昆虫分类学报
Entomotaxonomia
Vol. 26, No. 3
Sept., 2004

The Third Species of the Ant Genus *Perissomyrmex* Smith (Hymenoptera: Formicidae) in the World

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Abstract: The third species of the ant genus *Perissomyrmex* in the world, *P. fissus* sp. nov., is collected from Ailao Mountain Nature Reserve of Yunnan Province. *Perissomyrmex* is a new record genus in China. Taxonomic key based on worker caste is provided for the 3 species: *P. snyderi* Smith, *P. monticola* de Andrade, and *P. fissus* sp. nov.

Key words: Hymenoptera; Formicidae; *Perissomyrmex*; Taxonomy
CLC number: Q969.554.2 **Document code:** A
Article ID: 1000-7482(2004)03-0217-05

The ant genus *Perissomyrmex* was established by Smith in 1947 based on the type-species *P. snyderi* Smith intercepted in quarantine in New Jersey, U. S. A., ostensibly on a ship from Guatemala. But there is no hard evidence that Guatemala is the original home of the genus. Along with the discovery of a second species of the genus from Bhutan, Bolton (1981) suspected that South America is not the place of origin and the specimen of the type-species were brought to the U. S. A., via Guatemala, from somewhere in the Oriental region, or possibly the Indo-Australian region, by human commerce. The second species of the genus, *P. monticola*, was described by de Andrade in 1993. Baroni Urbani and de Andrade (1993) also considered the new Bhutanese species added strong weight to the hypotheses of an Old World natural habitat for *Perissomyrmex* and to its accidental introduction in both previously recorded American localities (Guatemala + New Jersey). However, Longino *et al*. (1994) reported that *P. snyderi* is native to Central America and its worker caste is polymorphism, this result provided a powerful evidence for the Central American origin of the genus. During the investigation of ant species-diversity in Ailao Mountain Nature Reserve of Yunnan Province, the third species of the genus, *P. fissus* sp. nov, is discovered in a ground sample in the primary sub-alpine moist evergreen broad-leaf forest at the altitude of 2500 m.

It seems the genus *Perissomyrmex* has an ancient origin before the separation of American and Asian old lands. During the long evolutionary history, the genus changes

Received date: 2003-06-25

Foundation item: This study is supported by the Natural Science Foundation of Yunnan Province (2001 C0042M) and the National Natural Science Foundation of China (30260016)

slightly in morphology. At present time, the genus is limited in species number, rare in individual amount, living mainly in the high altitude mountainous habitats, and distributed in the Oriental and Neotropical Regions.

Up to date, only 3 species of the genus *Perissomyrmex* are known in the world. According to Bolton (1981, 1995), *Perissomyrmex* is most close to *Pristomyrmex*, and belongs to the tribe Myrmecinini of Myrmicinae.

Standard measurements and indices are as defined in Bolton (1981): TL—Total length, HL—Head length, HW—Head width, CI—Cephalic index = HW×100/HL, SL—Scape length, SI—Scape index = SL×100/HW, PW—Pronotal width, AL—Alitrunk length. Besides, the following measurements and indices are supplemented:

EL—Eye length: Maximum length of the eye.

PL—Petiole length: Length of petiole, measured in lateral view from the lateral flanges of the anterior peduncle to the posterior margin of the petiole.

PH—Petiole height: Maximum height of the petiole, measured in lateral view at right angle to PL, but excluding any protruding teeth or lobes at the anteroventral or posteroventral extremities of the petiole.

DPW—Dorsal petiole width: Maximum width of the petiole measured in dorsal view.

PI—Petiole index = DPW×100/PL.

PPL—Postpetiole length: Length of postpetiole, measured in lateral view from the anterior margin to the posterior margin of the postpetiole.

PPH—Postpetiole height: Maximum height of the postpetiole, measured in lateral view at right angle to PPL, but excluding any protruding ventral teeth or lobes of the postpetiole.

PPW—Postpetiole width: Maximum width of the postpetiole measured in dorsal view.

PPI—Postpetiole index = PPW×100/PPL.

All measurements are expressed in mm.

The type specimen is deposited in the Insect Collection, Southwest Forestry College, Kunming, Yunnan Province, P. R. China.

Perissomyrmex Smith

Perissomyrmex Smith, 1947. *Jour. New York Entom. Soc.*, 55(4): 281.

Type-species: *Perissomyrmex snyderi*, original designation.

Key to species of *Perissomyrmex* of the world based on worker caste

1. Central notch of anterior margin of clypeus shallow and V-shaped, lateral sides of the notch formed a pair of blunt teeth. In profile view, petiolar node low and thick, subpetiolar process small and tooth-like. Anteroventral corner of postpetiole acutely toothed. Lateral sides of mesothorax, metathorax and propodeum densely and coarsely striate (Guatemala) (Figs.1~3) …… …. *P. snyderi* Smith

-. Central notch of anterior margin of clypeus moderate or deep and U-shaped, lateral sides of the notch formed a pair of acute teeth. In profile view, petiolar node high and thin, subpetiolar process absent. Anteroventral corner of postpetiole rightly angled. Lateral sides of mesothorax, metathorax and propodeum smooth and very sparsely striate ……2

2. Central notch of anterior margin of clypeus moderate, its depth about 1/5 of the clypeus length. Anterolateral border of clypeus with one denticle. In profile view, dorsum of mesonotum roundly convex at anterior 1/3. Dorsum of propodeum prominent just behind the metanotal groove. Body uniformly

brown (Bhutan) (Figs. 4~6) ……*P. monticola* de Andrade

-. Central notch of anterior margin of clypeus deep, its depth about 2/5 of the clypeus length. Anterolateral border of clypeus with two denticles. In profile view, dorsum of mesonotum angularly prominent at posterior 1/3. Dorsum of propodeum straight. Body bicolor, head and alitrunk brown, gaster black (China: Yunnan Province) (Figs.7~10) …… *P. fissus* sp. nov.

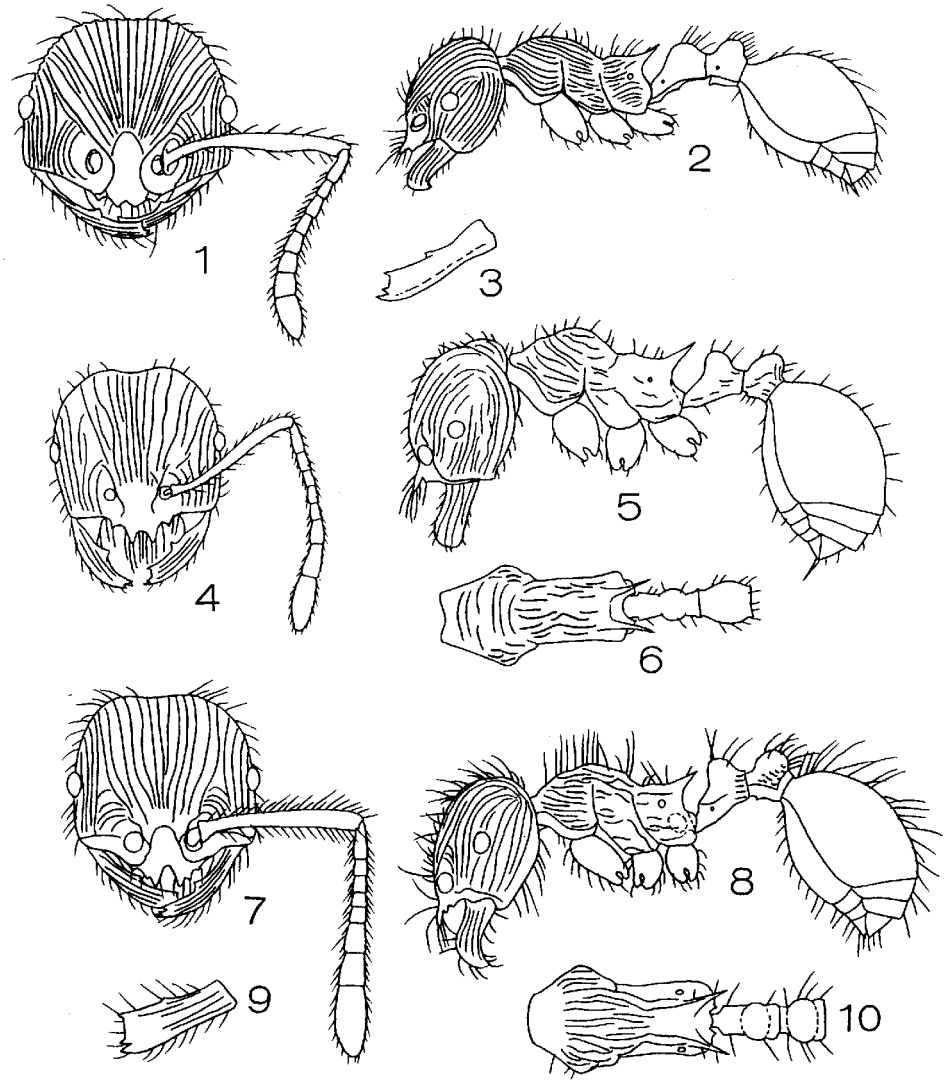
Perissomyrmex fissus, sp. nov. (Figs. 7~10)

Holotype worker. TL 3.1, HL 0.83, HW 0.80, CI 97, SL 0.73, SI 91, EL 0.10, PW 0.50, AL 0.88, PL 0.33, PH 0.26, DPW 0.15, PPL 0.23, PPH 0.28, PPW 0.21, PI 46, PPI 94. Head nearly square, about as broad as long, widened forward. In full face view, occipital margin slightly concave, occipital corners rounded, lateral sides weakly convex. Mandible rectangular, inner margin with one tooth in the middle, masticatory margin with 3 teeth and a diastema, arranged as apical tooth, preapical tooth, diastema and basal tooth. Central notch of anterior margin of clypeus deep and U-shaped, its depth about 2/5 of clypeus length. Lateral sides of the central notch formed a pair of acute teeth. Anterolateral border of clypeus with two denticles. Frontal carinae absent, antennal sockets completely exposed. Antenna 9-segmented, scape surpassed occipital corner by 1/5 of its length, antennal club consisted of 3 apical segments. Eyes relatively smaller and prominent outside the lateral sides of head, with 6 ommatidia along the maximum diameter. In profile view, pronotum weakly convex. Promesonotal suture absent. Mesonotum sloped backward and angularly prominent at posterior 1/3. Metanotal groove depressed. Propodeal spines strong and acute, dorsum of propodeum straight. Propodeal lobes small and angularly prominent at apices. In profile view, petiole without subpetiolar process. Petiolar node relatively high and thin, weakly narrowed upward, dorsum moderately convex, anterodorsal corner higher than posterodorsal corner. Anteroventral corner of postpetiole rightly angled, postpetiolar node inclined posteriorly, as high as petiolar node.

Apical 1/4 of mandible smooth and shining, basal 3/4 finely longitudinally striate. Clypeus smooth and shining. Head and alitrunk sparsely coarsely and longitudinally striate. Lateral sides of mesothorax, metathorax and propodeum smooth and shining, with very sparse longitudinal striations. Dorsum of propodeum smooth. Lower portions of petiole and postpetiole finely reticulate, petiolar node and postpetiolar node smooth and shining. Gaster smooth and shining. Dorsal surfaces of head and body with abundant erect or suberect long hairs and subdecumbent short hairs. Scapes and tibiae with abundant subdecumbent long hairs and decumbent short hairs. Head, mandibles, antennae and alitrunk brown. Legs, petiole and postpetiole yellowish brown. Gaster black, anterior face and apex blackish brown.

Holotype: worker, No. A2826, 2500 m, Ailao Mountain Nature Reserve, Jinshan Pass, Gasa Town, Xinping County, **Yunnan** Province, 15-**III**-2003, collected by Mr. XU Zheng-hui in a ground sample in the primary sub-alpine moist evergreen broadleaf forest.

This new species is close to *P. monticola* de Andrade, but central notch of clypeus quite deep, its depth about 2/5 of clypeus length. Anterolateral border of clypeus with 2 denticles. In profile view, mesonotum angularly prominent at posterior 1/3. Dorsum of propodeum straight. Gaster black.



Figs. 1~10 *Perissomyrmex* workers

1~3. *P. snyderi* Smith; 4~6. *P. monticola* de Andrade; 7~10. *P. fissus* sp. nov.; 1,4,7. Head in full face view; 2,5,8. Body in profile view; 3,9. Mandible in dorsal view; 6,10. Alitrunk, petiole and postpetiole in dorsal view. 1~3. After M. R. Smith (1947); 4~6. After Baroni Urbani and de Andrade (1993)

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世界奇蚁属第三种记述

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本文记述在云南省哀牢山自然保护区采集的世界奇蚁属 *Perissomyrmex* Smith 第 3 种——裂唇奇蚁 *P. fissus* sp. nov.，奇蚁属为中国新记录属。编制了史奈德奇蚁 *P. snyderi* Smith，山地奇蚁 *P. monticola* de Andrade，裂唇奇蚁 *P. fissus* sp. nov. 工蚁分种检索表。

裂唇奇蚁 *Perissomyrmex fissus*，新种（图 7~10）

正模：工蚁，哀牢山自然保护区，云南省金平县嘎洒镇金山丫口，2003-III-15，徐正会采于中山湿性常绿阔叶林原始林地表样内。

本新种与山地奇蚁 *P. monticola* de Andrade 接近，但是唇基中央切刻很深，达到唇基长度的 2/5，唇基前侧缘具 2 个小齿。侧面观中胸背板后部 1/3 处角状隆起。并胸腹节背面平直。腹部黑色。

关键词：膜翅目；蚁科；奇蚁属；分类