

# SYSTEMATICS OF CHINESE SPECIES OF THE ANT GENUS *PRISTOMYRMEX* MAYR (HYMENOPTERA: FORMICIDAE)

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**Abstract** This paper examines the systematic relationships of four Chinese species of *Pristomyrmex* Mayr, i.e. *P. brevispinosus* Emery, *P. formosae* Forel, *P. pungens* Mayr, *P. hamatus* sp. nov. A key based on worker caste is provided for the known Chinese species. The new species, *P. hamatus* sp. nov., collected in the tropical rain forest of southern Yunnan Province is close to *P. pungens* Mayr, but inner margin of mandible with a distinct tooth, in dorsal view apices of propodeal spines curved inward and hook-like, in profile view dorsum of alitrunk roundly convex, petiolar node broad and with dorsum relatively straight. The type specimens are deposited in the Insect Collection, Faculty of Resources, Southwest Forestry College, Kunming, Yunnan Province, China.

**Key words** hymenoptera, formicidae, pristomyrmex, taxonomy, China

The ant genus *Pristomyrmex* Mayr is distributed in the Old World tropics and subtropics (Bolton, 1995a). According to Bolton (1995b), 38 species have been recorded and the Indo-Australian Region is the distribution center of the genus. Taylor (1965, 1968) revised the Australian species and Bolton (1981) revised the Afrotropical species but no revision of species found elsewhere has been done to date.

Three pristo-species were previously known in China. Forel (1912) described *Pristomyrmex brevispinosus* r. *sulcatus* var. *formosae* from Taiwan Province. However, Bolton (1995b) treated this variety as invalid causing its name to be unavailable. Recent reexamination of this variety by Lin *et al.* (1998) has resulted in its validity being reinstated and it being raised to species rank, i.e. *P. formosae* Forel. Wheeler (1930-1931) reported *P. pungens* Mayr from eastern China. In the 1990's, Chou *et al.* (1991) recorded *P. pungens* Mayr from Taiwan Province. Wu *et al.* (1995) reported *P. pungens* Mayr in northern, eastern and southern China. Tang *et al.* (1995) recorded *P. pungens* Mayr and *P. brevispinosus* Emery in China. In this paper, a new species of the genus, *P. hamatus*

sp. nov. from the tropical rain forests of southern Yunnan Province is described. Up to date, 4 species of *Pristomyrmex* have been recorded in China.

Standard measurements and indices are as defined in Bolton (1981): TL-Total length, HL-Head length, HW-Head width, CI-Cephalic index =  $HW \times 100 / HL$ , SL-Scape length, SI-Scape index =  $SL \times 100 / HW$ , PW-Pronotal width, AL-Alitrunk length, ED-Maximum diameter of eye. All measurements are expressed in millimeters. The type specimens are deposited in the Insect Collection, Faculty of Resources, Southwest Forestry College, Kunming, Yunnan Province, China.

## Genus *Pristomyrmex* Mayr

*Pristomyrmex* Mayr, 1866, Verh. Zool.-Bot. Ges. Wien 16: 903. Type-species: *Pristomyrmex pungens*, by monotypy.

### Key to Chinese species of *Pristomyrmex* based on worker caste

1. Pronotum with a pair of spines or dents. Propodeum with a pair of short spines ..... 2
- Pronotum without spines and dents. Propodeum with a pair of long spines ..... 3

2. Pronotum with a pair of slender and acute spines. Postpetiolar node longer than broad. Body larger, with TL 3.5 - 4.8 mm (Figs. 1 - 4) (China: Yunnan and Guangdong; Japan; Myanmar; Indonesia) .....  
 ..... *P. brevispinosus* Emery
- Pronotum with a pair of short and blunt dents. Postpetiolar node broader than long. Body smaller, with TL 2.8 - 3.4 mm (China: Taiwan) ..... *P. formosae* Forel
3. Inner margin of mandible without tooth. In dorsal view, apices of propodeal spines straight and sharp. In profile view, dorsum of petiolar node narrow and convex (Figs. 5 - 8) (China: Liaoning, Shandong, Jiangsu, Shanghai, Zhejiang, Anhui, Jiangxi, Hubei, Hunan, Guangdong, Guangxi, Hainan, Sichuan, Yunnan, Tibet; Japan; Philippines; Malaysia) ..... *P. pungens* Mayr
- Inner margin of mandible with a distinct tooth. In dorsal view, apices of propodeal spines curved inward and hook-like. In profile view, dorsum of petiolar node broad and straight (Figs. 9 - 12) (China: Yunnan) .....  
 ..... *P. hamatus* sp. nov.

***Pristomyrmex hamatus* sp. nov.** (Figs. 9 - 12)

Holotype worker: TL 3.2, HL 0.95, HW 0.90, CI 95, SL 0.88, SI 97, PW 0.63, AL 0.90, ED 0.16. Head nearly circular, slightly longer than broad. Occipital margin nearly straight, weakly emarginated in the middle, occipital corners rounded, lateral sides roundly convex. Inner margin of mandible with a tooth in the center, masticatory margin with 4 teeth and a short diastema between the 2nd and 3rd teeth. Clypeus with a longitudinal central carina, anterior margin roundly convex and armed with 8 blunt crenatures. Frontal carinae long, extending backward beyond the posterior margin level of the eyes. Antennal scrobes shallow and distinct. Antenna with 11 segments, scape surpassing occipital corner by about 1/4 of its length, antennal club consisted of the 3 apical segments. Eyes situated on the mid-line of the head and extruding outwards laterally. In profile view, dorsum of alitrunk roundly convex, sloping downwards at rear. Anterior margin of pronotum submarginate. Pronotal suture and metanotal groove absent. Propodeal spines long, curved inward at apices and hook-like. Propodeal lobes elongate and spine-like, about 1/3 times as long as propodeal spine. In profile view, petiole with short and stout peduncle an-

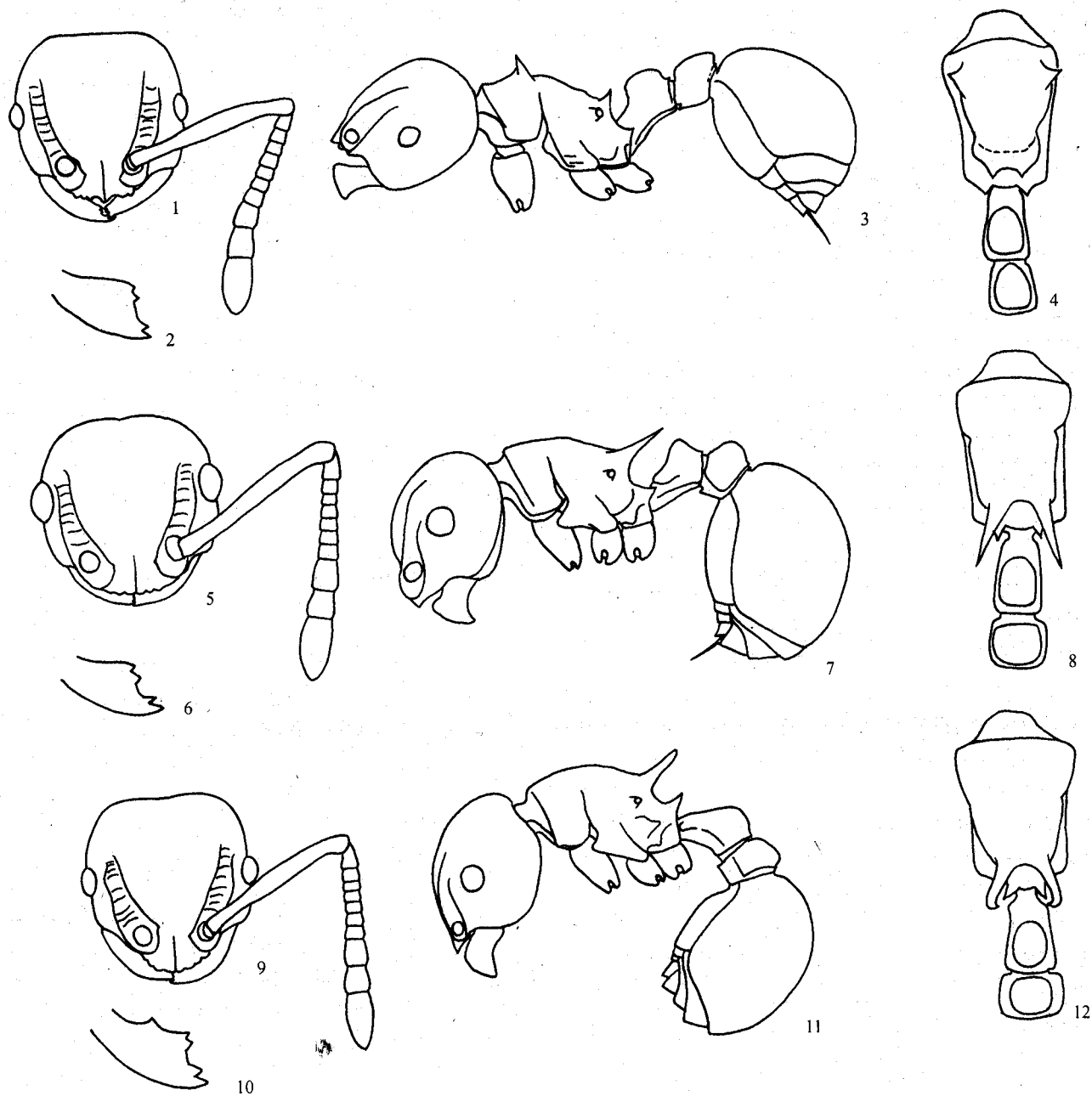
teriorly, petiolar node inclined backward, anterior corner higher than posterior one, dorsal face slightly convex, anterior face slope-like. Postpetiolar node short and high, strongly inclined backward. In dorsal view, petiolar node nearly square, postpetiolar node transverse and rectangular. Mandibles sparsely, longitudinally and coarsely striate. Head and alitrunk largely foveolate, interface formed a coarse reticulation system. Petiole and postpetiole longitudinally and coarsely striate. Gaster smooth and shining. Head and alitrunk with abundant erect long hairs and suberect short hairs. Petiolar node with a pair of erect hairs, postpetiolar node with 2 pairs of suberect long hairs. Gaster with sparse depressed short pubescence, without erect hairs. Scapes, femorae and tibiae with abundant suberect hairs. Body reddish brown in colour, appendages yellowish brown.

Paratype workers: TL 3.2 - 3.4, HL 0.93 - 0.95, HW 0.88 - 0.90, CI 95 - 97, SL 0.88 - 0.90, SI 97 - 100, PW 0.60 - 0.63, AL 0.88 - 0.90, ED 0.15 - 0.16 (5 individuals measured). As holotype, but body yellow to reddish brown in colour.

Holotype: worker, No. A97-1165, 660 m, Cuipingfeng, Menglun Town, Mengla County, Yunnan Province, Aug. 10, 1997, collected in karst monsoon forest by Mr. LIU Tai-yong. Paratypes: 1 worker, No. A98-993, 650 m, Menglun Town, Mengla County, Yunnan Province, Sep. 15, 1998, collected by YANG Xiao-dong; 5 workers, with same data as No. A98-993, but No. A98-1012, Feb. 2, 1998, collected by ZHANG Zhi-ying; 1 worker, No. A97-1687, 900 m, Manzhuang Village, Mengla County, Yunnan Province, Aug. 14, 1997, collected in semi-evergreen monsoon forest by HE Yun-feng.

This new species is close to *P. pungens* Mayr, but the inner margin of mandible has a distinct tooth, in dorsal view, apices of propodeal spines are curved inward and hook-like, in profile view, dorsum of alitrunk roundly convex, petiolar node broad and with dorsum relatively straight.

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Figs. 1-12 *Pristomyrmex* workers.

1-4 *P. brevispinosus* Emery; 5-8 *P. pungens* Mayr; 9-12 *P. hamatus* sp. nov.; 1, 5, 9 Head in full face view; 2, 6, 10 Mandible in dorsal view; 3, 7, 11 Body in profile view; 4, 8, 12 Thorax, petiole and postpetiole in dorsal view.

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## 中国棱胸蚁属系统分类研究(膜翅目: 蚁科)

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研究中国棱胸蚁属 *Pristomyrmex* Mayr 蚂蚁 4 种: 短刺棱胸蚁, *P. brevispinosus* Emery, 台湾棱胸蚁 *P. formosae* Forel, 双针棱胸蚁 *P. pungens* Mayr, 弯钩棱胸蚁 *P. hamatus* sp. nov.。编制了工蚁分种检索表。描述了采于云南省南部勐腊热带雨林内一新种弯钩棱胸蚁 *P. hamatus* sp. nov. 该新种与双针棱胸蚁 *P. pungens* Mayr 接近, 但上颚内缘具 1 个明显的齿, 背面观并胸腹节刺内弯呈钩状, 侧面观胸部背面圆形隆起, 腹柄结宽且背面较直。模式标本保存在西南林学院资源学院。

关键词 膜翅目 蚁科 棱胸蚁属 分类 中国

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