990, W. Tian (NTU); Comparative specimen: 1 ♀, CHINA. Guangdong: Fengkai, 1-IV-1987, S. Li (SYSU). 1 ♀, CHINA. Guangdong: Xinyi, 3-VII-1988, Y. D. Knot (SYSU). 3 ♀, CHINA. Guangdong: Cloud River Ecological Park, 4-V-2005, Z. Shuang (SYSU). 1 ♀, CHINA. Guangdong: Lotus Hill, 18-IX-2001, L. G. Lin, X. W. Choi, F. W. Li (SYSU). 1 ♀, CHINA. Guangdong, 8-VII-1946, L. G. Lin (SYSU). 1 ♀, PAPUA NEW GUINEA. Fly River, 31-IIX-1876, L.M.D'Albertis (Antweb) (Syntype). 1 ♀, PAPUA NEW GUINEA. Mafulu, 1-IIX-1933, L. E. Cheesman (Antweb). All specimens workers.

Redescription (based on worker)

Measurements: TL: 7.5; HL: 1.5; HW: 1.5; CI: 1; SL: 1.8; SI: 1.2; PW: 1.2; MTL: 2.1.

Body color light black; the anterior of trochanter, femur, and tibia light to medium reddish-brown; coxa, trochanter and tarsi distinctly darker. Fronto-clypeal suture has a furrow, narrowly rounding. Eyes with weakly convex anterior, and flat posterior face; Ocellus lacking; Shoulders of pronotum rounded. Promesonotal suture obvious and smooth, metanotal groove absent. Propodeum with a pair of small denticles, propodeal declivity descending in a circular curve (Fig. 4); petiole with weakly convex anterior, and flat posterior face; dorsum armed with

four acute spines, dorsal pairs slightly longer and slenderer than lateral pairs, radian between dorsal spines smaller than between dorsal and lateral spines (Fig. 5). Subpetiolar process angulate anteriorly, widely rounded posteriorly. Anterior face of first gastral segment weakly concave at base.

Mandibles fine with numerous pits and hairs. Head, mesosoma and gaster rough with sides of pronotum and meso- and metapleurae reticulate to reticulate-rugose.

Mandibles with many curved, short setae, direction of setae similar with that of the teeth.

Short setae distributed evenly on margin of clypeus. Single pair of relatively long, anteriorly directed setae in the middle, anterior clypeal margin. Several pairs of relatively short hairs arising near anterior and basal clypeal margins, along frontal carina and on vertex. Coxae, trochanter and the end of the femora have some hairs. Posterior of gaster with some hairs at the apical segments. Whole body with numerous shallow punctures.

Diagnosis: Up to present, there are only 2 species of *Polyrhachis (Cyrtomyrma)* distributed in Taiwan. They are *P. (C.) rastellata* (Latreille, 1802) and *P. (C.) debilis* (Emery, 1887). Although the two species are very similar, *P. debilis* can be distinguished from *P. rastellata* by propodeum armed with a pair of small denticles and the unique clypeus structure.

Distribution: China (Guangxi, Guangdong, Hainan, Zhejiang), New Guinea and Australia. New to Taiwan.

Acknowledgments

We would like to express our gratitude to Benoit Guénard (Hong Kong University), Terayama Mamoru (University of Tokyo) and Chin-Cheng Yang (National Taiwan University) for their guidance on the taxonomy of ants. Our thanks also to Jhih-Rong Liao (National Taiwan University)

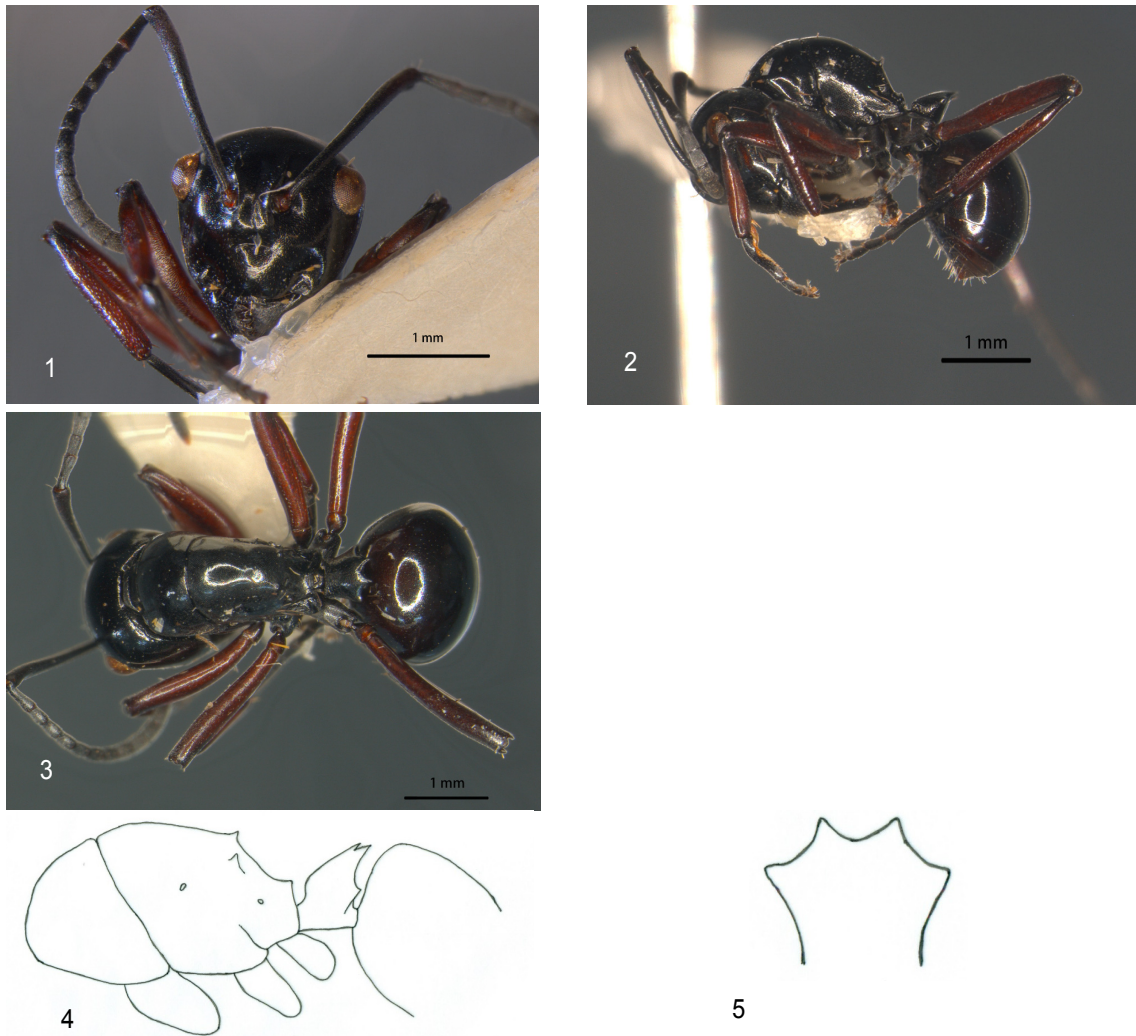


Fig. 1-5. *Polyrhachis (Cyrtomyrma) debilis* Emery, 1887 (worker). 1. head, frontal view; 2. lateral view; 3. dorsal view; 4. alitrunk and petiole, lateral view; 5. petiole, full-face view.

for his assistance when the first author examined the collection in NTU, Hong Pang, and to Feng-long Jia and Yun Li (Sun Yat-Sen University, China) for their assistance when the second author visited SYSU as an exchange student in 2015.

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Received: November 18, 2015

Accepted: December 19, 2015

臺灣新紀錄種德布利斯棘山蟻記述

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摘 要

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