

Two New Species of the Ant Genus *Myrmecina* (Hymenoptera: Formicidae), with a Key to Chinese Species

by

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ABSTRACT

Two new species of the ant genus *Myrmecina* Curtis are described from China: *M. curvispina* n. sp. and *M. hamula* n. sp.. *M. sinensis* Wheeler is raised to species status. A key to the known Chinese *Myrmecina* species is presented.

Key words: Hymenoptera, Formicidae, *Myrmecina*, new species, key, China

INTRODUCTION

The ant genus *Myrmecina* Curtis belongs to the subfamily Myrmicinae of the family Formicidae. There are 36 described species and 2 subspecies worldwide (Tiwari 1994; Bolton 1995; Terayama 1996; Onoyama 1997; Lin & Wu 1998; Rigato 1999; Zhou 2001; Huang *et al.* 2008). In China, since Forel (1912) described the first species, *M. sauteri*, 7 species and 1 subspecies have been recorded (Forel 1912; Wheeler 1921; Terayama 1985; Lin & Wu, 1998; Zhou 2001; Xu 2002; Huang *et al.* 2008). However, the distribution records of some species are not exact. For example, *M. striata* Emery recorded by Zhou (2001) from Guangxi Province has proven to be a new species which is described in this paper, but we also collected some specimens of the species at Jinyunshan, Chongqing City later, and it was found at Yunnan Province (Xu 2002). The specimens collected in Guangxi and identified by Zhou (2001) as *M. graminicola* (Latreille) are actually *M. graminicola sinensis* Wheeler. Fortunately, one specimen of *M. graminicola* (Latreille) was collected at Jinfoshan, Chongqing City. It is the purpose of this paper to describe 2 new species, raise *M. sinensis* Wheeler to specific

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species status and add the typical *M. graminicola* to the Chinese ant fauna. A key to the known Chinese *Myrmecina* species is presented.

ABBREVIATIONS

TL. The total length of the individual, from mandibular apex to gastral apex.

HL. Head length, from anterior clypeal margin to the midpoint of the occipital margin in a straight line, in full face view.

HW. Head width, the maximum width of the head behind the eyes, in full face view.

CI. Cephalic index, $HW \times 100 / HL$.

SL. Antennal scape length, the straight length of the antennal scape, excluding the basal constriction.

SI. Scape index, $SL \times 100 / HW$.

PW. Pronotal width, maximum width of the pronotum, in dorsal view.

AL. Alitrunk length, maximum length of the alitrunk, from the anterior point of the pronotum to the posterior base of the metapleural lobes, in profile view.

EL. Eye length, maximum length of the eye.

PL. Petiole length, maximum length of the petiole, in dorsal view.

PH. Petiole height, from the ventral margin to the dorsal margin of the petiole, in straight line, in profile view.

PNW. Petiolar node width, maximum width of the petiolar node, in dorsal view.

PPL. Postpetiole length, maximum length of the postpetiole, in dorsal view.

PPH. Postpetiole height, from the ventral margin to the dorsal margin of the postpetiole, in straight line, in profile view.

PPW. Postpetiolar node width, maximum width of the postpetiolar node, in dorsal view.

All measurements are expressed in millimeters.

RESULTS

Key to the Known Chinese Species of *Myrmecina* Based on the Worker Caste

1. Antennae with 11 segments. China (Hunan).....
..... *M. pauca* Huang *et al.*
- Antennae with 12 segments2
2. Propodeal spines triangular, as long as or even shorter than wide at the base.....3
- Propodeal spines relatively long, longer than their wide at the base6
3. Large species, TL > 3.5 mm. China (Taiwan).....*M. strigis* Lin & Wu
- Small species, TL < 2.8 mm4
4. Anterior clypeal border with a median tooth. China (Guangxi, Hunan) .
.....*M. guangxiensis* Zhou
- Anterior clypeal border without a median tooth5
5. Eyes small, consisting of less than ten ommatidia; body yellowish orange or yellow. China (Taiwan).....*M. taiwana* Terayama
- Eyes moderately large, consisting of more than ten ommatidia; body dark brown and legs yellowish orange. China (Taiwan, Guangxi)
..... *M. sauteri* Forel
6. Propodeal spines distinctly curved outwards at the apex in dorsal view (Figs. 1–3). China (Guangxi)*M. curvispina* n. sp.
- Propodeal spines straight, not curved outwards at the apex in dorsal view7
7. Anterior clypeal border merely rounded and sinuately emarginate in the middle and without teeth (Figs. 7–9). China (Zhejiang, Guangxi)
..... *M. sinensis* Wheeler, n. status
- Anterior clypeal border with teeth8
8. Propodeal spines with small hooks at their apex; striations on the head more feeble, on the dorsum of the alitrunk strong; postpetiole subsquare (Figs. 4–6). China (Guangxi, Shaanxi)..... *M. hamula* n. sp.
- Propodeal spines without hooks at their apex; striations on the head as strong as those on the dorsum of the alitrunk; postpetiole transverse.....9
9. Striations on dorsum of the head and alitrunk coarse and regular, grooves

- between striations deep. China (Chongqing, Yunnan); Burma
 *M. striata* Emery
 — Striations on the dorsum of the head and alitrunk fine and irregular,
 grooves between striations shallow (Figs. 10–12). China (Chongqing);
 Germany, Great Britain, Russia, France, Italy, Tunisia, Sweden.....
 *M. graminicola* (Latreille)

DESCRIPTIONS OF THE NEW SPECIES

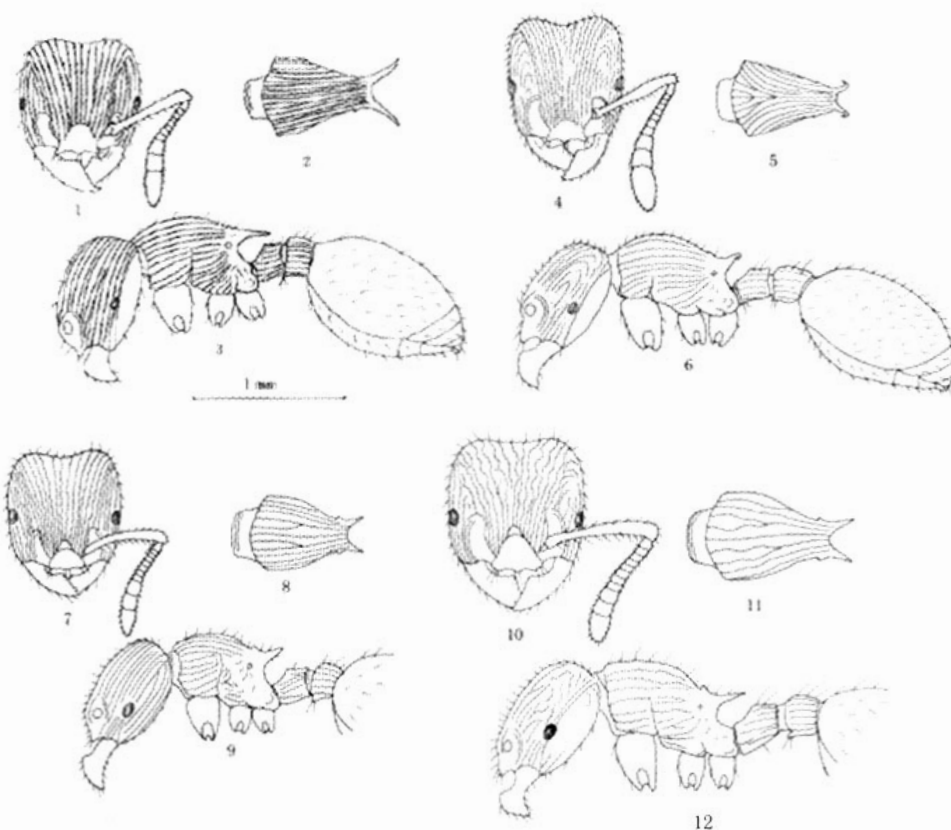
Myrmecina curvispina n. sp.

Figs. 1–3

Holotype. Worker. TL 3.43, HL 0.78, HW 0.80, CI 103, SL 0.63, SI 78, PW 0.59, AL 0.91, EL 0.09, PL 0.24, PH 0.24, PNW 0.24, PPL 0.15, PPH 0.26, PPW 0.28.

Description.

Head square, with broadly concave posterior margin, slightly convex sides and developed occipital carina. Mandibles massive triangular, masticatory margin armed with two big apical teeth followed by a row of small blunt teeth. Clypeus with anterior margin slightly concave, bearing a small projection in the middle. Frontal lobes slightly raised, divergent behind, without a narrow oval smooth space between them. Eyes small and long oval, situated laterally a little before the middle of head, consisting of less than ten ommatidia. Antennae 12-segmented; scape slightly curved, almost reaching occipital corner, cylindrical at base and increasing in breadth to apex; club 3-jointed, with apical segment longer than the two preceding ones combined. Alitrunk obviously convex above, gradually tapering posteriorly in dorsal view; anterior margin roundly convex with humeral corners distinctly angular; the anteroventral pronotal angle tooth-like, acute and rectangular in profile. Anterolateral corner of dorsum of propodeum with developed and acute triangular teeth; declivity concave; propodeal spines long, pointing backwards, divergent posteriorly, distinctly curved outwards at apex in dorsal view. Petiole quadrangular, not pedunculate, dorsal node with distinct cross ridge; subpetiolar process small, anteriorly situated and triangular; postpetiolar transversely broad, shorter but broader than petiole. Gaster broadly oval.



Figs. 1-12. *Myrmecina* workers. 1-3, *M. curvispina* n. sp. 4-6, *M. hamula* n. sp. 7-9, *M. sinensis* Wheeler, new status. 10-12, *M. graminicola* 1, 4, 7, 10, head in full face view. 2, 5, 8, 11, alitrunk in dorsal view. 3, 6, 9, 12, body in profile view.

Mandibles, clypeus, declivity of propodeum, legs, anterior surface of petiole and gaster smooth and shining. Antennal scape opaque, with indistinct longitudinal rugae. Head, alitrunk strongly longitudinally striate, petiole and postpetiole impressed with longitudinal hollows above and at sides. Body with sparse pale suberect hairs, which are a little more abundant on gaster. Pubescence absent except on the flagellum of the antennae. Body black; mandibles, clypeus, genae, antennae, propodeal spines, declivity, petiole and postpetiole (excluding the dorsum), lateral sides of the first gastral segment reddish brown, legs and gaster behind the first segment light reddish brown.

Holotype: worker, Maoershan Natural Reserve, Xing'an County, Guangxi Province, P.R. China (25° 54' N, 110° 30' E), August 22, 1998, Coll. by Shanyi Zhou.

Male and queen.

Unknown.

Type depository.

The type specimen is deposited in the Insect Collection, College of Life Sciences, Guangxi Normal University, Guilin, China.

Etymology.

This new species is named from the Latin words “curvus” and “spina” referring to its curved propodeal spines.

Remarks.

The new species resembles *M. curtisi* Donisthorpe, but differs from the latter in its obviously out-curved propodeal spines, smaller eyes, less convex dorsum of the alitrunk, and the acute and rectangular anteroventral pronotal angles.

***Myrmecina hamula* n. sp.**

Figs. 4-6

Holotype. Worker. TL 3.50, HL 0.78, HW 0.74, CI 94, SL 0.63, SI 85, PW 0.52, AL 0.89, EL 0.09, PL 0.26, PH 0.22, PNW 0.20, PPL 0.22, PPH 0.20, PPW 0.24.

Description.

Head square, with parallel sides and concave posterior margin. Mandible triangular, masticatory margin armed with two sharp apical teeth and a series of small blunt denticles. Clypeus with a distinct medial tooth and a angulate projection on either sides. Antennae 12-segmented, scape cylindrical at basal bend, reaching occipital border. Eyes moderately large, situated laterally before the longitudinal middle of the head, 0.11 mm in maximum diameter, consisting of about ten ommatidia. Alitrunk convex in profile view, tapering posteriorly, pronotum margined, anteroventral corner of lateral pronotal lobe blunt. Anterolateral process of propodeal dorsum distinct and triangular; propodeal spines long, apex strongly recurved outwards, forming a distinct small hook, declivity concave. Petiole cylindrical, longer than broad, with truncate and concave anterior surface, without distinct anterior peduncle; dorsal node with a distinct cross ridge. Subpetiolar process blunt, postpetiole subsquare

but not transversely broad, nearly as long as broad. Gaster broadly oval.

Mandibles and clypeus smooth and shining. Antennal scape longitudinally rugose. Head densely punctate, with feeble granulate rugae diverging posteriorly. Alitrunk more strongly longitudinally rugose than in *M. graminicola* and the dorsal rugae divergent anteriorly. Petiole and postpetiole coarsely and longitudinally rugose. Gaster smooth and shining. Body covered with sparse recumbents and subrecumbents hairs, flagellum with dense pubescence. Body black brown; mandibles, clypeus, gena, propodeal declivity, legs and gaster behind the first segment yellowish brown.

Paratype. Worker: TL 3.40, HL 0.77, HW 0.70, CI 91, SL 0.60, SI 86, EL 0.08, AL 0.86, AW 0.49, PNW 0.21, PL 0.21, PH 0.19, PPW 0.24, PPL 0.20, PPH 0.18.

Holotype worker. Long Hu, Nonggang National Nature Reserve (22° 11' N, 106° 59' E), Longzhou County, Guangxi Province, P. R. China, May 23, 1998, Coll. by John R. Fellowes.

Paratype 1 worker, Foping National Nature Reserve (33° 32' N, 107° 40' E), Shaanxi Province, P. R. China, August 6, 2006, Coll. by Libin Ma.

Male and queen.

Unknown.

Type depository.

The holotype is deposited in the Insect Collection, College of Life Science, Guangxi Normal University, Guilin, China. The paratype is deposited in the Institute of Zoology, Shaanxi Normal University, Xi'an, China.

Etymology.

The species is named from the Latin word “hamulus”, referring to its small hooks at the apex of propodeal spines.

Remarks.

This new species is closely related to *M. graminicola*, but it can be distinguished from the latter by the small hooks at the apices of propodeal spines, more feeble rugae on the head, and more strong rugae on the dorsum of the alitrunk.

***Myrmecina sinensis* Wheeler, 1921 new status**

Figs. 7-9

Myrmecina graminicola subsp. *sinensis* Wheeler 1921 Bull. Mus. Comp. Zool. Harvard Coll. 64: 539.

Material examined.

2 workers, Pingying Town, Luocheng County, Guangxi, China (25° 07' N 108° 36' E) 680 m, July 28, 2003, Coll. by Shanyi Zhou.

Male and queen.

Unkown.

Deposition

The specimens are deposited in the Insect Collection, College of Life Science, Guangxi Normal University, Guilin, China.

Remarks.

The species differs distinctly from *M. graminicola* (Figs 10-12) by its clypeus completely lacking median tooth, different sculpture and pilosity, posterolateral portion of ventral head surface with longitudinal sculpture. We propose that it has specific status.

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