

## SYSTEMATIC STUDY ON THE ANT GENUS *TETRAPONERA* F. SMITH (HYMENOPTERA, FORMICIDAE) OF CHINA

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**Abstract** Thirteen species of the ant genus *Tetraponera* F. Smith are recorded in China. Among them, 5 new species are described from Yunnan Province, a new record species for China is reported from the province. Taxonomic key is prepared for the worker caste. Taxonomic history on Chinese species of the genus is reviewed. The 13 known species are namely *T. rufonigra* (Jerdon), *T. concava* sp. nov., *T. binghami* (Forel), *T. attenuata* F. Smith, *T. notabilis* Ward, *T. nitida* (F. Smith), *T. convexa* sp. nov., *T. microcarpa* Wu et Wang, *T. furcata* sp. nov., *T. protensa* sp. nov., *T. allaborans* (Walker), *T. amargina* sp. nov. and *T. modesta* (F. Smith). *T. notabilis* Ward is a new record species for China.

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

The ant genus *Tetraponera* F. Smith is distributed in the Old World tropics. According to Bolton (1995a, b), 78 species of the genus were known in the world: 1 species in Palaearctic, 32 species in Afrotropical, 13 species in Malagasy, 13 species in Oriental, 18 species in Indo-Australian, 1 species in Australasian. In 2001, Ward revised the Asian and Australian species and 33 species belonging to 4 species-groups were involved. This important work provides a good base for the identification of Asian and Australian species.

In China, Forel (1913) firstly reported 2 species of the genus from Taiwan Province, i. e. *Sima allaborans* Walker and *Sima thagatensis* Forel, however, the latter was treated as a junior synonym of *T. attenuata* F. Smith by Ward (2001). Wheeler (1921) recorded *T. binghami* (Forel) from Hong Kong. Two years later, Wheeler (1923) reported *T. rufonigra* (Jerdon) from Hainan Island. In 1930-1931, Wheeler recognized 3 species of the genus in the mainland of China, i. e. *T. allaborans* (Walker), *T. binghami* (Forel) and *T. rufonigra* (Jerdon). Wu et al. (1990) carried out a taxonomic study of the genus in China and 5 species were treated including a new species *T. microcarpa* Wu et Wang. Afterward, Wu et al. (1995) recorded 4 species of the genus in China. The species identified as *T. nigra* (Jerdon) by Wu et al. would be *T. attenuata* F. Smith according to

Ward (2001). Tang et al. (1995) also recorded one species *T. allaborans* (Walker) in China. Zhou et al. (1997) described a new species *T. shankouensis* Zhou et Jiang from Guangxi Region, but the species was treated as a junior synonym of *T. nitida* (F. Smith) by Ward (2001). Lately, Zhou (2001) identified 5 species of the genus in Guangxi Region. Ward (2001) recorded 6 species of the genus in China in his latest revision.

Xu (2002) reported 8 species of *Tetraponera* from Xishuangbanna Nature Reserve, Yunnan Province. Based on revision of the genus of Ward (2001), the species misidentified as *T. birmana* by Xu would be a new species *T. furcata* sp. nov., the species misidentified as *T. nigra* by Xu would be *T. attenuata*, the species identified by Xu as *T. siggi* would be *T. nitida*, the species misidentified as *T. aitkeni* by Xu would be *T. allaborans*, and *Tetraponera* sp. 1 and *Tetraponera* sp. 2 of Xu represent the same species which would be a new one *T. amargina* sp. nov.

In this study, 5 new species of *Tetraponera* are described from Yunnan Province. Meanwhile, a new record species for China, *T. notabilis* Ward, is reported from the province. Up to date, 13 species of the genus are known in China.

Standard measurements and indices are as defined in Bolton (1994) and Ward (2001): TL-Total length,

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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, EL-Eye length, REL-Relative eye length =  $EL \times 100 / HL$ , PDH-Propodeum height, MTW-Metapleural width, PDI-Propodeal index =  $PDH \times 100 / MTW$ , PL-Petiole length, PH-Petiole height, DPW-Dorsal petiole width, PLI-Petiole length index =  $PH \times 100 / PL$ , PWI-Petiole width index =  $DPW \times 100 / PL$ . All measurements are in mm.

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

### *Tetraponera* F. Smith

*Tetraponera* F. Smith, 1852: 44. Type-species: *Tetraponera atrata* (junior synonym of *Tetraponera nigra*), by subsequent designation of W. M. Wheeler, 1911: 173.

*Sima* Roger, 1863: 178. Type-species: *Sima compressa* (junior synonym of *Tetraponera allaborans*), by monotypy. Synonym by F. Smith, 1877: 67.

Diagnosis of genus. Worker slender-bodied and arboreal. Mandible short, usually with 3-4 (rarely 5-6) teeth on the masticatory margin and 0-2 small teeth on the basal margin. Palp formula 6, 4. Posteromedial margin of clypeus not prolonged backwards between the frontal carinae. Anterodorsal surface of median portion of clypeus continuous, non-truncate, its anterior margin with a line of clypeal setae, and varying from straight and entire to protruding and dentate. Median lobe of antennal sclerite expanded laterally and covering most of the basal condyle of the antenna when head is observed in full-face view. Antenna 12-segmented. Scape short, less than three-quarters of head length. Frontal carinae relatively well separated, the minimum distance between them greater than basal scape width. Compound eye relatively large, width of eye two-thirds or more of length. Ocelli present (usually 3) or absent. Pronotum and mesonotum not fused, freely articulating with one another. Mesopropodeal impression usually well marked, sometimes containing a plate-like sclerite, apparently of metanotal origin. Propodeal spiracle circular to elongate, located well forward on upper third of propodeum. Metapleural gland well developed, the opening directed ventrolaterally or posterolaterally, and preceded by an impression along the lower margin of the metapleuron, whose dorsal margin is marked by an oblique longitudinal carina. Metabasitarsal sulcus nearly always present, reduced in some species. Meso- and metatibiae each with a pair of apical spurs, the posterior spur well devel-

oped and pectinate, the anterior spur smaller, sometimes very reduced. Terga and sterna of abdominal segments II (petiole), III (postpetiole) and IV not laterally fused. Postpetiole distinctly developed. (Followed Ward's description in 2001)

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

- Head with three distinct ocelli. Mandible with 5 teeth on the masticatory margin. Anteroventral corner of petiole distinctly dentate (*rufonigra*-group) ..... 2  
Head lacking ocelli. Mandible with 3-4 teeth on the masticatory margin. Anteroventral corner of petiole not dentate ..... 3
- Median lobe of clypeus longer and narrower, anterior margin straight or weakly convex. In dorsal view, humeral corners of pronotum sharply angled at most 90°. Anteroventral tooth of petiole acute. Pronotum color orange and concolor with alitrunk (Figs.1-5) (China: Yunnan and Hainan Provinces; Pakistan to Southern China, South to Sumatra and Java, and introduced into the Seychelles) ..... *T. rufonigra* (Jerdon)  
Median lobe of clypeus shorter and broader, anterior margin weakly but distinctly concave. In dorsal view, humeral corners of pronotum bluntly angled and distinctly more than 90°. Anteroventral tooth of petiole blunt. Pronotum color black in contrast to the orange alitrunk (Figs.6-10) (China: Yunnan Province) ... *T. concava* sp. nov.
- Mandible robust, with four teeth on the masticatory margin, and 0-1 denticle on the basal margin. Basal margin of mandible subequal to, or shorter than, masticatory margin (*nigra*-group) ..... 4  
Mandible slender, with three teeth on the masticatory margin, and 1-2 denticles on the basal margin. Basal margin of mandible much longer than masticatory margin (*allaborans*-group) ..... 7
- Standing pilosity on the head abundant, cephalic setal count 10-40. Pronotum lacking lateral margins. In profile view, petiole lacking a pair of posteroventral teeth ..... 5  
Standing pilosity on the head very sparse, cephalic setal count 0-4. Pronotum distinctly marginate laterally. In profile view, petiole with a pair of acute posteroventral teeth, formed from ventrolateral extensions of the petiolar sternite ..... 6
- Head trapezoid and widened forward. Median lobe of clypeus broad and protruding, anterior margin with 5 blunt denticles (Figs.11-15) (China: Yunnan Province, Guangxi Region, Hong Kong; India and Nepal, East to Southern China, South to West Malaysia) ..... *T. binghami* (Forel)  
Head rectangular and slightly narrowed forward. Median lobe of clypeus narrow and very short, anterior margin entire and without denticles (Figs.16-20) (China: Yunnan, Guangdong, Hainan and Taiwan Provinces, Guangxi Region, Hong Kong; North-east India to China, South to Sumatra, Java, Borneo and Palawan) ..... *T. attenuata* F. Smith
- Head elongate with CI 73-77. Occipital margin straight. Lateral sides of pronotum bluntly marginate. Petiole very slender with PLI 43-49 (Figs.21-26) (China: Yunnan Province; Thailand; West Malaysia) ..... *T. notabilis* Ward  
Head broader with CI 78-90. Occipital margin weakly concave. Lateral sides of pronotum sharply marginate. Petiole much shorter with PLI 60-79 (Figs.27-32) (China: Yunnan Province, Guangxi Region, Hong Kong; India to Southern China, South to Northern Australia) ..... *T. nitida* (F. Smith)
- Median lobe of clypeus very short, not protruding, anterior margin straight. In profile view, pronotum strongly convex (Figs.33-37)

- (China: Yunnan Province) ..... *T. convexa* sp. nov.  
Median lobe of clypeus elongate and protruding, anterior margin dentate. In profile view, pronotum weakly to moderately convex ..... 8
8. Median lobe of clypeus with a pair of teeth furnished at the anterolateral corners, anterior margin between the teeth nearly straight ..... 9  
Median lobe of clypeus with 3-5 teeth along its anterior margin, sometimes the teeth may reduced ..... 10
9. In profile view, dorsum of propodeum horizontal, not slope down backwards, posterodorsal corner of propodeum distinct which bluntly angled. Head shorter with CI 76-83. Scape shorter with SI 52-57. Petiole shorter with PLI 53-59 (Figs.38-42) (China: Jiangxi and Guangdong Provinces, Guangxi Region, Hong Kong; Vietnam) .....  
..... *T. microcarpa* Wu et Wang  
In profile view, dorsum of propodeum oblique and slope down backwards, posterodorsal corner of propodeum indistinct and rounded. Head longer with CI 71-77. Scape longer with SI 60-65. Petiole longer with PLI 43-45 (Figs.43-47) (China: Yunnan Province) .....  
..... *T. furcata* sp. nov.
10. Head and alitrunk black ..... 11  
Head and alitrunk yellow to orange-brown ..... 12
11. Median lobe of clypeus with 3 teeth, the middle tooth elongate and much longer than the lateral ones. Occipital margin weakly concave. Scape shorter with SI 52-53. Eye relatively smaller with REL 30-31 (Figs.48-52) (China: Yunnan Province) .....  
..... *T. protensa* sp. nov.  
Median lobe of clypeus with 3-5 teeth, sometimes the teeth may reduced, but the middle tooth not longer than the lateral ones. Occipital margin straight or weakly convex. Scape longer with SI 57-65. Eye relatively larger with REL 33-41 (Figs.53-57) (China: Yunnan, Sichuan, Zhejiang, Fujian, Guangdong, Hainan and Taiwan Provinces, Guangxi Region, Hong Kong; widespread species distributed from India to Southern China, South to New Guinea and Northern Australia) ..... *T. allaborans* (Walker)
12. Pronotum lacking distinct lateral margins, in posterior view dorsum rounding gently into the sides. In profile view, petiolar node roundly and symmetrically convex (Figs.58-62) (China: Yunnan Province) .....  
..... *T. amargina* sp. nov.  
Pronotum with distinct lateral margins, in posterior view lateral margins soft-edged. In profile view, petiolar node anterodorsally convex (Figs.63-66) (China: Fujian, Guangdong and Hainan Provinces, Guangxi Region; North-east India to China, South to New Guinea) .....  
..... *T. modesta* (F. Smith)

## 1 *Tetraponera rufonigra* (Jerdon) (Figs.1-5)

*Eciton rufonigrum* Jerdon, 1851: 111.

*Tetraponera rufonigra* (Jerdon); F. Smith, 1877: 68.

Workers. TL 9.6-11.2, HL 2.00-2.17, HW 1.80-1.97, CI 88-92, SL 1.00-1.13, SI 57-59, PW 1.20-1.43, AL 2.87-3.17, EL 0.63-0.73, REL 32-34, PDH 0.97-1.13, MTW 0.98-1.10, PDI 97-103, PL 1.23-1.43, PH 0.60-0.70, DPW 0.60-0.77, PLI 45-51, PWI 44-53 (6 individuals measured).

For a full description of the worker see Ward (2001: 649-651).

Material examined.

Xishuangbanna Nature Reserve, Yunnan Province. Jinghong County: 1 worker, Sanchahe,

Mengyang Town, 920 m (DAI Se-Ping); 5 workers, Damenglong, 600-700 m (HUANG Pu-Ze). Mengla County: 1 worker, Bubang, 760 m (XU Zheng-Hui); 4 workers, Nanqian, Shangyong Town, 880 m (LIU Tai-Yong).

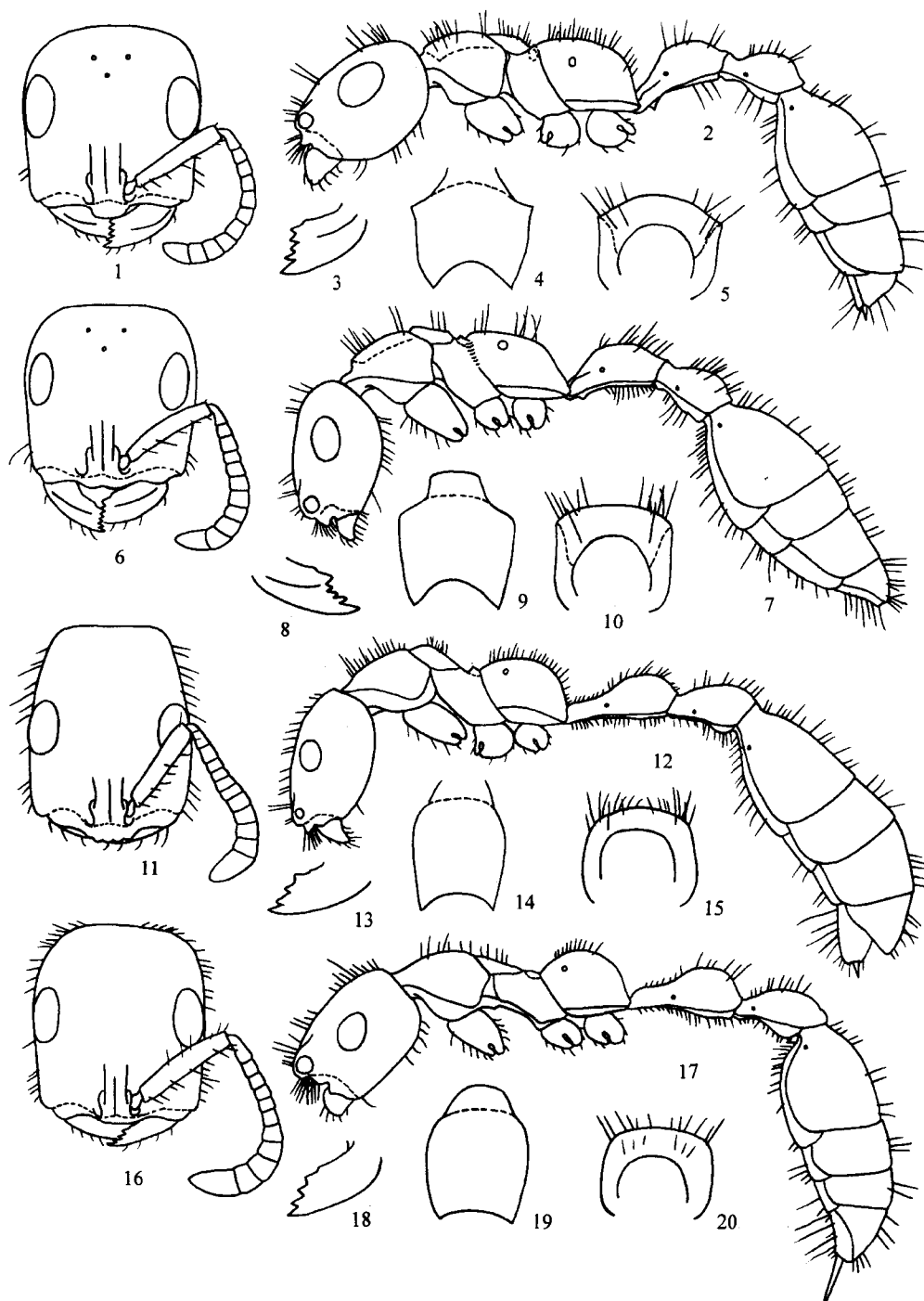
Tongbiguan Nature Reserve, Yunnan Province. Yingjiang County: 3 workers, Woqiong, Xima Town, 830 m (XU Zheng-Hui). Ruili County: 1 worker, Huyu Town, 880 m (XU Zhen-Ghui).

Yunnan Province. Yuanjiang County: 19 workers, Ganzhuang, 850 m (XU Zheng-Hui). Honghe County: 9 workers, Yesa Town, 900-1 000 m (PAN Jian-Lin). Longling County: 1 queen, Sanjiangkou, 630 m (OU Xiao-Hong).

Guangxi Region. Bose County, 1 worker, Bose, 220 m (XU Zheng-Hui).

## 2 *Tetraponera concava* sp. nov. (Figs.6-10)

Holotype worker. TL 9.7, HL 1.90, HW 1.73, CI 91, SL 0.97, SI 56, PW 1.17, AL 2.80, EL 0.60, REL 32, PDH 0.87, MTW 0.97, PDI 90, PL 1.23, PH 0.53, DPW 0.57, PLI 43, PWI 46. Head nearly square and weakly narrowed forwards, slightly longer than broad. In full-face view, occipital margin straight, occipital corners rounded. Anterior half of lateral side slightly concave and posterior half weakly convex. Mandible broad and robust, with 5 teeth on the masticatory margin and 1 denticle on the basal margin. Median lobe of clypeus distinct, broad and shorter, anterior margin concave in the middle, lateral lobelets roundly convex. Apex of scape reached to 3/5 of the distance from antennal socket to occipital corner. Eyes relatively smaller and not reached to lateral sides of head. Vertex with 3 distinct ocelli. In profile view, pronotum moderately convex, lateral margins blunt. Promesonotal suture impressed. Mesonotum flat and slope down backward. Metanotal groove deeply impressed. Anterior end of propodeum raised up, dorsum relatively straight and weakly slope down backward. Posterodorsal corner blunt. Declivity straight and shorter the dorsum. In dorsal view, humeral corners of pronotum bluntly angled and much more than 90°. Dorsum of propodeum relatively flat. In posterior view, pronotum moderately convex, laterodorsal corners bluntly angled. In profile view, petiole with short down-curved peduncle, anteroventral corner with a blunt tooth. Anterior and posterior faces of petiolar node sloped, dorsum long and moderately convex. Postpetiolar node as high as petiolar node.



Figs.1-20. *Tetraponera* workers. 1-5. *T. rufonigra* (Jerdon). 6-10. *T. concava* sp. nov. 11-15. *T. binghami* (Forel). 16-20. *T. attenuata* F. Smith. 1, 6, 11, 16. Head in full face view. 2, 7, 12, 17. Body in profile view. 3, 8, 13, 18. Mandible in dorsal view. 4, 9, 14, 19. Pronotum in dorsal view. 5, 10, 15, 20. Pronotum in posterior view.

Mandible with longitudinal rugae. Head and pronotum densely and coarsely punctate, distance between punctures about equal to puncture diameter. Punctures on occipital area sparse, distance between punctures about 2-3 times of the puncture diameter. Interspace appears as microreticulations. Lateral sides

of pronotum, mesonotum and dorsum of propodeum densely and finely punctured. Lateral sides of propodeal dorsum with dense large punctures. Metanotal groove with short longitudinal rugae. Mesopleuron, metapleuron, and lateral sides of propodeum densely and longitudinally striate. Declivity and dorsum of

petiolar node sparsely and finely punctate. Lateral sides of petiole with sparse large punctures. Postpetiole and gaster relatively smooth. Head, prothorax and mesothorax with sparse erect hairs and dense decumbent pubescences. Propodeum, petiole, postpetiole and gaster with abundant erect hairs and dense decumbent pubescences. Scapes and tibiae with sparse suberect hairs and dense decumbent pubescences. Head, pronotum, procoxae, postpetiole and gaster black. Mesothorax, metathorax, propodeum and petiole orange. Mandibles, scapes, coxae, femora and tibiae blackish brown. Flagella and tarsi yellowish brown.

Paratype worker. TL 10.2, HL 2.10, HW 1.87, CI 89, SL 1.07, SI 57, PW 1.30, AL 3.07, EL 0.63, REL 30, PDH 1.07, MTW 1.13, PDI 94, PL 1.37, PH 0.67, DPW 0.70, PLI 49, PWI 51 (1 individual measured). As holotype, but mandibles reddish brown, scapes and lower half of postpetiole yellowish brown, upper half of postpetiole blackish brown.

Holotype. worker, No. A95-53, 1100 m, Tongbiguan Nature Reserve, Tongbiguan Town, Yingjiang County, Yunnan Province, 23 Apr. 1995, collected by Mr. YANG Bi-Lun in a mountain rain forest.

Paratype.

Xishuangbanna Nature Reserve, Yunnan Province: 1 worker, No. A98-279, 1600 m, Papo Village, Meng' a Town, Menghai County, 8 Mar. 1998, collected by Mr. HE Yun-Feng in a deciduous broad-leaf forest.

This new species is close to *T. rufonigra* (Jerdon), but median lobe of clypeus broad and shorter, anterior margin distinctly concave. In dorsal view, humeral corners of pronotum bluntly angled and much more than 90°. Scape shorter with SI 56-57. Propodeum relatively lower with PDI 90-94. Pronotum black in contrast to the orange remainder of alitrunk. This new species seems living in a habitat of higher altitude.

### 3 *Tetraponera binghami* (Forel) (Figs.11-15)

*Sima binghami* Forel, 1902: 243.

*Tetraponera binghami* (Forel); Wheeler, 1921: 529.

Workers. TL 7.7-8.7, HL 1.45-1.70, HW 1.07-1.17, CI 69-75, SL 0.70-0.77, SI 65-66, PW 0.70-0.80, AL 2.10-2.43, EL 0.37-0.43, REL 25-26, PDH 0.60-0.70, MTW 0.63-0.73, PDI 93-95, PL 1.03-1.20, PH 0.38-0.46, DPW 0.37-0.43, PLI 35-41, PWI 34-38 (5 individuals measured).

For a full description of the worker see Ward

(2001: 626-627).

Material examined.

Yunnan Province. Jinghong County: 5 workers, Damenglong, 600-700 m (HUANG Pu-Ze).

### 4 *Tetraponera attenuata* F. Smith (Figs.16-20)

*Tetraponera attenuata* F. Smith, 1877: 71.

*Sima attenuata* var. *thagatensis* Forel, 1902: 249. Synonym by Ward, 2001: 622.

Workers. TL 6.8-8.6, HL 1.15-1.73, HW 0.97-1.47, CI 84-89, SL 0.67-0.93, SI 63-69, PW 0.63-0.96, AL 1.90-2.73, EL 0.37-0.48, REL 28-32, PDH 0.53-0.83, MTW 0.53-0.80, PDI 90-106, PL 0.93-1.30, PH 0.37-0.57, DPW 0.30-0.53, PLI 39-46, PWI 32-44 (6 individuals measured).

For a full description of the worker see Ward (2001: 622-626).

Material examined.

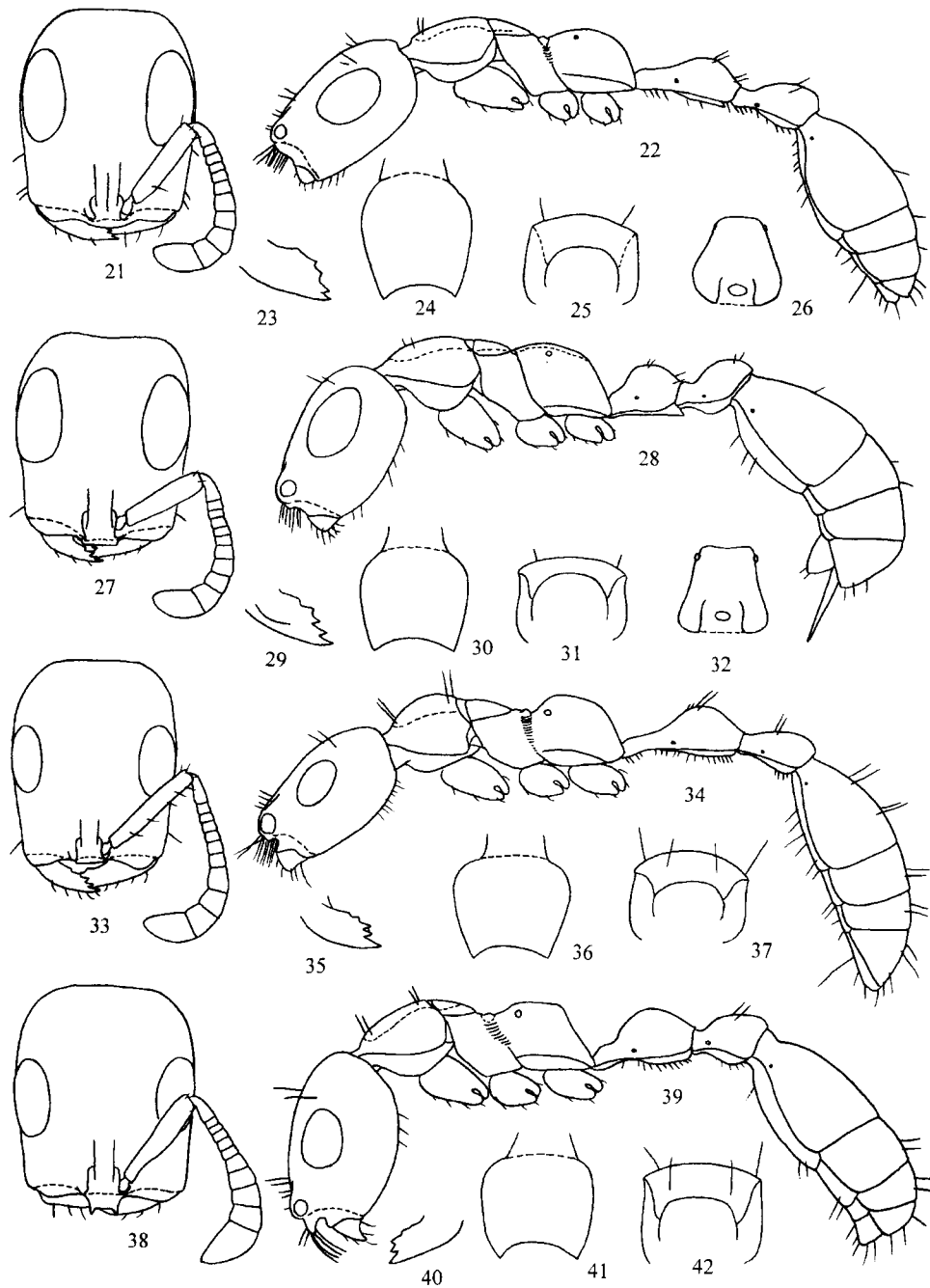
Xishuangbanna Nature Reserve, Yunnan Province. Jinghong County: 10 workers, Songshanling, Puwen Town, 1270 m (XU Zheng-Hui); 3 workers, Guanping, Dadugang Town, 1120 m (LIU Tai-Yong); 27 workers, 3 queens, Sanchahe, Mengyang Town, 840-960 m (XU Zheng-Hui, LAI Yuc-Hu, DAI Se-Ping); 3 workers, Dongfeng Farm, 600-700 m (HUANG Pu-Ze). Mengla County: 17 workers, 1 queen, Bakaxiaozhai, Menglun Town, 600-850 m (XU Zheng-Hui, YANG Zhong-Wen, DU Yong-Chao, CHEN Zhi-Ping); 2 workers, 1 queen, Yin-Chang, Menglun Town, 810 m (XU Zheng-Hui); 4 workers, 1 queen, Shihuishan, Menglun Town, 660-780 m (XU Zheng-Hui, CHEN Zhi-Ping, YANG Zhong-Wen); 5 workers, Menglun Town, 600-700 m (JIANG Guo-Fang, DU Yong-Chao); 6 workers, 2 queens, Longlin, 900-1040 m (LAI Yu-Chu, XU Zheng-Hui, ZENG Guang); 1 male, Nangongshan, 1380 m (XU Zheng-Hui); 3 workers, Bubang, 760 m (XU Zheng-Hui, YANG Zhong-Wen); 16 workers, Huihancun, 700-750 m (YANG Zhong-Wen, DU Yong-Chao); 62 workers, Mengla, 660-1000 m (DU Yong-Chao, XU Zheng-Hui, CHEN Zhi-Ping, YANG Zhong-Wen, HE Yun-Feng, ZENG Guang); 11 workers, Manzhuang, Shangyong Town, 900 m (HE Yun-Feng, LIU Tai-Yong); 3 queens, Nanqian, Shangyong Town, 820-880 m (XU Zheng-Hui, LIU Tai-Yong). Menghai County, 2 workers, Papo, Meng' a Town, 1280-1600 m (XU Zheng-Hui, HE Yun-Feng).

Tongbiguan Nature Reserve, Yunnan Province. Yingjiang County, 3 workers, Woqiong, Xima Town,

350-950 m (XU Zheng-Hui); 1 worker, Tongbiguan Town, 600 m (YANG Bi-Lun); 1 worker, Hongbenghe, Mangyun Town, 400 m (XU Zheng-Hui); 1 worker, Yuntai, Mangyun Town, 800 m (XU Zheng-Hui). Ruili County, 1 worker, Huyu Town, 880 m

(XU Zheng-Hui).

Ailaoshan Mountain Nature Reserve, Yunnan Province. Jingdong County, 1 queen, Taizhong Town, 1 750 m (ZHOU Xing-Guo); 1 worker, Wenchang, Huashan Town, 1 500 m (CHAI Zheng-Qun).



Figs. 21-42. *Tetraponera* workers. 21-26. *T. notabilis* Ward. 27-32. *T. nitida* (F. Smith). 33-37. *T. convexa* sp. nov. 38-42. *T. microcarpa* Wu et Wang. 21, 27, 33, 38. Head in full face view. 22, 28, 34, 39. Body in profile view. 23, 29, 35, 40. Mandible in dorsal view. 24, 30, 36, 41. Pronotum in dorsal view. 25, 31, 37, 42. Pronotum in posterior view. 26, 32. Propodeum in posterior view.

Daweishan Mountain Nature Reserve, Yunnan Province. Pingbian County, 4 workers, Baiheqiao, 230 m (WANG Li-Qiong). Hekou County, 19 workers, Hekou, 210 m (XU Zheng-Hui).

Yunnan Province. Simao County, 3 workers, Dakaihe (YU Xin-Wen).

### 5 *Tetraponera notabilis* Ward New record to China (Figs. 21-26)

*Tetraponera notabilis* Ward, 2001: 640.

Worker. TL 5.2, HL 1.12, HW 0.80, CI 72, SL 0.47, SI 58, PW 0.53, AL 1.63, EL 0.50, REL 45, PDH 0.45, MTW 0.43, PDI 104, PL 0.73, PH 0.37, DPW 0.23, PLI 50, PWI 32 (1 individual measured).

For a full description of the worker see Ward (2001: 640).

Material examined.

Xishuangbanna Nature Reserve, Yunnan Province. Mengla County, 1 worker, Mengla, 770 m (XU Zheng-Hui).

### 6 *Tetraponera nitida* (F. Smith) (Figs. 27-32)

*Pseudomyrma nitida* F. Smith, 1860: 106.

*Tetraponera nitida* (F. Smith); Donisthorpe, 1932: 462.

*Sima siggi* Forel, 1902: 246. Synonym by Ward, 2001: 636.

*Tetraponera shankouensis* Zhou et Jiang, 1997: 72. Synonym by Ward, 2001: 636.

Workers. TL 3.8-4.0, HL 0.83-0.88, HW 0.65-0.67, CI 75-78, SL 0.37, SI 55-56, PW 0.43-0.45, AL 1.10-1.17, EL 0.40-0.43, REL 45-49, PDH 0.37-0.38, MTW 0.33-0.37, PDI 105-115, PL 0.40-0.43, PH 0.27-0.28, DPW 0.20-0.22, PLI 62-71, PWI 46-50 (4 individuals measured).

For a full description of the worker see Ward (2001: 436-438).

Material examined.

Xishuangbanna Nature Reserve, Yunnan Province. Mengla County, 1 worker, Mengla, 675 m (HE Yun-Feng).

Guangxi Region. Hepu County: 1 queen, Yingluo, Shankou Town (JIANG Guo-Fang).

Hainan Province. Wenchang County, 3 workers, Wenchang (JIANG Guo-Fang).

### 7 *Tetraponera convexa* sp. nov. (Figs. 33-37)

Holotype worker. TL 5.7, HL 1.13, HW 0.87, CI 76, SL 0.57, SI 65, PW 0.63, AL 1.67, EL 0.37, REL 32, PDH 0.52, MTW 0.50, PDI 103, PL 0.87, PH 0.35, DPW 0.28, PLI 40, PWI 33. Head rectangular, distinctly longer than broad. In full face

view, occipital margin straight, occipital corners rounded. Anterior half of lateral side weakly concave, posterior half moderately convex. Head broadest at the position of posterior margins of eyes, narrowed forward and backward. Mandible narrow and slender, with 3 teeth on the masticatory margin and 2 denticles on the basal margin. Median lobe of clypeus narrow and very short, indistinct, anterior margin straight, without teeth. Apex of scape reached to 4/7 of the distance from antennal socket to occipital corner. Eyes larger, slightly surpassed lateral sides of head. Ocelli absent. In profile view, pronotum strongly convex, lateral margins distinct. Mesonotum nearly straight and slope down backward, posterior end down curved. Metanotal groove widely and deeply impressed. Anterior face of propodeum short and sloped, dorsum weakly convex and slope down backward, posterodorsal corner rounded, declivity relatively straight and about equal to dorsum. In dorsal view, pronotum narrowed backward, humeral corners roundly prominent. Metanotum raised up as a longitudinal central ridge between the spiracles. In posterior view, pronotum roundly convex, lateral margins distinct and bluntly angled. In profile view, anterior peduncle of petiole slender and weakly down curved, ventral face weakly concave, petiolar node roundly convex and symmetrical. Postpetiolar node lower than petiolar node.

Mandibles finely and longitudinally striate on basal half, coarsely and longitudinally striate on apical half. Head, pronotum and mesonotum very sparsely and finely punctate, interspace smooth. Lateral sides of pronotum smooth. Mesopleuron, metapleuron and lateral sides of propodeum weakly, finely and longitudinally rugulose. Metanotal groove with short longitudinal ridges. Petiole, postpetiole and gaster smooth. Dorsum of anterior peduncle of petiole densely and finely punctate. The whole body with abundant decumbent pubescences, standing hairs very sparse: 2 pairs on frontal carinae, 1 pair on vertex, 2 pair on pronotum, 1 pair on petiole and 1 pair on postpetiole. Mesonotum and propodeum lack standing hairs. Gaster with sparse erect hairs. Scapes and tibiae with sparse suberect hairs and dense subdecumbent pubescences. Body color black. Mandibles, antennae, tibiae and tarsi brownish yellow. Clypeus and femora brownish black.

Paratype workers. TL 5.2-6.0, HL 1.03-1.10, HW 0.80-0.87, CI 76-79, SL 0.53-0.57, SI 64-67, PW 0.57-0.60, AL 1.47-1.63, EL 0.37-0.40, REL

34-36, PDH 0.47-0.50, MTW 0.47-0.50, PDI 93-100, PL 0.80-0.90, PH 0.30-0.35, DPW 0.25-0.30, PLI 35-40, PWI 31-35 (6 individuals measured). As holotype.

Holotype. worker, No. A97-975, 1 120 m, Xishuangbanna Nature Reserve, Guanping Village, Dadugang Town, Jinghong County, Yunnan Province, 7 Aug. 1997, collected by Mr. LIU Tai-Yong in the mountain rain forest.

Paratypes.

Xishuangbanna Nature Reserve, Yunnan Province, 7 workers, with same data as holotype; 2 workers, No. A98-62, 1 270 m, Songshanling, Puwen Town, Jinghong County, 4 Mar. 1998, collected by Mr. HE Yun-Feng in the warm conifer forest.

This new species is close to *T. allaborans* (Walker), but median lobe of clypeus very short and indistinct, anterior margin straight and without teeth. Pronotum strongly convex. Scape relatively shorter with SI 64-67. Petiole relatively longer with PLI 35-40.

#### 8 *Tetraponera microcarpa* Wu et Wang (Figs. 38-42)

*Tetraponera microcarpa* Wu et Wang, 1990: 515.

Workers. TL 3.3-3.8, HL 0.78-0.82, HW 0.60, CI 73-77, SL 0.33-0.35, SI 56-58, PW 0.38-0.40, AL 0.97-1.00, EL 0.28-0.30, REL 35-38, PDH 0.32-0.33, MTW 0.32-0.33, PDI 100-105, PL 0.47, PH 0.25-0.27, DPW 0.20-0.23, PLI 54-57, PWI 43-50 (5 individuals measured).

For a full description of the worker see Wu *et al.* (1990: 515-516) and Ward (2001: 615-616).

Material examined.

Guangxi Region. Bose County, 4 workers, Bose, 220 m (XU Zheng-Hui). Nanning City, 2 workers, Nanning, 250 m (XU Zheng-Hui).

#### 9 *Tetraponera furcata* sp. nov. (Figs. 43-47)

Holotype worker. TL 4.4, HL 0.90, HW 0.62, CI 69, SL 0.40, SI 65, PW 0.43, AL 1.17, EL 0.30, REL 33, PDH 0.40, MTW 0.35, PDI 114, PL 0.63, PH 0.26, DPW 0.23, PLI 42, PWI 37. Head roughly rectangular, distinctly longer than broad. In full face view, occipital margin short and relatively straight, occipital corners rounded. Anterior 2/3 of lateral side weakly concave. Mandible narrow and slender, with 3 teeth on the masticatory margin and 1 denticle on basal margin. Median lobe of clypeus

narrow and protruding, anterolateral corners furnished with a pair of elongate teeth appears fork-like, anterior margin between the teeth straight. Apex of scape reached to 3/5 of the distance from antennal socket to occipital corner. Eyes large and surpassed lateral sides of head. Ocelli absent. In profile view, pronotum slightly convex, lateral borders distinctly marginate. Mesonotum straight and slope down backward. Metanotal groove widely and deeply impressed. Anterior face of propodeum short and sloped, dorsum slightly convex and slope down backward, posterodorsal corner rounded, declivity straight and slightly longer than dorsum. In dorsal view, pronotum narrowed backward, humeral corners roundly prominent. Metanotum raised up as a small conical prominence between the spiracles. In posterior view, pronotum weakly convex, laterodorsal corners sharp and rightly angled. In profile view, anterior peduncle of petiole slender and weakly curved down, ventral face weakly concave, petiolar node roundly convex with anterodorsal corner a little higher. Postpetiolar node slightly lower than petiolar node.

Mandibles sparsely, finely and longitudinally striate. Head, pronotum and mesonotum very sparsely and finely punctate, interspace smooth. Mesopleuron, metapleuron and lateral sides of propodeum weakly, finely and longitudinally rugulose. Metanotal groove with short longitudinal ridges. Petiole, postpetiole and gaster smooth. Dorsum of anterior peduncle of petiole densely and finely punctate. The whole body with sparse decumbent pubescences, standing hairs very sparse: 2 pairs on frontal carinae, 1 pair on vertex, 2 pairs on pronotum, 1 pair on petiole and 1 pair on postpetiole. Mesonotum and propodeum lack standing hairs. Gaster with sparse erect hairs. Scapes and tibiae with abundant pubescences, but lack standing hairs. Body color black. Mandibles and clypeus reddish brown. Mesofemora, metafemora and petiole blackish brown. Antennae, tibiae and tarsi yellow. Profemora, mesocoxae, metacoxae and postpetiole yellowish brown.

Paratype workers. TL 4.1-4.7, HL 0.85-0.97, HW 0.62-0.70, CI 71-77, SL 0.40-0.43, SI 60-65, PW 0.43-0.50, AL 1.17-1.30, EL 0.30-0.33, REL 34-39, PDH 0.37-0.40, MTW 0.33-0.40, PDI 100-110, PL 0.57-0.70, PH 0.25-0.30, DPW 0.22-0.25, PLI 43-45, PWI 35-38 (6 individuals measured). As holotype.

Holotype. worker, No. A98-130, 1 120 m, Xishuangbanna Nature Reserve, Guanping Village,



Dadugang Town, Jinghong County, Yunnan Province, 5 Mar. 1998, collected by Mr. LIU Tai-Yong in the mountain rain forest.

Paratypes.

Xishuangbanna Nature Reserve, Yunnan Province, 1 worker, with same data as holotype; 1 worker, with same data as holotype but No. A98-83; 7 workers, with same data as holotype but No. A97-885, 7 Aug. 1997, collected by Mr. XU Zheng-Hui; 1 worker, with same data as No. A97-885 but No. A97-917; 1 worker, with same data as No. A97-885 but No. A97-975; 1 worker, No. A97-57, 960 m, Sanchahe, Mengyang Town, Jinghong County, 27 Feb 1997, collected by Mr. LI Tian-Sheng in the mountain rain forest; 2 workers, with same data as No. A97-57 but No. A97-81, collected by Miss DAI Se-Ping; 1 worker, No. A97-2221, 1 525 m, Nan-gongshan Mountain, Mengla County, 18 Aug. 1997, collected by Mr. HE Yun-Feng in the monsoon evergreen broadleaf forest; 2 workers, with same data as No. A97-2221 but No. A97-2722, 1 380 m, 15 Sep. 1997, collected by Mr. XU Zheng-Hui; 1 worker, with same data as No. A97-2221 but No. A98-852, 1 620 m, 15 Mar. 1998; 6 workers, No. A97-1692, 900 m, Manzhuang Village, Shangyong Town, Mengla County, 14 Aug. 1997, collected by Mr. HE Yun-Feng in the semi-evergreen monsoon forest; 4 workers, No. A97-1994, 820 m, Nanqian Village, Shangyong Town, Mengla County, 15 Aug. 1997, collected by Mr. XU Zheng-Hui in the secondary shrub; 2 workers, with same data as No. A97-1994 but No. A98-584, 11 Mar. 1998, collected by Mr. ZENG Guang.

Ailao Mountain Nature Reserve, Yunnan Province, 3 workers, No. A00996, 1 500 m, Taizhong, Taizhong Town, Jingdong County, 14 Apr. 2002, collected by Mr. XU Zheng-Hui in the conifer-broadleaf mixed forest; 2 worker, No. A1226, 1 500 m, Wenchang Village, Huashan Town, Jingdong County, 13 Apr. 2002, collected by Miss CHAI Zheng-Qun in conifer-broadleaf mixed forest; 1 workers, with same data as No. A1226 but No. A1227.

Other material examined.

Xishuangbanna Nature Reserve, Yunnan Province. Mengla County, 1 worker, Longlin, 1 170 m (LAI Yu-Chu). Menghai County, 1 worker, Papo, Meng'a Town, 1 280 m (XU Zheng-Hui).

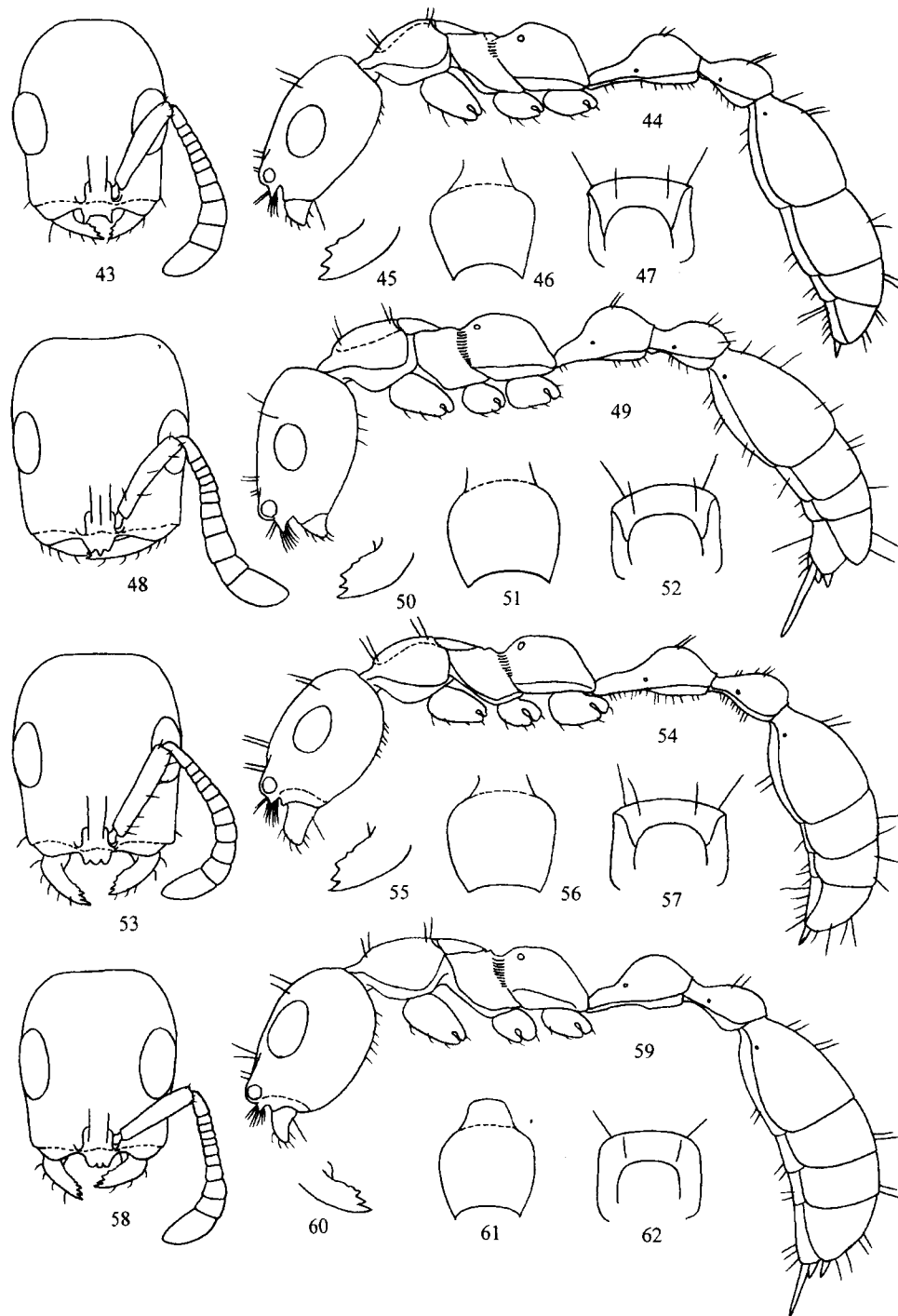
Tongbiguan Nature Reserve, Yunnan Province. Yingjiang County, 2 workers, Woqiong, Xima Town, 350-950 m (XU Zheng-Hui); 1 worker, Tongbiguan Town, 1 300 m (YANG Bi-Lun).

Gaoligongshan Nature Reserve, Yunnan Province. Lushui County, 1 worker, Lushui, 1 500 m (LI Ji-Guai). Baoshan City, 4 workers, Mangkuan Town, 1 000 m (ZHAO Yuan-Chao).

This new species is close to *T. microcarpa* Wu et Wang, but in profile view dorsum of propodeum distinctly slope down backwards, posterodorsal corner of propodeum rounded and indistinct. Head relatively longer with CI 71-77. Scape relatively longer with SI 60-65. Petiole relatively longer with PLI 43-45 and PWI 35-38.

**10 *Tetraponera protensa* sp. nov.** (Figs. 48-52)

Holotype worker. TL 4.9, HL 0.97, HW 0.77, CI 79, SL 0.40, SI 52, PW 0.50, AL 1.30, EL 0.30, REL 31, PDH 0.43, MTW 0.40, PDI 108, PL 0.63, PH 0.30, DPW 0.27, PLI 47, PWI 42. Head rectangular and distinctly longer than broad. In full face view, occipital margin weakly concave, occipital corners roundly prominent. Anterior half of lateral side slightly concave, posterior half weakly convex. Mandible narrow and slender, with 3 teeth on the masticatory margin and 2 denticles on basal margin. Median lobe of clypeus narrow and protruding, anterior margin with 3 teeth, the middle tooth exceptionally developed and much longer than the lateral ones. Apex of scape reached to 1/2 of the distance from antennal socket to occipital corner. Eyes moderate large and just reached to lateral sides of head. Ocelli absent. In profile view, pronotum moderately convex, lateral borders distinctly marginate. Mesonotum weakly convex and slope down backward. Metanotal groove widely and deeply impressed. Anterior face of propodeum sloped, dorsum moderately convex and slope down backward, anterodorsal and posterodorsal corners rounded, declivity relatively straight. In dorsal view, pronotum narrowed backward, humeral corners rounded. Metanotum raised up as a small conical prominence between the spiracles. In posterior view, pronotum moderately convex, laterodorsal corners bluntly angled. In profile view, anterior peduncle of petiole moderately long and slightly curved down, ventral face weakly concave, petiolar node roundly convex and symmetrical. Postpetiolar node slightly lower than petiolar node.



Figs. 43-62. *Tetraoponera* workers. 43-47. *T. furcata* sp. nov. 48-52. *T. protensa* sp. nov. 53-57. *T. allaborans* (Walker). 58-62. *T. amargina* sp. nov. 43, 48, 53, 58. Head in full face view. 44, 49, 54, 59. Body in profile view. 45, 50, 55, 60. Mandible in dorsal view. 46, 51, 56, 61. Pronotum in dorsal view. 47, 52, 57, 62. Pronotum in posterior view.

Mandibles finely and longitudinally striate. Head, prothorax and mesothorax very sparsely and finely punctate, interspace smooth. Metathorax and lateral sides of propodeum weakly, finely and longitudinally rugulose. Dorsum of propodeum, petiole, post-

petiole and gaster smooth and shining. Metanotal groove with short longitudinal ridges. Dorsum of petiole of petiole densely and finely punctate. The whole body with sparse decumbent pubescences, standing hairs very sparse: 2 pairs on frontal carinae, 1 pair

on vertex, 2 pairs on pronotum, 1 pair on petiole and 2 pairs on postpetiole. Mesonotum and propodeum lack standing hairs. Gaster with sparse erect hairs. Scapes and tibiae with abundant decumbent pubescences and sparse suberect hairs. Body color black. Clypeus and femora blackish brown. Mandibles and tibiae brown. Antennae and tarsi brownish yellow.

Paratype worker. TL 4.8, HL 1.00, HW 0.78, CI 78, SL 0.42, SI 53, PW 0.50, AL 1.33, EL 0.30, REL 30, PDH 0.43, MTW 0.42, PDI 104, PL 0.63, PH 0.32, DPW 0.28, PLI 50, PWI 45 (1 individual measured). As holotype.

Holotype. worker, No. A98-129, 1 120 m, Xishuangbanna Nature Reserve, Guanping Village, Dadugang Town, Jinghong County, Yunnan Province, 5 Mar. 1998, collected by Mr. LIU Tai-Yong in the mountain rain forest. Paratype 1 worker, with same data as holotype.

This new species is close to *T. allaborans* (Walker), but middle tooth of median lobe of clypeus exceptionally developed and protruding, much longer than the lateral teeth. Occipital margin weakly concave. Scapes relatively shorter with SI 52-53. Eyes relatively smaller with REL 30-31.

#### 11 *Tetraponera allaborans* (Walker) (Figs. 53-57)

*Pseudomyrma allaborans* Walker, 1859: 375.

*Tetraponera allaborans* (Walker); F. Smith, 1877: 69.

Workers. TL 4.3-5.3, HL 0.83-1.10, HW 0.67-0.83, CI 76-81, SL 0.40-0.50, SI 60-63, PW 0.43-0.60, AL 1.20-1.50, EL 0.32-0.37, REL 31-38, PDH 0.35-0.47, MTW 0.35-0.47, PDI 89-100, PL 0.60-0.83, PH 0.27-0.37, DPW 0.22-0.32, PLI 40-48, PWI 32-43 (6 individuals measured).

For a full description of the worker see Ward (2001: 602-608).

Material examined.

Xishuangbanna Nature Reserve, Yunnan Province. Jinghong County, 1 worker, Guanping, Dadugang Town, 1 120 m (LIU Tai-Yong); 3 workers, Sanchahe, Mengyang Town, 950-980 m (XU Zheng-Hui, LI Tian-Sheng). Mengla County, 3 workers, Shihuishan, Menglun Town, 660 m (CHEN Zhi-Ping, YANG Zhong-Wen); 4 workers, Menglun Town, 650-700 m (XU Zheng-Hui, PAN Yong-Zhi); 23 workers, 1 queen, Nangongshan Mountain, 1 380-1 620 m (LIU Tai-Yong, XU Zheng-Hui, HE Yun-Feng); 4 workers, Mengla, 650 m (XU Zheng-Hui). Menghai County, 8 workers, Papo, Meng'a Town, 1 300-1 600 m (ZENG Guang, HE Yun-Feng).

Tongbiguan Nature Reserve, Yunnan Province. Yingjiang County, 3 workers, Woqiong, Xima Town, 350-950 m (XU Zheng-Hui). Ruili County, 3 workers, Dengga Town, 1 000 m (XU Zheng-Hui).

Gaoligongshan Nature Reserve, Yunnan Province. Baoshan City, 13 workers, Chonggang, Lujiang Town, 1 000 m (XU Zheng-Hui); 1 worker, Baihualing, Lujiang Town, 1 500 m (YI Chuan-Hui); 1 worker, Bawan, Lujiang Town, 1 500 m (LONG Qi-Zhen).

Ailaoshan Mountain Nature Reserve, Yunnan Province. Jingdong County, 1 worker, Jingping Town, 1 250 m (CHAI Zheng-Qun); 4 workers, Wenchang, Huashan Town, 1 500 m (CHAI Zheng-Qun).

Daweishan Nature Reserve, Yunnan Province. Pingbian County, 1 worker, Gantian, 700 m (XU Zheng-Hui); 1 worker, Jiwo, 830 m (XU Zheng-Hui).

#### 12 *Tetraponera amargina* sp. nov. (Figs. 58-62)

Holotype worker. TL 3.5, HL 0.70, HW 0.55, CI 79, SL 0.30, SI 55, PW 0.37, AL 0.97, EL 0.25, REL 36, PDH 0.28, MTW 0.27, PDI 106, PL 0.43, PH 0.22, DPW 0.17, PLI 50, PWI 38. Head rectangular, distinctly longer than broad and slightly narrowed forward. In full face view, occipital margin nearly straight, occipital corners rounded. Anterior 1/2 of lateral side slightly concave, posterior 1/2 weakly convex. Mandible narrow and slender, with 3 teeth on the masticatory margin and 1 denticle on the basal margin. Median lobe of clypeus narrow and protruding, anterior margin with 3 small denticles arranged in a line. Apex of scape reached to 1/2 of the distance from antennal socket to occipital corner. Eyes relatively larger, just reached to lateral sides of head. Ocelli absent. In profile view, pronotum weakly convex, lateral borders bluntly rounded and lack distinct margins. Mesonotum weakly convex and slope down backward. Metanotal groove widely and deeply impressed. Anterior face of propodeum short and sloped, dorsum weakly convex and slope down backward, posterodorsal corner rounded and lacks a distinct boundary between dorsum and declivity, declivity relatively straight and seems longer than dorsum. In dorsal view, pronotum narrowed backward, humeral corners rounded. Mesonotum raised up as a small conical prominence between the spiracles. In posterior view, dorsum of pronotum nearly straight, laterodorsal corners roundly prominent and lack distinct margins. In profile view, anterior peduncle of petiole moderately long and weakly curved

down, ventral face moderately concave, petiolar node roundly convex and symmetrical. Postpetiolar node about as high as petiolar node.

Basal half of mandible smooth, apical half longitudinally striate. Head, alitrunk, petiole, postpetiole and gaster smooth and shining. The whole body with sparse decumbent pubescences, standing hairs very sparse; 2 pairs on frontal carinae, 1 pair on vertex, 2 pairs on pronotum and 1 pair on postpetiole. Metsonotum, propodeum and petiole lack standing hairs. Gaster with sparse erect hairs. Scapes and tibiae with abundant depressed pubescences, but lack erect hairs. Body color yellow, gaster black.

Paratype workers. TL 3.2-3.6, HL 0.68-0.75, HW 0.48-0.53, CI 69-76, SL 0.30-0.33, SI 58-65, PW 0.33-0.37, AL 0.93-1.00, EL 0.23-0.27, REL 33-39, PDH 0.26-0.32, MTW 0.25-0.28, PDI 94-113, PL 0.43-0.50, PH 0.20-0.23, DPW 0.16-0.18, PLI 46-50, PWI 37-42 (10 individuals measured). As holotype, but 7 workers with black gaster, 11 workers with yellow gaster.

Paratype queens. TL 3.8-4.4, HL 0.75-0.78, HW 0.52-0.55, CI 67-71, SL 0.30-0.33, SI 56-61, PW 0.37-0.40, AL 1.13-1.20, EL 0.23-0.27, REL 31-36, PDH 0.37-0.42, MTW 0.37-0.40, PDI 96-105, PL 0.53-0.57, PH 0.23-0.28, DPW 0.20-0.23, PLI 41-53, PWI 35-44 (4 individuals measured). As holotype, but body much larger, head with 3 distinct ocelli, alitrunk complex, gaster black.

Holotype. worker, No. A97-884, 1 120 m, Xishuangbanna Nature Reserve, Guanping Village, Dadugang Town, Jinghong County, Yunnan Province, 7 Aug. 1997, collected by Mr. ZENG Guang in the mountain rain forest.

Paratypes.

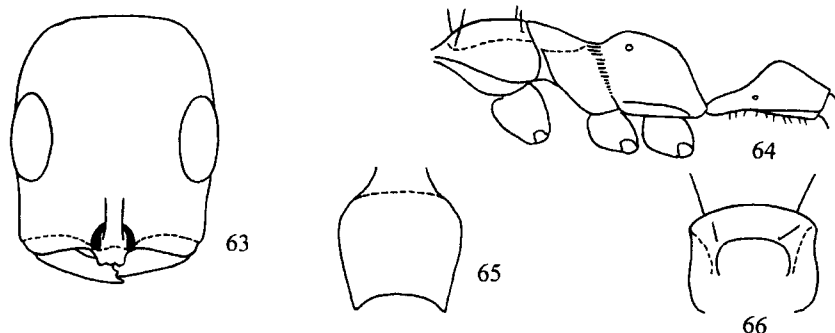
Xishuangbanna Nature Reserve, Yunnan

Province, 2 workers, with same data as holotype; 1 worker, No. A97-59, 960 m, Sanchahe, Mengyang Town, Jinghong County, 27 Feb. 1997, collected by Mr. LAI Yu-Chu in the mountain rain forest; 2 workers, with same data as No. A97-59 but No. A97-1112, 880 m, 8 Aug. 1997, collected by Mr. ZENG Guang in the hot bamboo forest; 1 queen, with same data as No. A97-1112 but No. A98-218, 6 Mar. 1998, collected by Mr. XU Zheng-Hui; 1 worker, No. A97-2854, 850 m, Bakaxiaozhai, Menglun Town, Mengla County, 7 Dec. 1997, collected by Mr. XU Zheng-Hui in the seasonal rain forest; 1 worker, No. A97-1693, 900 m, Manzhuang Village, Shangyong Town, Mengla County, 14 Aug. 1997, collected by Mr. HE Yun-Feng in the semi-evergreen monsoon forest; 1 worker, No. A97-1831, 880 m, Nanqian Village, Shangyong Town, Mengla County, 15 Aug. 1997, collected by Mr. LIU Tai-Yong in the secondary shrub; 1 queen, No. A97-2575, 1 150 m, Longmen Village, Shangyong Town, Mengla County, 13 Sep. 1997, collected by Mr. XU Zheng-Hui in the deciduous monsoon forest; 1 worker, with same data as No. A97-2575 but No. A97-3165, 1 060 m, 11 Dec. 1997, collected by Mr. YANG Bi-Lun; 2 workers, 1 queen, No. A98-274, 1 300 m, Papo Village, Meng'a Town, Menghai County, 8 Mar. 1998, collected by Mr. ZENG Guang in the warm conifer forest.

Ailaoshan Mountain Nature Reserve, Yunnan Province, 7 workers, 1 queen, No. A1274, 1 250 m, Huashan, Huashan Town, Jingdong County, 13 Apr. 2002, collected by Mr. ZHOU Xing-Guo in the conifer-broadleaf mixed forest.

Other material examined.

Gaoligongshan Nature Reserve, Yunnan Province. Lushui County, 1 queen, Lushui, 1 000 m (XU Zheng-Hui).



Figs. 63-66. *Tetraponera modesta* (F. Smith) worker. 63. Head in full face view. 64. Alitrunk and petiole in profile view. 65. Pronotum in dorsal view. 66. Pronotum in posterior view. 63-66. After Ward (2001).

This new species is close to *T. modesta* (F. Smith), but lateral borders of pronotum bluntly rounded and lack distinct margins. In profile view, petiolar node roundly convex and symmetrical. And distributed in the habitat with a higher altitude between 850-1 300 m.

### 13 *Tetraponera modesta* (F. Smith) (Figs. 63-66)

*Pseudomyrma modesta* F. Smith, 1860: 106.

*Tetraponera modesta* (F. Smith); Donisthorpe, 1932: 462.

Workers. HL 0.63-0.77, HW 0.49-0.64, CI 71-84, SI 58-68, REL 34-41, PDI 103-129, PLI 45-59, PWI 38-44 (14 individuals measured). (After Ward, 2001: 616)

For a full description of the worker see Ward (2001: 616-617).

Material not examined.

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## 中国细长蚁属系统分类研究 (膜翅目, 蚁科)

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**摘要** 在中国记载细长蚁属 *Tetraponera* F. Smith 昆虫 13 种, 其中在云南省描述 5 新种, 报道中国 1 新纪录种。编制了工蚁的分种检索表。评论了该属中国种类的分类历史。13 个已知种依次是红黑细长蚁 *T. rufonigra* (Jerdon), 凹唇细长蚁 *T. concava* sp. nov., 宾氏细长蚁 *T. binghami* (Forel), 狭唇细长蚁 *T. attenuata* F. Smith, 显赫细长蚁 *T. notabilis*

Ward, 光亮细长蚁 *T. nitida* (F. Smith), 隆背细长蚁 *T. convexa* sp. nov., 榕细长蚁 *T. microcarpa* Wu et Wang, 叉唇细长蚁 *T. furcata* sp. nov., 尖唇细长蚁 *T. protensa* sp. nov., 飘细长蚁 *T. allaborans* (Walker), 无缘细长蚁 *T. a-margina* sp. nov., 平静细长蚁 *T. modesta* (F. Smith)。显赫细长蚁 *T. notabilis* Ward 为中国新纪录种。

**关键词** 膜翅目, 蚁科, 细长蚁属, 系统分类, 中国.

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