

A SYSTEMATIC STUDY ON CHINESE SPECIES OF THE ANT GENUS
OLIGOMYRMEX MAYR (HYMENOPTERA, FORMICIDAE)

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Abstract Eighteen species of the ant genus *Oligomyrmex* Mayr have been recorded in China. Among them, 8 new species are described from Yunnan Province. Keys are provided for soldiers and workers respectively and the taxonomic history of Chinese species of the genus is reviewed. The 18 known species are: *O. capreolus* Wheeler, *O. altinodus* sp. nov., *O. curvispinus* sp. nov., *O. striatus* sp. nov., *O. acutispinus* sp. nov., *O. wheeleri* Ettershank, *O. obtusidentus* sp. nov., *O. bihornatus* sp. nov., *O. polyphemus* Wheeler, *O. sauteri* Forel, *O. taiponicus* Wheeler, *O. rectidorsus* sp. nov., *O. hunanensis* Wu et Wang, *O. reticapitus* sp. nov., *O. pseudolusciosus* Wu et Wang, *O. lusciosus* Wheeler, *O. jiangxiensis* Wu et Wang and *O. amius* Forel.

Key words Hymenoptera, Formicidae, *Oligomyrmex*, systematics, China.

The ant genus *Oligomyrmex* Mayr is distributed throughout the world tropics and subtropics. Ettershank reviewed the genus in 1966. 93 species were recorded worldwide, including 21 species found in the Oriental Region (Bolton, 1995a, b). Subsequently, Wu et al. (1995) described 3 new species from China and Terayama (1996) described 4 species from Japan. To date, 100 species are known worldwide including 28 species in the Oriental Region.

In China, Forel (1912) firstly described *O. sauteri* from Taiwan Province. The following year he (Forel, 1913) reported a second species known only from queen, *O. amius*, also collected in Taiwan. Later, Wheeler (1928) described 3 species and 2 subspecies in China, namely *O. lusciosus*, *O. polyphemus*, *O. silvestrii*, *O. silvestrii taiponicus*, and *O. capreolus laeviceps*. Since *O. silvestrii* Wheeler, 1928 is a junior secondary homonym of *O. silvestrii* Santschi, 1914, Ettershank (1966) proposed *O. wheeleri* as a replacement name for *O. silvestrii* Wheeler. In 1995, Bolton raised *O. silvestrii taiponicus* to specific status. In 1995, Wu et al. described 3 species from China, namely *O. hunanensis*, *O. jiangxiensis*, and *O. pseudolusciosus*. It is noticeable that, according to the descriptions of Wu et al., the illustrations of the 3 species are not correct with respect to tooth numbers of the mandible, eye volume and position, and cephalic indices (CI). These mistakes have been corrected in this paper. Tang et al. (1995) re-

ported the distribution of *O. sauteri* as being Zhejiang, Taiwan and Hunan Provinces, but according to the figure and description provided their identification of this species is not correct. Consequently, their distribution data was not accepted in this study. In 2001, Zhou reported *O. cribriceps* (Wheeler) as a newly record species for China. However, after a comparison of the figures of *O. cribriceps* drawn separately by Wheeler (1927) and Zhou (2001), it is obvious that Zhou's figures represent a not yet described species of *Oligomyrmex*. Furthermore, the species *O. cribriceps* (Wheeler) should be transferred from *Oligomyrmex* to the genus *Pheidole* according to Wheeler's figures of the soldier and worker. In this study, 8 new species of *Oligomyrmex* were described from Yunnan Province. Up to date, 18 species of this genus are known in China with *O. amius* Forel known only from the queen caste.

Standard measurements and indices are as defined in Bolton (1994): 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. Another 3 measurements were added as PL-Petiole length. Horizontal length of the petiole from its anterior apex to posterior apex in profile view, PH-Petiole height. Vertical height of the petiole from top of the node to its ventral surface in profile view, DPW-Dorsal petiole width. Maximum width of petiole in dorsal view. All

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measurements are in mm.

The type specimens are deposited in the Insect Collection, Faculty of Conservation Biology, Southwest Forestry College, Kunming, Yunnan Province, China.

Oligomyrmex Mayr

Oligomyrmex Mayr, 1867. *Tijdsch. Entomol.*, (2) 2 (10): 110.

Type-species: *Oligomyrmex concinnus*, by monotypy.

Diagnosis of genus. Workers dimorphic, allowing a division of the worker caste into a smaller worker group and a larger soldier group. TL 1.0-4.5 mm. Eyes weakly developed, from 0-28 ommatidia. One or more ocelli occasionally developed in the soldiers. Antennae 8-11 segments, with a distinct 2-segmented club. In some species, the soldiers may have one more antennal segment than workers in the same nest series. Palpal formula 2, 2 or 1, 2. Mandible with 3-6 teeth. Clypeus with median area well defined, inserted between the frontal carinae, with rugae on the frontal carinae continuing to the anterior margin of the clypeus. Median seta absent, paracarinial and intercarinial setae fairly well developed. Frontal carinae covering the antennal sockets and often bases of the scapes. Head of soldier often bearing a pair of short forwardly directed cornicles or transverse ridges on the occipital lobes. Promesonotal suture usually definite only laterally to the height of the spiracle. Metanotal groove distinct and deeply impressed on the dorsum. Propodeum rounded, sharply angulate or dentate, propodeal carinae lamellar. Propodeal spiracle usually rounded. Petiole pedunculate, node distinct, subpetiolar process stoutly dentate. Postpetiole with distinct node but lower in profile. Anterior margin of first gastric segment sometimes concave in the middle and with forward produced lateral lobes. Color yellow to deep brown. (A simplified description from Ettershank's original description in 1966).

Key to Chinese species of *Oligomyrmex* based on soldier caste

1. Antenna 11-segmented 2
Antenna 9-segmented 5
2. Mandible with 5 teeth. Propodeum bluntly angled 3
Mandible with 6 teeth. Propodeum protrudingly dentate 4
3. Head much longer than broad. Occiput with developed horns. Eyes absent (Figs. 1-3) (China: Maccau; Vietnam)
..... *O. capreolus* Wheeler
Head slight longer than broad. Occiput with minute horns. Eyes present (Figs. 5-6) (China: Yunnan Province)
..... *O. altinodus* sp. nov.
4. Eyes absent. Propodeal dents down-curved. First gastric segment densely finely punctuate (Figs. 9-10) (China: Yunnan Province)

- *O. curvispinus* sp. nov.
Eyes Present. Propodeal dents dorsoposteriorly pointed. First gastric segment densely longitudinally striate (Figs. 13-15) (China: Yunnan Province) *O. striatus* sp. nov.
5. Occiput with a pair of distinct horns 6
Occiput without a pair of distinct horns 13
6. Propodeum with a pair of protruding dents or spines 7
Propodeum without protruding dents or spines, posterodorsal corner rounded or bluntly angled 9
7. Occiput without transverse striations. Metanotal groove shallowly impressed. Body smaller with TL 1.4 mm (Figs. 16-17) (China: Yunnan Province) *O. acutispinus* sp. nov.
Occiput with transverse striations. Metanotal groove deeply impressed. Body larger with TL 2.1-2.6 mm 8
8. Mandible with 4 teeth. Anterior margin of median portion of clypeus straight (China: Hongkong) *O. wheeleri* Ettershank
Mandible with 5 teeth. Anterior margin of median portion of clypeus concave (Figs. 20-21) (China: Yunnan Province)
..... *O. obtusidentus* sp. nov.
9. Occipital horns connected by a developed transverse ridge. Promesonotum moderately convex (Figs. 24-25) (China: Yunnan Province)
..... *O. bihornatus* sp. nov.
Occipital horns not connected by a developed transverse ridge. Promesonotum strongly convex 10
10. Occiput without transverse striations. Body larger with TL 3.0-3.5 mm (China: Guangdong Province) ... *O. polyphemus* Wheeler
Occiput with transverse striations. Body smaller with TL 1.5-2.2 mm 11
11. In full face view lateral sides of head evenly convex. Anterodorsal corner of propodeum prominent and formed an acute tooth just behind metanotal groove (Figs. 28-29) (China: Taiwan Province; Japan)
..... *O. sauteri* Forel
In full face view lateral sides of head nearly straight. Anterodorsal corner of propodeum not forming an acute tooth just behind the metanotal groove 12
12. Mandible with 4 teeth. Dorsum of propodeum convex. Body larger with TL 2.2 mm (China: Hongkong)
..... *O. taiponicus* Wheeler
Mandible with 5 teeth. Dorsum of propodeum straight. Body smaller with TL 1.4-1.7 mm (Figs. 32-33) (China: Yunnan Province)
..... *O. rectidorsus* sp. nov.
13. Head nearly square, about as long as broad. Eye with 16 facets. Head with 3 ocelli. Dorsum of alitrunk straight (Figs. 36-37) (China: Hunan Province) *O. hunanensis* Wu et Wang
Head rectangular, distinctly longer than broad. Eye with 1 facet. Head without ocelli. Dorsum of alitrunk not straight, promesonotum roundly convex and higher than propodeum 14
14. Propodeum with a pair of acute teeth. Head with fine reticulations (Figs. 38-39) (China: Yunnan Province)
..... *O. reticapitus* sp. nov.
Propodeum forming a right angle of 90° or an obtuse angle of more than 90°. Head smooth, at most sparsely punctured 15
15. Posterodorsal corner of propodeum formed a right angle of about 90° (Figs. 42-43) (China: Hubei and Anhui Provinces)
..... *O. pseudolusciosus* Wu et Wang
Posterodorsal corner of propodeum formed an obtuse angle of more than 90° 16
16. Occipital margin excised in the middle. Occiput without transverse striations (China: Guangdong Province)
..... *O. lusciosus* Wheeler
Occipital margin broadly and slightly excised. Occiput with trans-

verse striations (Figs. 44-45) (China; Jiangxi Province)
 *O. jiangxiensis* Wu et Wang

Key to Chinese species of *Oligomyrmex* based on worker caste

1. Antenna 11-segmented 2
 Antenna 9-segmented 4
2. Head nearly square, as long as broad. Eyes present each with 2 facets (Figs. 7-8) (China; Yunnan Province)
 *O. altinodus* sp. nov.
 Head nearly rectangular, distinctly longer than broad. Eyes absent 3
3. Occipital margin evenly concave. Lateral sides of head evenly convex. Propodeum without dents (Fig.4) (China; Macao; Vietnam)
 *O. capreolus* Wheeler
 Occipital margin slightly concave in the middle. Lateral sides of head straight. Propodeum with a pair of acute dents (Figs. 11-12) (China; Yunnan Province) *O. curvispinus* sp. nov.
4. Propodeum dentate 5
 Propodeum rounded or obtusely angled, not dentate 8
5. Body smaller with TL 0.8-0.9 mm. Dorsum of propodeum weakly depressed (Figs. 18-19) (China; Yunnan Province)
 *O. acutispinus* sp. nov.
 Body larger with TL > 1.0 mm. Dorsum of propodeum evenly convex 6
6. Body larger with TL 1.5-1.7 mm, HL 0.43-0.46 mm (China; Hunan Province) *O. hunanensis* Wu et Wang
 Body smaller with TL < 1.3 mm, HL < 0.40 mm 7
7. Body larger with PW 0.23-0.24 mm. Scape shorter with SI 68-71 (Figs. 22-23) (China; Yunnan Province)
 *O. obtusidentus* sp. nov.
 Body smaller with PW 0.18-0.21 mm. Scape longer with SI 73-75 (Figs. 40-41) (China; Yunnan Province)
 *O. reticapitus* sp. nov.
8. Eyes absent 9
 Eyes present each with 1 facet 10
9. Head nearly square, very slightly longer than broad. Metanotal groove distinctly impressed (China; Guangdong Province)
 *O. lusciosus* Wheeler
 Head rectangular, distinctly longer than broad. Metanotal groove slightly impressed (Figs. 26-27) (China; Yunnan Province)
 *O. bihornatus* sp. nov.
10. Head very finely punctate-reticulate and subopaque (China; Hongkong) *O. wheeleri* Ettershank
 Head smooth and shining 11
11. Occipital margin straight (Figs. 30-31) (China; Taiwan Province; Japan) *O. sauteri* Forel
 Occipital margin weakly concave in the middle 12
12. Body in color light yellow. Head longer with HL 0.35-0.38 mm (Figs. 34-35) (China; Yunnan Province)
 *O. rectidorsus* sp. nov.
 Body in color yellow to reddish yellow. Head shorter with HL < 0.35 mm 13
13. Body in color yellow. Head broader with HW 0.31-0.32 mm. Body larger with AL 0.32-0.35 mm (China; Jiangxi Province)
 *O. jiangxiensis* Wu et Wang
 Body in color reddish yellow. Head narrower with HW 0.28-0.31 mm. Body smaller with AL 0.27-0.30 mm (China; Hubei and Anhui Provinces) *O. pseudolusciosus* Wu et Wang

Descriptions of New Species

1 *Oligomyrmex altinodus* sp. nov. (Figs.5-8)

Holotype soldier. TL 3.7, HL 1.05, HW 0.95, CI 90, SL 0.50, SI 53, PW 0.58, AL 0.90, PL 0.45, PH 0.35, DPW 0.28. Head slightly longer than broad, roughly trapezoid in full face view and moderately narrowed forward. Occipital margin moderately concave. Occipital corners roundly prominent. Lateral sides slightly convex. Mandible with 5 teeth. Median portion of clypeus depressed longitudinally, bicarinate and divergent forward, anterior margin nearly straight. Antenna 11 segments with a 2-segmented club, apex of scape reached to 4/7 of the distance from antennal socket to occipital corner. Eye with 7 facets. In profile view, occiput with a pair of minute horns. Dorsum of head evenly convex. Promesonotum roundly convex. Promesonotal suture distinct. Mesonotum with a transverse furrow, posterior portion prominent and forming a transverse ridge behind the furrow. Metanotum present and tongue-like. Metanotal groove impressed. Propodeum with posterodorsal corner bluntly angled, dorsum straight and depressed longitudinally in the middle, declivity concave. Petiole pedunculate anteriorly, ventral face straight, anteroventral corner with a rightly angled tooth. Petiolar node narrow and high, anterior and posterior faces steeply sloped, dorsal face narrow and convex. Postpetiolar node roundly and anterodorsally convex, lower than petiolar node. In dorsal view, petiolar node width: postpetiolar node width = 1.0:1.2, petiolar node transverse, postpetiolar node semicircular. Anterior border of gaster deeply concave in the middle in order to accept postpetiole.

Mandibles and median portion of clypeus smooth and shiny. Head densely and largely punctate, distance between punctures about equal to diameter of a puncture. Punctures on dorsum of head much denser. Anterior 1/3 of head longitudinally striate. Dorsum of promesonotum sparsely punctate, lateral sides of pronotum smooth and shining. Lateral sides of mesonotum, metanotum, propodeum, petiole and postpetiole densely and finely punctate. Dorsal face of petiolar node smooth and shining. Gaster sparsely and largely punctate, distance between punctures about 2-3 times of the diameter of a puncture. Head and body with dense decumbent pubescences. Frontal carina with 4 long erect hairs. Mesonotum, petiolar node, postpetiolar node and apex of gaster with sparse erect hairs. Scapes and tibiae with dense decumbent pubescences, without erect hairs. Head and gaster blackish brown, alitrunk, petiole and postpetiole red-

dish brown. Mandibles, antennae and legs yellow.

Paratype soldiers. TL 3.6-4.5, HL 1.00-1.08, HW 0.90-1.00, CI 90-93, SL 0.50, SI 50-56, PW 0.53-0.63, AL 0.90-1.03, PL 0.40-0.45, PH 0.33-0.38, DPW 0.25-0.30 (5 individuals measured). As holotype, but occipital horns minute to absent, posterodorsal corner of propodeum bluntly angled to right-ly angled.

Paratype workers. TL 1.3-1.5, HL 0.38-0.43, HW 0.35-0.38, CI 88-100, SL 0.25-0.28, SI 67-79, PW 0.23-0.24, AL 0.40-0.43, PL 0.18-0.20, PH 0.15, DPW 0.09-0.10 (5 individuals measured). Similar to the holotype, but much smaller, head normal. Occipital margin weakly concave. Apex of scape reached to 5/6 of the distance from antennal socket to occipital corner. Eye with 2 facets. Occiput without horns. Promesonotum moderately convex. Promesonotal suture obsolete on the dorsum. Mesonotum without transverse furrow and ridge. Metanotum absent. Metanotal groove deeply impressed. Posterodorsal corner of propodeum rounded. Head, pronotum, petiolar node, postpetiolar node and gaster smooth and shining. Mesonotum, petiole and postpetiole without erect hairs. Head and body with short, sparse and depressed pubescences. Body yellow in color, head and gaster yellowish brown.

Holotype. soldier, No. A1194, 1 500 m, west slope of Ailaoshan, Wenchang Village, Huashan Town, Jingdong County, Yunnan Province, collected in the conifer-broadleaf mixed forest by Miss CHAI Zheng-Qun on 13 Apr. 2002. Paratypes: 15 soldiers and 15 workers, with same data as holotype.

This new species is close to *O. capreolus* Wheeler, but head nearly square, only slightly longer than broad. Occiput with minute horns. Eyes present.

2 *Oligomyrmex curvoispinus* sp. nov. (Figs.9-12)

Holotype soldier. TL 3.0, HL 0.93, HW 0.73, CI 78, SL 0.38, SI 52, PW 0.48, AL 0.85, PL 0.23, PH 0.23, DPW 0.23. Head distinctly longer than broad, in full face view nearly rectangular, slightly narrowed forward. Occipital margin moderately concave. Occipital corners rounded. Lateral sides nearly straight. Mandible with 6 teeth. Median portion of clypeus depressed longitudinally, bicarinate and divergent forward, anterior margin weakly concave. Antenna 11 segments with a 2-segmented club, apex of scape reached to 3/7 of the distance from antennal socket to occipital corner. Eyes absent. In profile view, occiput with a pair of small dent-like horns.

Dorsum of head straight. Promesonotum roundly convex. Promesonotal suture obsolete on the dorsum. Dorsum of mesonotum straight. Metanotum present, triangular and convex. Mesometanotal suture and metapropodeal suture present. Propodeum with a pair of laterally compressed stout dents which curve down at apex, dorsum weakly concave and down-sloping backward, declivity straight. Petiole pedunculate anteriorly, ventral face straight, anteroventral corner with an acute tooth. Petiolar node triangular, anterior face weakly concave, posterior face weakly convex, the top rightly angled. Postpetiolar node roundly convex and slightly lower than petiolar node. In dorsal view petiolar node as broad as postpetiolar node.

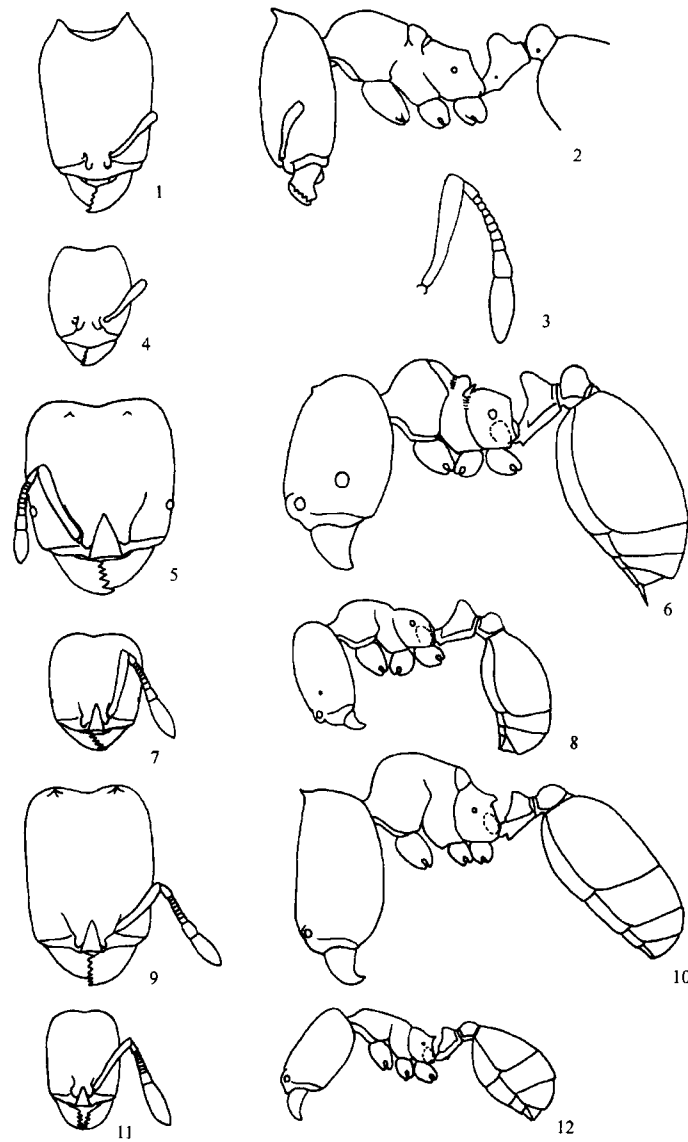
Mandibles and median portion of clypeus smooth and shiny. Head with anterior portion longitudinally striate, posterior portion finely reticulated. Alitrunk, petiole, postpetiole and gaster densely and finely punctate. Head and body with abundant suberect short hairs and dense decumbent pubescences. Scapes and tibiae with dense decumbent pubescences. Body color yellow, masticatory margin of mandible black.

Paratype soldiers. TL 3.3-3.6, HL 0.90-0.98, HW 0.70-0.75, CI 76-78, SL 0.35-0.38, SI 50-52, PW 0.48-0.50, AL 0.85-0.90, PL 0.23-0.25, PH 0.23, DPW 0.23-0.25 (5 individuals measured). As holotype.

Paratype workers. TL 1.3-1.4, HL 0.43, HW 0.30-0.33, CI 71-76, SL 0.25-0.28, SI 77-85, PW 0.20, AL 0.40-0.43, PL 0.13, PH 0.10, DPW 0.08 (5 workers measured). As holotype but much smaller, head normal. Occipital margin nearly straight, slightly concave in the middle. Mandible with 5 teeth. Apex of scape reaching 2/3 of the distance from socket to occipital corner. Promesonotum slightly convex, nearly straight. Metanotum absent. Metanotal groove shallowly impressed. Propodeum with a pair of acute straight teeth, dorsum weakly convex. Petiolar node thicker, with the top bluntly prominent. Anteroventral corner of petiole with a rightly angled tooth.

Holotype, soldier, No. A98-39, 1 270 m, Songshanling, Puwen Town, Jinghong County, Yunnan Province, collected in the warm conifer forest by Mr. HE Yun-Feng on 4 Mar. 1998. Paratypes: 13 soldiers and 14 workers, with same data as holotype.

This new species is close to *O. capreolus* Wheeler, but mandible with 6 teeth, occipital horns not connected by a transverse ridge, propodeum protrudingly dentate.



Figs. 1-12. *Oligomyrmex* soldiers and workers. 1-4. *O. capreolus* Wheeler. 5-8. *O. al-tinodus* sp. nov. 9-12. *O. curvispinus* sp. nov. 1-3, 5-6, 9-10. Soldiers. 4, 7-8, 11-12. Workers. 1, 4, 5, 7, 9, 11. Head in full face view. 2, 6, 8, 10, 12. Body in profile view. 3. Antenna in dorsal view. 1-4. After Wheeler (1927). Pilosity omitted.

3 *Oligomyrmex striatus* sp. nov. (Figs. 13-15)

Holotype soldier. TL 2.5, HL 0.78, HW 0.60, CI 77, SL 0.30, SI 50, PW 0.43, AL 0.75, PL 0.25, PH 0.23, DPW 0.28. Head longer than broad, roughly rectangular and moderately narrowed forward. Occipital margin moderately concave, occipital corners rounded. Lateral sides straight. Mandible with 6 teeth. Median portion of clypeus depressed longitudinally, bicarinate and divergent forward, anterior margin concave. Antenna 11 segments with a 2-segmented club, apex of scape reaching $3/7$ of the distance from socket to occipital corner. Eye minute with 1 facet. In profile view, occiput with a pair of short triangular

horns. Dorsum of head straight. Frontal lobes protruding. Promesonotum high and roundly convex. Promesonotal suture obsolete on the dorsum. Dorsum of mesonotum straight, suddenly down curved at posterior end. Metanotum present, narrow and acutely pointed backward. Mesometanotal groove impressed, metapropodeal groove present. Propodeum with a pair of strong teeth, dorsum concave and down sloping, declivity concave. Petiole pedunculate anteriorly, ventral face weakly depressed, anteroventral corner with an acute tooth, lateral side with a sharp horizontal ridge. Petiolar node triangular, anterior face slope, posterior face nearly vertical, dorsal face narrow and rounded.

Postpetiolar node roundly convex and lightly lower than petiolar node, lateral side also with a sharp horizontal ridge. In dorsal view, petiolar node as broad as postpetiolar node, both with quite developed roundly convex lateral ridges.

Mandibles and median portion of clypeus smooth and shiny. Head longitudinally striate, occiput with reticulations. Dorsum of pronotum and postpetiole with reticulations. Mesonotum finely longitudinally striate. Lateral sides of alitrunk, declivity of propodeum and petiole finely densely punctate. Dorsum of gaster densely and longitudinally striate, ventral face smooth. Head and body with dense erect or suberect hairs and dense decumbent pubescences. Scapes and tibiae with dense decumbent pubescences. Body color yellow. Antennae and legs light yellow. Gaster yellowish brown. Apical segments of gaster behind the first one lost.

Workers: unknown.

Holotype, soldier, No. A97-1925, 820 m, Nanyang Village, Shangyong Town, Mengla County, Yunnan Province, collected in secondary shrub vegetation by Dr. XU Zheng-Hui on 15 Aug. 1997.

This new species is close to *O. capreolus* Wheeler, but mandible with 6 teeth, eyes present, propodeum protrudingly dentate, dorsum of gaster densely longitudinally striate.

4 *Oligomyrmex acutispinus* sp. nov. (Figs. 16-19)

Holotype soldier. TL 1.4, HL 0.54, HW 0.40, CI 80, SL 0.23, SI 56, PW 0.23, AL 0.40, PL 0.15, PH 0.11, DPW 0.10. Body small. Head longer than broad, in full face view rectangular. Occipital margin moderately concave, occipital corners roundly prominent. Lateral sides nearly straight. Mandible with 5 teeth. Median portion of clypeus longitudinally depressed, bicarinate and divergent forward, anterior margin weakly concave. Antenna 9 segments with a 2-segmented club, apex of scape reaching to 1/2 of the distance from socket to occipital corner. Eye with 1 facet. In profile view, occiput with a pair of large acute horns. Dorsum of head weakly convex. Promesonotum high and roundly convex. Promesonotal suture obsolete on the dorsum. Metanotum absent. Metanotal groove shallowly impressed. Propodeum with a pair of acute teeth, dorsum convex at anterior portion and sloping down rearwards, declivity concave with narrow thin lateral laminae. Petiole pedunculate

anteriorly, ventral face straight. Petiolar node thick, anterior face gently sloping, posterior face steeply sloping, dorsal face roundly prominent. Postpetiolar node roundly convex and lower than petiolar node. In dorsal view, petiolar node as broad as postpetiolar node.

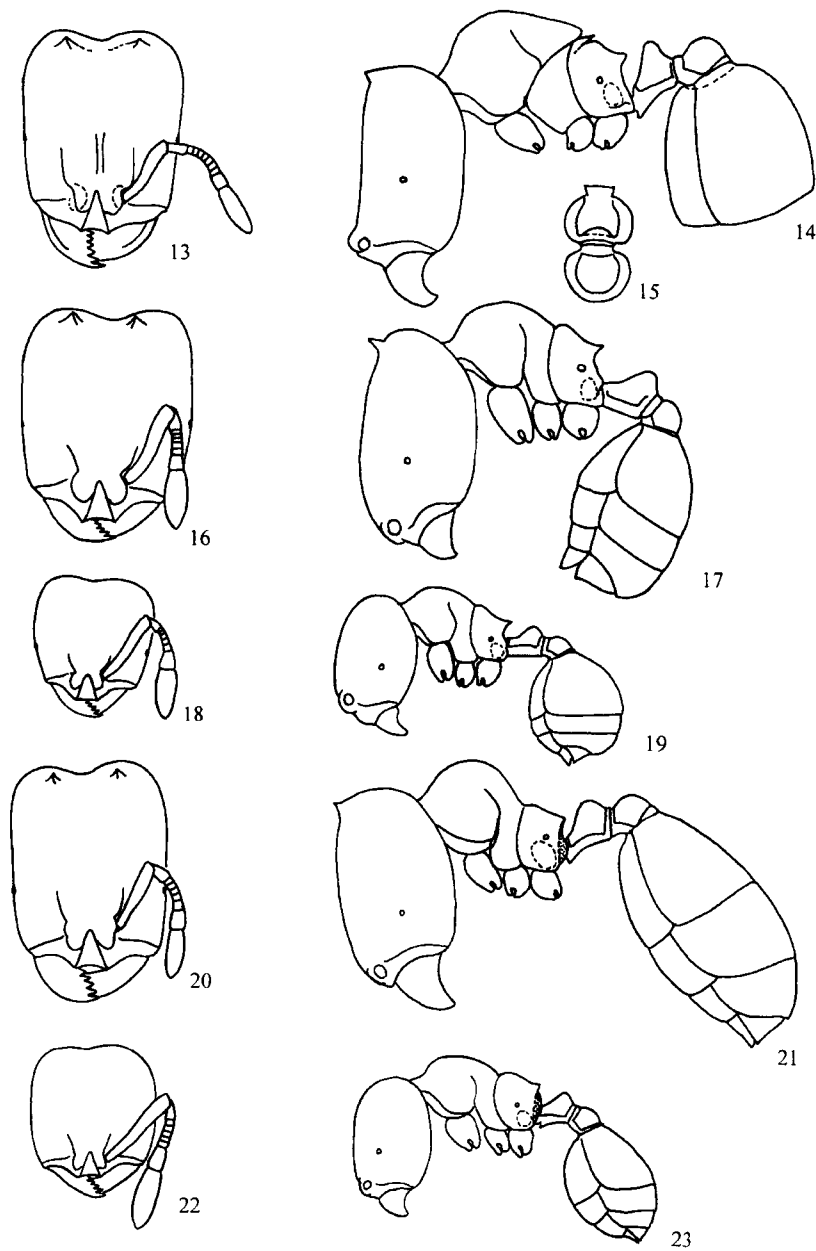
Mandibles and median portion of clypeus smooth and shiny. Head finely reticulate, anterior 3/4 of head dorsum and anterior 1/5 of genae finely longitudinally striate. Reticulations present between occipital horns but without transverse ridge or striations. Alitrunk, petiole and postpetiole densely and finely punctate, interspace appears as fine microreticulations. Gaster smooth and shiny. Head, alitrunk, petiole and postpetiole with sparse erect or suberect hairs and dense decumbent pubescences. Gaster with sparse suberect hairs and abundant decumbent pubescences. Frontal carina with 4 erect long hairs. Scapes and tibiae with dense decumbent pubescences. Head, alitrunk, petiole and postpetiole yellow. Antennae, legs and gaster light yellow.

Paratype soldier. TL 1.4, HL 0.53, HW 0.40, CI 76, SL 0.23, SI 56, PW 0.23, AL 0.38, PL 0.13, PH 0.11, DPW 0.10 (1 individual measured). As holotype.

Paratype workers. TL 0.85-0.93, HL 0.30-0.33, HW 0.28, CI 85-92, SL 0.18-0.19, SI 64-68, PW 0.18-0.20, AL 0.28-0.30, PL 0.09-0.10, PH 0.08-0.09, DPW 0.08 (5 individuals measured). As holotype, but body much smaller. Head nearly square, occiput without horns. Occipital margin shallowly concave in the middle, lateral sides weakly convex. Apex of scape reaching 2/3 of the distance from socket to occipital corner. In profile view, promesonotum weakly convex. Body in color light yellow.

Holotype soldier, No. A97-2591, 1380 m, Nangongshan, Mengla County, Yunnan Province, collected in the monsoon evergreen broadleaf forest by Dr. XU Zheng-Hui on 15 Sep. 1997. Paratypes 4 workers, with same data as holotype. 1 soldier, No. A97-954, 1120 m, Guanping Village, Mengyang Town, Jinghong County, Yunnan Province, collected in the mountain rain forest by Mr. HE Yun-Feng on 7 Aug. 1997.

This new species is close to *O. wheeleri* Ettershank, but occiput lacks transverse striations, mandible with 5 teeth, metanotal groove shallowly impressed, body smaller with TL 1.4 mm.



Figs. 13-23. *Oligomyrmex* soldiers and workers. 13-15. *O. striatus* sp. nov. 16-19. *O. acutispinus* sp. nov. 20-23. *O. obtusidentus* sp. nov. 13-15, 16-17, 20-21. Soldiers. 18-19, 22-23. Workers. 13, 16, 18, 20, 22. Head in full face view. 14, 17, 19, 21, 23. Body in profile view. 15. Petiole and postpetiole in dorsal view. Pilosity omitted.

5 *Oligomyrmex obtusidentus* sp. nov. (Figs. 20-23)

Holotype soldier. TL 2.6, HL 0.73, HW 0.58, CI 79, SL 0.30, SI 52, PW 0.33, AL 0.58, PL 0.23, PH 0.16, DPW 0.15. Head longer than broad, in full face view rectangular. Occipital margin moderately concave, occipital corners rounded. Lateral sides straight and parallel. Mandible with 5 teeth. Median portion of clypeus longitudinally depressed, bicarinate

and divergent forward, anterior margin concave. Antenna 9 segments with a 2-segmented club, apex of scape extending to 1/2 of the distance from socket to occipital corner. Eye with 1 facet. In profile view, occiput with a pair of acute small horns, dorsum of head lightly convex. Promesonotum high and roundly convex. Promesonotal suture obsolete on the dorsum. Metanotum absent. Metanotal groove deeply impressed. Propodeum with a pair of rightly angled teeth, dorsum straight and sloping down rearwards,

declivity concave with thin lateral laminae. Petiole pedunculate anteriorly, ventral face weakly concave, anteroventral corner acutely dentate. Petiolar node thick, anterior and posterior faces sloping, dorsal face roundly convex. Postpetiolar node roundly convex and lightly lower than petiolar node. In dorsal view, petiolar node about as broad as postpetiolar node.

Mandibles and median portion of clypeus smooth and shiny. Anterior 2/3 of head dorsum densely and finely striate, posterior 1/3 of head dorsum and lateral sides reticulate. Transverse striations present between occipital horns, but without a developed transverse ridge. Alitrunk and petiole densely punctate, interspace appearing as microreticulations. Postpetiole and gaster smooth and shiny. Head with dense suberect hairs. Alitrunk, petiole and postpetiole with sparse suberect hairs and dense decumbent pubescences. First segment of gaster with dense decumbent hairs, the other segments with decumbent hairs posteriorly. Scapes and tibiae with dense decumbent pubescences. Head yellowish brown. Alitrunk, petiole and postpetiole yellow. Antennae, tibiae and gaster light yellow.

Paratype soldiers. TL 2.1-2.6, HL 0.65-0.73, HW 0.53-0.58, CI 76-81, SL 0.28-0.33, SI 50-57, PW 0.28-0.33, AL 0.53-0.58, PL 0.21-0.25, PH 0.15-0.16, DPW 0.13-0.15 (5 individuals measured). As holotype, but occipital horns vary in size from minute to small.

Paratype workers. TL 1.2-1.3, HL 0.38-0.40, HW 0.33-0.34, CI 87-93, SL 0.23-0.25, SI 68-71, PW 0.23-0.24, AL 0.38, PL 0.13-0.15, PH 0.10, DPW 0.08-0.09 (5 individuals measured). As holotype, but much smaller. Head normal, nearly square, without occipital horns, occipital margin shallowly concave in the middle, lateral sides lightly convex. Apex of scape reached to 3/4 of the distance from socket to occipital corner. Posterior 1/2 of head dorsum reticulate. Promesonotum moderately convex. Propodeum with a pair of acute teeth, dorsum convex.

Holotype. soldier, No. A99-259, 2 000 m, west slope of Gaoligongshan, Daying Village, Jietou Town, Tengchong County, Yunnan Province, collected by Mr. FU Lei in the subalpine moist evergreen broadleaf forest on 2 May 1999. Paratypes: 4 soldiers and 3 workers, with same data as holotype. 1 soldier and 2 workers, with same data as holotype but No. A99-271.

This new species is close to *O. wheeleri* Etter-shank, but mandible has 5 teeth, anterior margin of

median portion of clypeus concave.

6 *Oligomyrmex bihornatus* sp. nov. (Figs.24-27)

Holotype soldier. TL 2.4, HL 0.70, HW 0.50, CI 71, SL 0.28, SI 55, PW 0.35, AL 0.63, PL 0.23, PH 0.18, DPW 0.16. Head longer than broad, in full face view roughly rectangular. Occipital margin deeply and roundly concave, occipital corners protruding into a pair of developed acute horns, a transverse ridge present on the occiput and connecting the 2 horns. Lateral sides moderately convex. Mandible with 5 teeth. Median portion of clypeus longitudinally depressed, bicarinate and divergent forward, anterior margin straight. Antenna 9 segments with a 2-segmented club, apex of scape reaching to 5/11 of the distance from socket to occipital corner. Eye with 4 facets. In profile view, occiput with a pair of well developed large acute horns. Dorsum of head straight. Promesonotum high and roundly convex. Promesonotal suture present. Mesonotum suddenly down curved at posterior end. Metanotum present but narrow, dorsally pointed. Mesometanotal suture and metapropodeal suture depressed. Propodeum with posterodorsal corner bluntly angled, dorsal face straight and down sloping backward, longitudinally depressed in the middle. Declivity straight and vertically depressed in the middle. Petiole pedunculate anteriorly, ventral face straight. Petiolar node thick, anterior and posterior faces sloping, dorsal face roundly prominent. Postpetiolar node roundly convex and lower than petiolar node. In dorsal view, petiolar node about as broad as postpetiolar node.

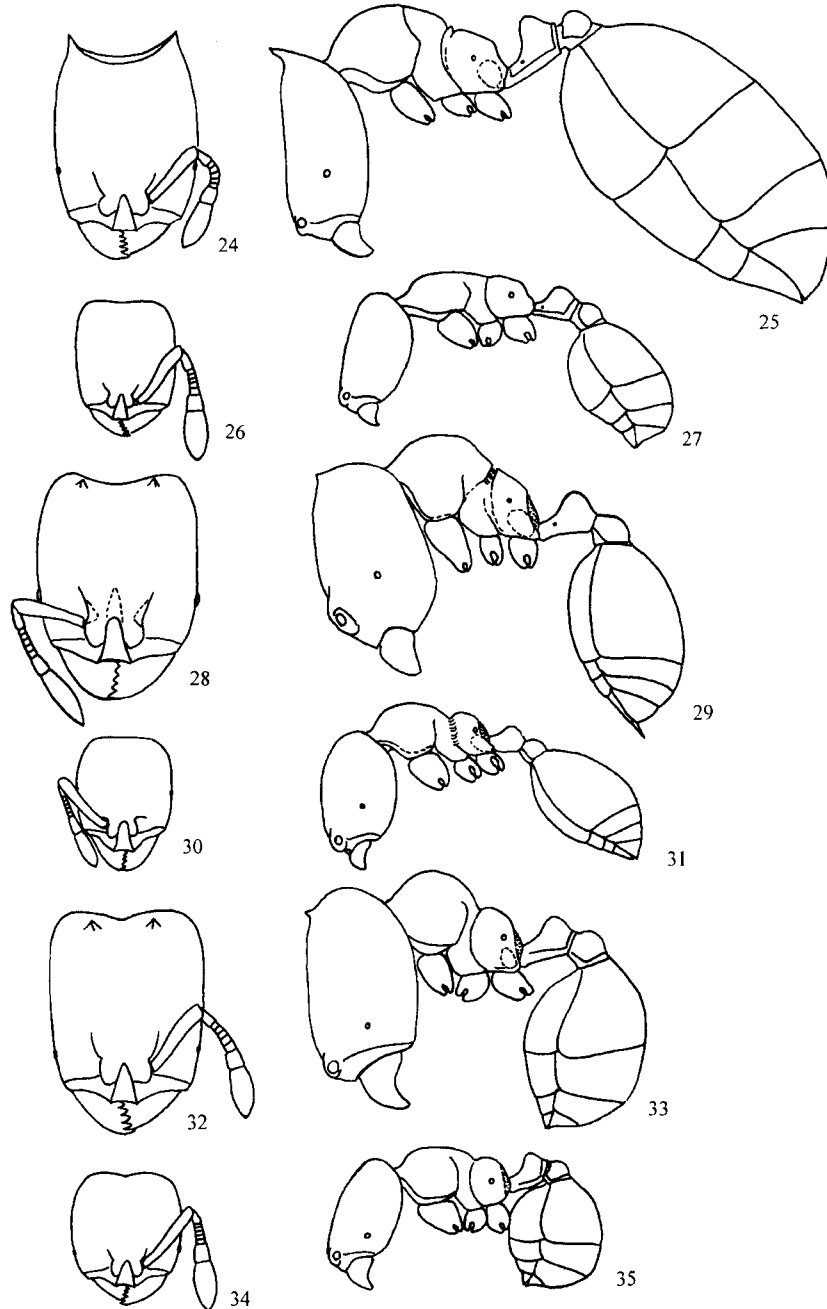
Mandibles and median portion of clypeus smooth and shiny. Head smooth and shiny, weakly and very sparsely punctate. Alitrunk, petiole, postpetiole and gaster smooth and shiny. Head, alitrunk, petiole and postpetiole with abundant erect or suberect hairs. Gaster with dense decumbent hairs. Scapes and tibiae with dense decumbent pubescences. Body color yellow. Masticatory margins of mandibles and eyes black.

Paratype soldiers. TL 2.1-3.1, HL 0.70-0.75, HW 0.50-0.53, CI 69-71, SL 0.28-0.30, SI 55-57, PW 0.33-0.35, AL 0.60-0.63, PL 0.23-0.25, PH 0.18-0.20, DPW 0.15-0.18 (5 individuals measured). As holotype.

Paratype workers. TL 1.1-1.2, HL 0.33-0.35, HW 0.26-0.28, CI 79-81, SL 0.20, SI 73-76, PW 0.18-0.20, AL 0.33-0.35, PL 0.09-0.10, PH 0.08-0.09, DPW 0.08 (4 individuals measured). As holotype, but much smaller. Head normal and rectangu-

lar. Occiput without horns, occipital margin slightly concave, occipital corners prominent. Lateral sides slightly convex. Apex of scape reaching $2/3$ of the distance from socket to occipital corner. Eyes absent.

Promesonotum weakly convex. Promesonotal suture obsolete on the dorsum. Metanotum absent. Head sparsely and finely punctured. Body color light yellow.



Figs. 24-35. *Oligomyrmex* soldiers and workers. 24-27. *O. bihornatus* sp. nov. 28-31. *O. sauteri* Forel. 32-35. *O. rectidorsus* sp. nov. 24-25, 28-29, 32-33. Soldiers. 26-27, 30-31, 34-35. Workers. 24, 26, 28, 30, 32, 34. Head in full face view. 25, 27, 29, 31, 33, 35. Body in profile view. 28-31. After Terayama (1996). Pilosity omitted.

Holotype, soldier, No. A98-1537, 1 000 m, east slope of Gaoligongshan, Mangkuan Village,

Mangkuan Town, Baoshan City, Yunnan Province, collected in the valley alsiun shrub tussock by Mr.

ZHAO Yuan-Chao on 7 Aug. 1998. Paratypes 4 soldiers and 4 workers, with same data as holotype. 10 soldiers, No. A98-1942, 1 000 m, east slope of Gaoligongshan, Bawan Village, Bawan Town, Baoshan City, Yunnan Province, collected in the valley alsum shrub tussock by Mr. LI Ji-Guai on 10 Aug. 1998.

This new species is close to *O. capreolus* Wheeler, but antenna with only 9 segments, eyes present, in profile view, dorsum of head straight.

7 *Oligomyrmex rectidorsus* sp. nov. (Figs.32-35)

Holotype soldier. TL 1.7, HL 0.63, HW 0.48, CI 76, SL 0.25, SI 53, PW 0.28, AL 0.45, PL 0.18, PH 0.13, DPW 0.10. Head longer than broad, in full face view rectangular, slightly narrowed forward. Occipital margin moderately and angularly concave in the middle, occipital corners roundly prominent. Lateral sides weakly convex. Mandible with 5 teeth. Median portion of clypeus longitudinally depressed, bicarinate and divergent forward, anterior margin weakly concave. Antenna 9 segments with a 2-segmented club, apex of scape reaching 1/2 of the distance from socket to occipital corner. Eye with 2 facets. In profile view, occiput with a pair of small acute horns, dorsum of head weakly convex. Promesonotum high and roundly convex. Promesonotal suture obsolete on the dorsum. Metanotum absent. Metanotal groove deeply impressed. Propodeum with posterodorsal corner roundly prominent, dorsum straight and sloping down rearwards, declivity concave with thin lateral laminae. Petiole pedunculate anteriorly, ventral face straight, anteroventral corner weakly and bluntly angled. Petiolar node thick, anterior and posterior faces sloping, dorsal face roundly prominent. Postpetiolar node roundly convex and lower than petiolar node. In dorsal view, petiolar node as broad as postpetiolar node.

Mandibles and median portion of clypeus smooth and shiny. Anterior 2/5 of head finely and longitudinally striate, middle portion smooth and shiny, occiput with sparse transverse striations. Transverse striations present between occipital horns, but without a developed ridge. Pronotum and mesonotum smooth and shiny. Lateral sides of mesothorax, metathorax, lateral sides of propodeum, petiole and postpetiole finely punctured. Dorsum of propodeum, dorsum of petiolar node, dorsum of postpetiolar node and gaster smooth and shiny. Head and body with abundant erect or suberect hairs and abundant decumbent pubescences.

Scapes and tibiae with dense decumbent pubescences. Body color yellow. Head brownish yellow. Masticatory margins of mandibles, eyes and occipital horns black.

Paratype soldiers. TL 1.4-1.7, HL 0.55-0.60, HW 0.43-0.46, CI 75-78, SL 0.23-0.25, SI 49-56, PW 0.24-0.25, AL 0.38-0.45, PL 0.15-0.18, PH 0.11-0.13, DPW 0.10 (5 individuals measured). As holotype.

Paratype workers. TL 1.1-1.2, HL 0.35-0.38, HW 0.30, CI 80-86, SL 0.20-0.23, SI 67-75, PW 0.20, AL 0.33-0.38, PL 0.13, PH 0.09-0.10, DPW 0.08 (5 individuals measured). As holotype, but body much smaller. Head normal and nearly square, slightly longer than broad, without occipital horns. Occipital margin shallowly concave in the middle, lateral sides of head moderately convex. Apex of scape reaching to 3/4 of the distance from socket to occipital corner. Eye with 1 facet. In profile view, promesonotum weakly convex. Head smooth and shining. Body color light yellow.

Holotype, soldier, No. A97-1956, 820 m, Nanqian Village, Shangyong Town, Mengla County, Yunnan Province, collected in secondary shrub vegetation by Dr. XU Zheng-Hui on 15 Aug. 1997. Paratypes 4 soldiers and 4 workers, with same data as holotype. 2 soldiers and 4 workers, with same data as holotype but No. A97-1867. 5 soldiers and 1 worker, with same data as holotype but No. A97-1950.

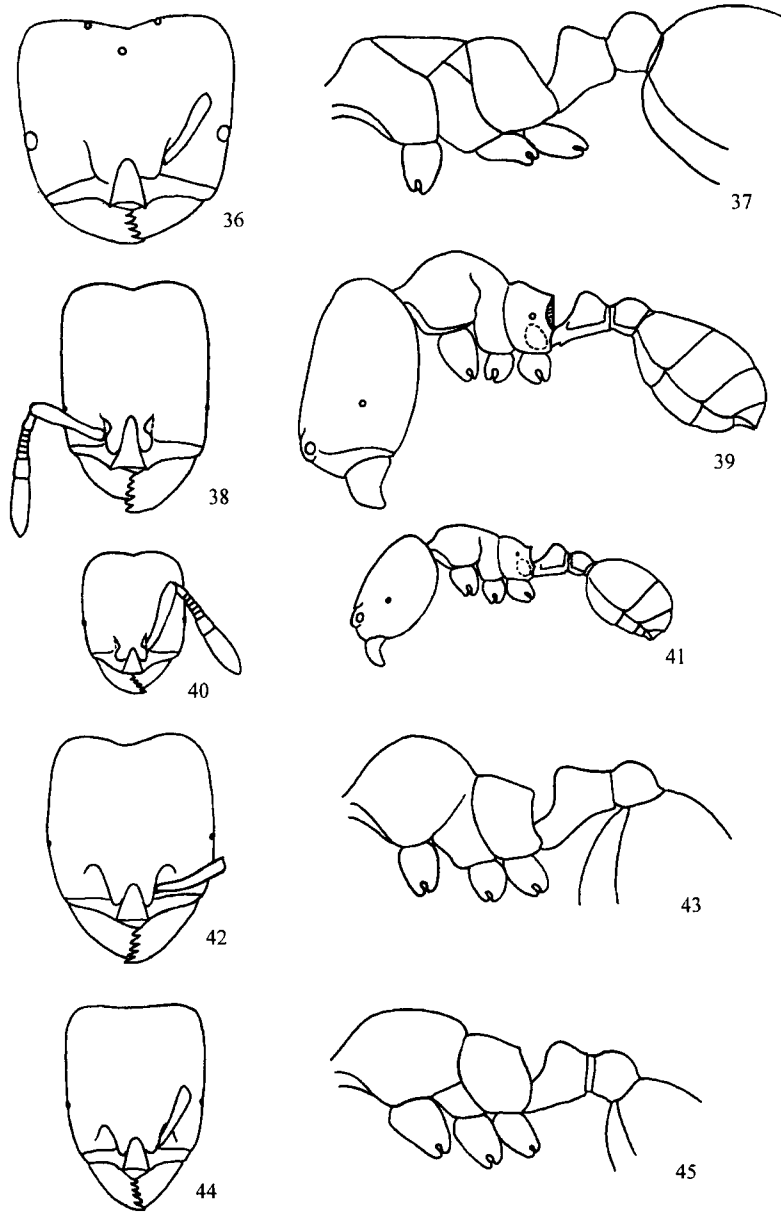
This new species is close to *O. taiponicus* Wheeler, but body smaller with TL 1.4-1.7 mm, mandible with 5 teeth, dorsum of propodeum straight, lateral sides of alitrunk finely punctured.

8 *Oligomyrmex reticapitus* sp. nov. (Figs.38-41)

Holotype soldier. TL 1.7, HL 0.58, HW 0.45, CI 78, SL 0.25, SI 56, PW 0.28, AL 0.45, PL 0.18, PH 0.13, DPW 0.13. Head longer than broad, in full face view rectangular. Occipital margin moderately and angularly concave, occipital corners roundly prominent. Lateral sides straight and parallel. Mandible with 5 teeth. Median portion of clypeus longitudinally depressed. Bicarinate and divergent forward, anterior margin nearly straight. Antenna 9 segments with a 2-segmented club, apex of scape reaching 5/9 of the distance from socket to occipital corner. Eye with 3 facets. In profile view, occiput without horns, dorsum of head slightly convex. Promesonotum high and roundly convex. Promesonotal suture obsolete on the dorsum. Metanotum absent. Metanotal groove

deeply impressed. Propodeum with a pair of acute teeth, dorsum straight and sloping down rearward, declivity concave with thin lateral laminae. Petiole pedunculate anteriorly, ventral face straight, anteroventral corner minutely toothed. Petiolar node thick, an-

terior and posterior faces sloping, dorsal face roundly prominent. Postpetiolar node roundly convex and lower than petiolar node. In dorsal view, petiolar node about as broad as postpetiolar node.



Figs. 36-45. *Oligomyrmex* soldiers and workers. 36-37. *O. hunanensis* Wu et Wang. 38-41. *O. reticapitus* sp. nov. 42-43. *O. pseudolusciosus* Wu et Wang. 44-45. *O. jiangxiensis* Wu et Wang. 36-37, 38-39, 42-43, 44-45. Soldiers. 40-41. Workers. 36, 38, 40, 42, 44. Head in full face view. 37, 39, 41, 43, 45. Body in profile view. 36-37, 42-43, 44-45. After Wu *et al.* (1995). Pilosity omitted.

Mandibles and median portion of clypeus smooth and shiny. Head finely reticulate, occiput finely and transversely striate. Alitrunk and petiole with microreticulations. Postpetiole and gaster smooth and shiny. Head and body with sparse suberect hairs and

dense decumbent pubescences. Scapes and tibiae with dense decumbent pubescences. Body in color yellow. Head brownish yellow.

Paratype soldiers. TL 1.5-2.0, HL 0.55-0.60, HW 0.40-0.48, CI 73-79, SL 0.20-0.28, SI 50-58,

PW 0.25-0.30, AL 0.43-0.48, PL 0.18-0.20, PH 0.13-0.15, DPW 0.11-0.13 (4 individuals measured). As holotype but eye with 1-3 facets.

Paratype workers. TL 1.1-1.2, HL 0.30-0.38, HW 0.28-0.30, CI 80-92, SL 0.20-0.23, SI 73-75, PW 0.18-0.21, AL 0.33-0.38, PL 0.11-0.13, PH 0.10, DPW 0.08-0.09 (5 individuals measured). As holotype but body much smaller. Head normal, slightly longer than broad and weakly narrowed forward, lateral sides weakly convex, occipital margin shallowly concave in the middle. Apex of scape reaching 2/3 of the distance from socket to occipital corner. Eye with 1 facet. Promesonotum weakly convex. Propodeum with a pair of small acute teeth, dorsum moderately convex. Body color yellow.

Holotype, soldier, No. A97-2282, 1 600 m, Pappo Village, Meng'a Town, Menghai County, Yunnan Province, collected in warm deciduous broadleaf forest by Dr. XU Zheng-Hui on 9 Sep. 1997. Paratypes: 5 workers, with same data as holotype. 1 soldier and 8 workers, with same data as holotype but No. A97-2247. 1 soldier and 5 workers, with same data as holotype but No. A97-2406, 1 280 m, collected on 10 Sep. 1997. 2 soldiers and 6 workers, with same data as holotype but No. A97-2376, 1 280 m, collected on 10 Sep. 1997.

This new species is close to *O. lusciosus* Wheeler, but head has fine reticulations, propodeum with a pair of acute teeth.

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中国稀切叶蚁属系统分类研究 (膜翅目, 蚁科)

徐正会

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摘要 记载中国稀切叶蚁属 *Oligomyrmex* Mayr 18 种, 其中描述 8 新种。分别编制了兵蚁和工蚁的检索表。评论了该属中国种类的分类历史。18 个已知种依次是卷须稀切叶蚁 *O. capreolus* Wheeler、高结稀切叶蚁 *O. altinodus* sp. nov.、弯刺稀切叶蚁 *O. curvispinus* sp. nov.、条纹稀切叶蚁 *O. striatus* sp. nov.、尖刺稀切叶蚁 *O. acutispinus* sp. nov.、惠勒稀切叶蚁 *O. wheeleri* Ettershank、钝齿稀切叶蚁 *O. obtusidentus* sp. nov.、双角稀切叶蚁 *O. bihornatus* sp. nov.、多音

稀切叶蚁 *O. polyphemus* Wheeler、邵氏稀切叶蚁 *O. sauteri* Forel、香港稀切叶蚁 *O. taiponicus* Wheeler、直背稀切叶蚁 *O. rectidorsus* sp. nov.、湖南稀切叶蚁 *O. hunanensis* Wu et Wang、纹头稀切叶蚁 *O. reticapitus* sp. nov.、拟亮稀切叶蚁 *O. pseudolusciosus* Wu et Wang、光亮稀切叶蚁 *O. lusciosus* Wheeler、江西稀切叶蚁 *O. jiangxiensis* Wu et Wang、阿美稀切叶蚁 *O. amius* Forel。

关键词 膜翅目, 蚁科, 稀切叶蚁属, 系统分类, 中国.

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