

## Two New Species of the Genus *Leptogenys* From Guangxi, China (Hymenoptera: Formicidae)

by

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### ABSTRACT

Two new species of the ant genus *Leptogenys* Roger, 1861 from China are described, i. e. *L. laeviterga* sp. nov. and *L. rufida* sp. nov.. *L. laeviterga* is close to *L. strenna* Zhou, but mandibles without tooth; anterior margin of clypeus truncate and with a pair of denticles in the middle; meso-propodeal suture deeply depressed. *L. rufida* is close to *L. confucii* Forel, but dorsum of head in front of the eyes finely punctuate; anterior margin of clypeus rounded and with a pair of denticles in the middle; body brownish red. A key to all known species of the genus from China based on the worker caste is provided.

### INTRODUCTION

The ant genus *Leptogenys* Roger, 1861 is a large genus in the family Formicidae, of which 217 species and 31 subspecies or indeterminate species (varieties or races, etc.) have been described in the world. Among the described species, 53 distribute in the Ethiopian region, 42 in the Oriental region, 31 in the Indo-Australian region, 30 in the Neotropical region, and the remain species in Australasian, Malagasy and Nearctic regions, no species in Palaearctic region (Bolton, 2011). In China, 17 species have been recorded before this study (Wheeler, 1930; Terayama, 1990; Tang & Wang, 1995; Wu & Wang, 1995; Xu, 1996, 2000; Zhou, 2001). When we studied the ant fauna of Daming Mountain National Nature Reserve of Guangxi, two new species of the genus were discovered. Descriptions of the new species are as below. The type specimens are deposited in the Insect Collection, Guangxi

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Normal University, Guilin, China. A key to all known species of the genus from China based on worker caste is provided.

## MEASUREMENTS AND INDICES

Following Bolton, 1975:

Total length (TL). The total outstretched length of the individual, from the mandibular apex to the gastral apex.

Head length (HL). The straight-line length of the head in perfect full-face view, measured from the mid-point of the anterior clypeal margin to the mid-point of the occipital margin.

Head Width (HW). The maximum width of the head measured behind the eyes in full-face view.

Cephalic Index (CI).  $HW \times 100 / HL$ .

Scape Length (SL). The straight-line length of the antennal scape, excluding the basal constriction or neck.

Scape Index (SI).  $SL \times 100 / HW$ .

Pronotal Width (PW). The maximum width of the pronotum measured in dorsal view.

Petiole Height (PH). The height of the petiole measured in profile from the apex of the ventral (subpetiolar) process vertically to a line intersecting the dorsalmost point of the node.

Petiole Length (PL). The length of the petiole from the anterior process to the posteriormost point of the tergite, where it surrounds the gastral articulation.

Lateral Petiole Index (LPI).  $PH \times 100 / PL$ .

Dorsal Petiole Width (DPW). The maximum width of the petiole in dorsal view.

Dorsal Petiole Index (DPI).  $DPW \times 100 / PL$ .

All measurements are expressed in millimeters.

## KEY TO THE KNOWN SPECIES OF *LEPTOGENYS* FROM CHINA BASED ON THE WORKER CASTE

- 1 Masticatory margin of mandible with 3 or more than 3 teeth. Head nearly square.....2
- Masticatory margin of mandible without or with only 1 tooth. Head

- elongate, distinctly longer than broad ..... 5
- 2 Inner margin of mandible without tooth..... 3
- Inner margin of mandible with tooth..... 4
- 3 Masticatory margin of mandible with 3 teeth, In dorsal view petiolar node trapezoidal (China: Yunnan; Myanmar) ..... *L. crassicornis* Emery
- Masticatory margin of mandible with 5 teeth, In dorsal view petiolar node subsemicircular (China: Hunan, Guangxi)..... *L. strena* Zhou
- 4 Inner margin of mandible with 1 tooth. In dorsal view petiolar node semicircular. Head and alitrunk black (China: Yunnan).....*L. huangdii* Xu
- Inner margin of mandible with 3 or more than 3 teeth. In dorsal view petiolar node crescent-shaped. Head and alitrunk dark reddish brown (China: Yunnan; Myanmar; India).....*L. birmana* Forel
- 5 Head smooth and shining..... 6
- Head longitudinally striate or densely punctate..... 11
- 6 Scape of antenna surpassing occipital corner by half of its length (China: Yunnan).....*L. pangui* Xu
- Scape of antenna surpassing occipital corner by less than half of its length..... 7
- 7 Head, alitrunk and gaster without metallic luster..... 8
- Head, alitrunk and gaster with blue or purple metallic luster ..... 9
- 8 Anterior margin of clypeus not truncate, without denticle in the middle (China: Zhejiang, Hunan; Vietnam; Myanmar; Sri Lanka) .....  
.....*L. peuqueti* (Andre)
- Anterior margin of clypeus truncate, with a pair of denticles in the middle (China: Guangxi) .....*L. laeviterga* sp. nov.
- 9 Anterior margin of clypeus truncate (China: Yunnan, Guangxi, Taiwan; India; Sri Lanka; Philippines) ..... *L. chinensis* (Mayr)
- Anterior margin of clypeus extruding ..... 10
- 10 Body black. Subpetiolar process rounded at apex (China: Yunnan, Hunan, Guangxi, Hong Kong, Macao; Myanmar; India; Bangladesh) .....  
..... *L. minchinii* Forel
- Body dark yellowish brown. Subpetiolar process triangular, angled at apex (China: Taiwan; Japan) .....*L. confucii* Forel
- 11 Head longitudinally striate..... 12
- Head densely punctate..... 13

- 12 Clypeus with longitudinal central carina (China: Yunnan, Guangdong, Guangxi, Taiwan; Myanmar; India; Sikkim; Sri Lanka; Malaysia) .....  
 ..... *L. diminuta* (F. Smith)
- Clypeus without longitudinal central carina (China: Yunnan, Guizhou, Hunan, Guangxi, Fujian, Taiwan, Hong Kong; Myanmar; Sikkim; India) .....  
 ..... *L. kitteli* (Mayr)
- 13 Masticatory margin of mandible as long as inner margin. Masticatory margin with 1 small tooth in the middle (China: Yunnan) .....  
 ..... *L. zhuangzii* Xu
- Masticatory margin of mandible shorter than inner margin. Masticatory margin without tooth in the middle ..... 14
- 14 Anterior margin of clypeus truncate ..... 15
- Anterior margin of clypeus extruded ..... 17
- 15 Anterior margin of clypeus without denticle in the middle (China: Guangxi) .....  
 ..... *L. huapingensis* Zhou
- Anterior margin of clypeus with a pair of denticles in the middle ..... 16
- 16 Head, alitrunk, and petiole densely and coarsely punctate (China: Guangxi) .....  
 ..... *L. binghamii* Forel
- Dorsum of head in front of the eyes finely punctate, alitrunk and petiole smooth and shining (China: Guangxi) .....  
 ..... *L. rufida* sp. nov.
- 17 Masticatory and inner margins of mandible separated by a blunt angle. (China : Yunnan) .....  
 ..... *L. mengzii* Xu
- Masticatory margin of mandible rounded into inner margin ..... 18
- 18 Dorsum of propodeum a little longer than declivity, 2nd segment of flagellum of antenna longer than the 3rd segment (China: Guangxi) .....  
 ..... *L. hezhouensis* Zhou
- Dorsum of propodeum about 3 times as long as declivity, 2nd and 3rd segments of flagellum of antenna about equal (China: Yunnan) ...  
 ..... *L. laozii* Xu

## DESCRIPTIONS OF THE NEW SPECIES

### *Leptogenys laeviterga* sp. nov.

Figs. 1–3

*Holotype worker.* TL 8.8, HL 1.67, HW 1.00, CI 59, SL 1.90, SI 190,



Figs. 1–6 *Leptogenys* workers. 1–3 *L. laeviterga* sp. nov. 4–6 *L. rufida* sp. nov. 1, 4, head in full-face view 2, 5, body in profile view 3, 6, alitrunk in dorsal view

PW0.95, AL 2.75, ED 0.25, ML 0.90, PL 0.80, PH 0.87, DPW 0.62, LPI 108, DPI 77. Head longer than broad, lateral sides parallel, occipital margin straight, occipital carina distinct. Mandibles elongate, with only apical tooth. Clypeus acutely carinate, its anterior margin truncate, and with a pair of denticles in the middle. Eyes moderately large, flat, placed in front of the midline of the lateral sides of the head. Antennal scapes stout, about 1/3 of its length surpassed beyond the occipital margin. Alitrunk slender, in profile view pro-mesonotum convex, pro-mesonotal suture and meso-propodeal suture distinct, metanotal groove deeply depressed. Dorsum of propodeum straight, about twice as long as declivity, its posterodorsal corner rounded. Petiolar node anteroposteriorly compressed, with anterior face evenly convex, posterior face straight, dorsum rounded. In dorsal view, the node sub-semicircular, longer than broad. Subpetiolar process moderately large, triangular. Legs long. Gaster stout, longer than alitrunk, constriction between 1st and 2nd gastral segments distinct. Sting long.

Mandibles and clypeus longitudinally striate. Antennal scapes and flagella shagreened. Head, alitrunk, petiole and gaster smooth and shining. The lower 1/3 of mesopleura and sides of propodeum longitudinally striate. Declivity of propodeum transversely striate. Head, alitrunk, petiole and gaster with abundant soft erect hairs, which combined with abundant short suberect hairs on head, antenna and legs. Colored blackish red. Mandibles and legs paler, brownish red.

*Paratype worker.* TL 8.3, HL 1.70, HW 1.02, CI 60, SL 1.90, SI 186, PW 1.00, AL 2.85, ED 0.27, ML 0.92, PL 0.75, PH 0.87, DPW 0.67, LPI 116, DPI 89.

Paratype worker. Daming Mountain National Nature Reserve, N23.49, E 108.43, 1230m, May 29.2011. Yuan Chen; Paratype, 1 worker, data as holotype, but in May 21.2011. Shanyi Zhou.

Queen and male are unknown.

*Ecology.* Unknown.

*Etymology.* This species is named after its shining gaster.

This new species is close to *L. strenna* Zhou, but mandibles without tooth; anterior margin of clypeus truncate, and with a pair of denticles in the middle; meso-propodeal suture deeply depressed. It distinguished from *L. lucidula* Emery by the lower 1/3 of mesopleura, sides of propodeum longitudinally

striate, and declivity of propodeum transversely striate.

*Leptogenys rufida* sp. nov.

Figs. 4–6

*Holotype worker.* TL 5.6, HL 1.12, HW 0.75, CI 67, SL 1.12, SI 149, PW 0.70, AL 1.80, ED 0.20, ML 0.55, PL 0.65, PH 0.60, DPW 0.42, LPI 92, DPI 64. Head roughly rectangular, distinctly longer than broad. Occipital margin straight, occipital carina distinct. Occipital corners rounded. Lateral sides of head almost straight. Mandibles slender, inner margin without tooth, masticatory margin with only 1 apical tooth, basal corner rounded. Clypeus with sharp longitudinal central carina, anterior margin rounded, with a pair of denticles in the middle. Scape of antenna surpassed occipital corner by about 1/4 of its length. Segments of flagellum longer than broad, the 2nd and 3rd joints about equal. In profile view dorsum of pronotum feebly convex, mesonotum a little lower than pronotum, pro-mesonotal suture distinct; metanotal groove depressed but not deep. Dorsum of propodeum slightly convex, about 3 times as long as declivity, declivity weakly convex. In profile view petiolar node trapezoid, declined forward to the anterior face, posterodorsal angle bluntly extruding, dorsal face evenly convex, posterior face straight. In dorsal view the node longer than broad, narrowed forward. Subpetiolar process small, nearly square, posteroventral corner acute. Constriction between the two basal gastral segments distinct. Mandibles smooth and shining, clypeus longitudinally striate. Scapes of antennae densely punctuate. Dorsum of head in front of the eyes densely punctuate, occipital border and occipital corners smooth. Dorsum of alitrunk, petiole and gaster smooth and shining. Mesopleura and lateral sides of propodeum irregularly rugose. Dorsum of head and body with abundant longer erect hairs, short suberect hairs and decumbent pubescence. Scapes and tibiae with abundant subdecumbent hairs and dense pubescence. Head, alitrunk, petiole and gaster brownish red. Apex of antennae, legs and apex of gaster paler, yellowish red.

*Paratype worker.* TL 6.4, HL 1.25, HW 0.80, CI 64, SL 1.25, SI 156, PW 0.75, AL 2.0, ED 0.25, ML 0.57, PL 0.70, PH 0.60, DPW 0.47, LPI 85, DPI 67.

Holotype worker, Daming Mountain National Nature Reserve, N23.49,

E 108.43, 1230m, May 29.2011. Yuan Chen; Paratype: 1 worker, Tianmu Mountain Nature Reserve, Zhejiang Province of China. August 2.2011. Zhilin Chen.

Queen and male are unknown.

*Ecology.* Unknown.

*Etymology.* This species is named after its red color.

This new species is close to *L. confucii* Forel, but with dorsum of head in front of the eyes finely punctuate, anterior margin of clypeus rounded, with a pair of denticles in the middle; body brownish red.

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