THREE NEW SPECIES AND A NEW RECORD SPECIES OF TRIBE PRENOLEPIDINI (HYMENOPTERA; FORMICIDAE) FROM GUANGXI, CHINA

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Abstract Three new species of tribe Prenolepidini from Guangxi, China, are described, i.e. Prenolepis sphingthuraxa sp. nov. Prenolepis umbra sp. nov. and Paratrechina opisopthalmia sp. nov. A newly recorded species i.e. Paratrechina aseta (Forel) is reported.

Key words Hymenoptera, Formicidae, Prenolepidini, new species

The genus Prenolepis was erected by Mayr in 1861, based on the type-species P. nitens (Mayr 1853)(= Tapinoma nitens Mayr 1853). This genus is one of the smallest genera in the subfamily Formicidae, including 9 species and 9 varieties (Bolton 1995), among them 3 species distribute over the Oriental region and 2 species over the Indo-Australian region. The genus Paratrechina was erected by Motschulsky in 1863, based on the type-species P. longicornis (Latreille 1802)(=Formica longicornis Latreille 1802). The genus is one of the largest genera in the subfamily, including 107 species, among them 14 species distribute over the Oriental region and 22 species over the Indo-Australian region (Bolton 1995). The two genera belong in the tribe Prenolepidini. When the authors study the ants of Zhuang Autonomous Region of Guangxi, two new species belonging to the genus Prenolepis Mayr, one new species and a newly recorded species belonging to the genus Paratrechina Motschulsky are discovered. Descriptions of them are presented as below. The holotype specimens are deposited in the Institute of Zoology, Shaanxi Normal University, Xi'an, and the paratype specimens are deposited in the Department of Biology, Guangxi Normal University, Guilin. The measurements and indices used in this paper are as defined by Holldobler and Wilson (1990). All the measurements are expressed in millimeters, and the indices are expressed in percentage.

1 Prenolepis sphingthuraxa sp. nov. (Figs. 1,2)

Holotype worker; TL 3.4, HL 0.85, HW 0.72, CI 84, SL 1.20, SI 166, PW
Head oval, sides and occipital border convex, the latter with a small shallow notch in the middle. Mandible narrowly elongated, with 6 teeth on its masticatory border. Clypeus convex, not carinated, its anterior border archedly concave. Frontal area indistinct. Antennae very long, scape extending a little more than half of its length beyond occipital border of head. Compound eyes moderately convex, placed anterior on head. Alitrunk long and slender; pronotum slightly convex; mesonotum feebly concave in profile, strongly constricted behind where it joins posterior portion; meso-propodeal groove deeply and narrowly impressed; propodeum very convex above as hemispherical mass. Petiole thick at base, rounded at tip, anterior face short and slightly concave, posterior face long and slightly convex. Gaster short and broad, very convex above, anterior face with an impression for accommodation of petiole. Shining; head and gaster with densely small punctures and sparsely large piligerous punctures, less shining than pronotum; mesonotum, mesopleurae and propodeum with longitudinal delicate striatures. Hairs yellow; moderately abundant on head and on gaster, not blunt at tips; pronotum each with 2 pairs of long hairs and a few short hairs; propodeum and petiole with a few short hairs, no long hair. Pubescence absent on body, abundant on antennae and on legs. Head orange brown; alitrunk, petiole and basal portion of first segment of gaster clear yellow, remainder of gaster dark brown. Apical part of antennal scape, funiculi and legs yellow.

Paratypes 11 workers: TL 3.4-3.8, HL 0.78-0.85, HW 0.68-0.72, CI 83-87, SL 1.12-1.20, SI 164-166, PW 0.50-0.55, AL 1.25-1.28, ED 0.17-0.20.

Holotype worker, Huaping Natural Conservation, Zhuang Autonomous Region of Guangxi, Jul. 6, 1995, collected by Shanyi Zhou. Paratypes 11 workers, at the same location as holotype, Jul. 5-9, 1995, collected by Shanyi Zhou.

This new species is closely related to P. emmae (Forel), but differs from the latter in: anterior clypeal border archedly concave; mesonotum, mesopleurae and propodeum with longitudinally delicate striatures; mesonotum, propodeum and petiole pilose; hairs on body not very long and not curved.

2 Prenolepis umbra sp. nov. (Figs. 3,4)

Holotype worker: TL 3.8, HL 0.83, HW 0.66, CI 79, SL 1.16, SI 175, PW 0.50, AL 1.25, ED 0.18.

Head oval, narrower posteriorly than in front, sides and occipital border convex. Mandible narrowly elongated, with 6 teeth on its masticatory border. Clypeus convex, anterior border slightly convex, not carinated. Antennae very long, scape ex-
tending a little more than half of its length beyond occipital border of head. Compound eyes moderately large and convex, placed anterior on head. Pronotum flat above; mesonotum oblique backward, strongly constricted behind where it joins posterior portion; basal face of propodeum slightly convex, elevated posteriorly, declivous face obliquely truncate, conjunction between them roundedly angular. Petiole triangular in profile, anterior face short and straight, posterior face long and slightly convex, tip acute; upper border rounded in dorsal. Gaster longitudinally oval, convex above, anterior face concave. Mandibles longitudinally striate. Head, alitrunk and gaster densely reticulate and opaque except mesoplurae which feebly striate and slightly shining. Hairs reddish brown, on gaster and on anterior portion of head long, on vertex and on alitrunk very short, absent on propodeum; pronotum with 2 pairs, mesonotum with a pair of hairs. Pubescence abundant on whole body, denser on head and on gaster. Antennal scapes and hind tibiae with sparse short suberect hairs and dense pubescence. Head orange brown, darker on vertex; alitrunk and petiole castaneous brown; gaster blackish brown. Mandibles, clypeus, antennae and legs yellowish brown.

Paratypes 3 workers: TL 3.4-4.0, HL 0.83-0.87, HW 0.66-0.68, CI 78-79, SL 1.22-1.25, SI 183-184, PW 0.50-0.55, AL 1.32-1.38, ED 0.16-0.18.

Holotype worker, Huaping Natural Conservation, Guangxi July 5, 1995, collected by Shanyi Zhou. Paratypes 3 workers, data as holotype.

This new species resembles P. emmae (Forel) in body form, but differs from the latter in: head narrower posteriorly than in front; whole body densely and coarsely reticulate and opaque; basal face of propodeum slightly convex, not very convex as hemispherical mass; body color different.

3 Paratrechina opisophalmia sp. nov. (Figs. 5, 6)

Holotype worker: TL 3.3, HL 0.85, HW 0.66, CI 77, SL 0.97, SI 146, PW 0.52, AL 1.10, ED 0.22.

Head oval, longer than broad, sides and occipital border convex. Mandible with 7 teeth on its masticatory border. Clypeus convex, anterior border rounded. Antennal scapes extending about one-thirds of their length beyond occipital border of head. Compound eyes large, slightly convex, placed posterior on head. Three ocelli small. Alitrunk stout; pronotum and mesonotum forming a convexity; meso-propodeal groove deeply impressed; basal face of propodeum slightly convex and shorter than declivious face, the latter obliquely truncate, conjunction between them rounded. Petiole subtriangular in profile, inclined forward, its anterior face slightly concave,
shorter than posterior face which is long and slightly convex; upper border transverse in dorsal. Gaster broadly oval, convex above, anterior face concave. Mandibles feebly longitudinally striate. Head, alitrunk and gaster feebly reticulate, slightly shining. Reticulations coarser on head, feebler on alitrunk, feebler but denser on gaster than on head. Hairs redish brown, abundant on head and on gaster; pronotum and mesonotum each with 2 pairs of long hairs and a few short hairs. Pubescence delicate and short, abundant on whole body. Head brownish orange, darker on vertex; alitrunk and petiole yellowish brown; mandibles, clypeus, antennae and legs yellow, gaster blackish brown.

Figs. 1-6 *Prenolepis* and *Paratrechina* workers.

1, 2. *Prenolepis sphingthoraxa* sp. nov.; 3, 4. *Prenolepis umbra* sp. nov.; 5, 6. *Paratrechina opisopthalmia* sp. nov.; 1, 3, 5. head in frontal; 2, 4, 6. body in profile.

Paratypes 14 workers; TL 3.2-3.5, HL 0.81-0.85, HW 0.63-0.67, CI 76-78, SL 0.91-0.98, SI 144-148, PW 0.51-0.55, AL 1.05-1.10, ED 0.21-0.23.

Holotype worker, Huaping Natural Conservation, Zhuang Autonomous Region of Guangxi, Jul. 5, 1995, collected by Shanyi Zhou. Paratypes: 9 workers, data as holotype; 4 workers, Daming Mountain Natural Conservation, Zhuang Autonomous Region of Guangxi, Oct. 10, 1995; 1 worker, Dayao Mountain Natural Conservation, Zhuang Autonomous Region of Guangxi, Sep. 24, 1995. All the specimens were collected by Shanyi Zhou.

This new species is a special one and not related to any known species of the genus in its compound eyes placed posterior on head (distance between posterior border of eye and occipital border 0.40 mm, that between anterior border of eye and an-
terior corner of head 0.70 mm). This character violating that of the genus *Paratrechina* Motschulsky and resembles that of some species of the genus *Prenolepis* Mayr. It clearly belong to the genus *Paratrechina* because of: mesothorax not constricted in profile; antennal scapes extending much less than half of their length beyond occipital border of head; hairs blunt at tips and arranged in pairs on head and on alitrunk.

4 *Paratrechina aseta* (Forel) new record from China

*Prenolepis aseta* Forel, 1902d; 292. Bingham, 1903; 332.
*Paratrechina aseta* Emery, 1925b; 219.

Distribution: Huaping Natural Conservation, Zhuang Autonomous Region of Guangxi.

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广西前结蚁族三新种—新纪录种

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本文记述广西前结蚁族三新种及一国内新纪录种。束胸前结蚁 *Prenolepis sphingobracta* sp. nov. 与埃氏前结蚁 *P. emmae* (Forel) 极近似，主要区别为：唇基前缘弧形凹陷，胸背板、胸侧板及并胸腹节具纵长精细刻纹；胸背板、并胸腹节及结节具立毛，体毛不特别长，也不弯曲。前结蚁 *Prenolepis umbra* sp. nov. 与埃氏前结蚁 *P. emmae* (Forel) 体型相似，主要不同在于：头后部窄于前部，全身具皱密网状刻点，无光泽；并胸腹节基面微凸，但不呈球形极片；体色不同。后眼立毛蚁 *Paratrechina opisophalma* sp. nov. 是该属中的一个特殊种，其复眼位于头中线之后（眼后缘距后头缘 0.40 mm，眼后缘距前侧角 0.70 mm）可区别于任何一个已知种。此特征与属征相悖，而与前结蚁属的多种种类这一特征相似。然而本种中胸侧观不缩缩，触角柄节超过后头缘部分远不足柄节自身长的 1/2，立毛端部钝；在头和并胸腹成对排列，显然属于立毛蚁属。可作为两属之间的一个过渡种。无刚毛立毛蚁 *Paratrechina aseta* (Forel) 新纪录，分布：广西花坪自然保护区。