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中国弓背蚁属(膜翅目：蚁科)昆虫研究*(续)

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江华弓背蚁 *Camponotus jianghuaensis* Xiao et Wang新种(图22，23)

正模(大型工蚁) TL 9.23, HL 2.48, HW 2.15, HI 87, SL 2.20, SI 102, CL 0.83, CW 0.85, CI 102, PW 1.32, OD 0.52, PI 61, WL 3.20, ML 2.77。

大型工蚁 TL 9.23—9.62, HL 2.48—2.56, HW 2.15—2.30, HI 87—90, SL 2.17—2.20, SI 94—102, CL 0.83—0.87, CW 0.85—0.86, CI 101—102, PW 1.32—1.40, OD 0.51—0.52, PI 61, WL 3.20—3.29, ML 2.77—2.82。

体红褐色，头后部褐黄色，上颚深红色，触角柄节褐黑色，鞭节褐黄色，腹节后缘黄色。毛被中等丰富，前胸背板具7—9根立毛。毛最长0.82 mm。后腹部毛较多，身体腹面毛很少。前足基节前面有一些立毛，足其余部分无立毛。腹柄结具3—5根柔毛。柔毛被短、稀疏，后腹部较多。唇基及唇基后缘以上、后头缘以下、两额脊之间的区域有直立毛，头其余部分只具短而稀疏的柔毛，在一定光线下才可看到。足只具很稀的柔毛。

身体较暗淡，刻点细小，头前部具一些粗的凹刻。头后部宽于前部，后头缘几乎不凹入，触角柄节超出后头缘约2/7柄节长。唇基具中脊，中叶突出，前缘平。上颚具7齿。并腹胸背面呈连续的弓形，并胸腹节背板很侧扁，基面长是宽的2—3倍；斜面不陡，基面长于斜面。足中等长度，胫节侧扁，内侧无刺，或偶有几个小刺。腹柄结前凸后平，顶端圆，后腹部卵形，中等大小。

中型及小型工蚁 TL 7.50—8.65, HL 1.57—1.66, HW 1.18—1.23, HI 74—75, SL 2.24—2.33, SI 182—197, CL 0.55, CW 0.70—0.71, CI 127—129, PW 0.98—0.99, OD 0.42—0.44, PI 80—83, WL 2.65—2.80, ML 2.56—2.67。

体褐红色，上颚基半部黑色，端半部深红色。头窄长，后头缘凸，触角柄节超出后头缘1/2—3/5柄节长，唇基中叶略突出。上颚具6齿。腹柄结前面略凸，后面平，其余同大型工蚁。

正模：♀，湖南省江华县种子园，1978.Ⅶ.9，彭建文、尹世才采。副模：12♀♀，同正模。

本新种与长足弓背蚁(*C. carin* Emery)相似，但本新种大型工蚁前胸背板长宽约相等；上颚具7齿，胫节无纵沟；唇基中叶突出；头褐黄色。

拟光腹弓背蚁 *Camponotus pseudoirritans* Wu et Wang新种(图24，25)

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正模 （大型工蚁） TL 12.20, HL 3.30, HW 2.76, HI 84, SL 3.24, SI 118, CL 1.08, CW 0.92, CI 85, PW 1.47, OD 0.63, PI 53, WL 4.15, ML 4.03。

大型工蚁 TL 11.81—12.20, HL 3.23—3.30, HW 2.68—2.76, HI 83—84, SL 3.17—3.24, SI 117—118, CL 103—108, CW 0.92, CI 85—89, PW 1.43—1.47, OD 0.61—0.63, PI 53, WL 4.15—4.17, ML 4.03。

头、触角柄节和后腹部黑色，有的个体后腹部红褐色；上颚和唇基前端深红色，鞭节、足和腹柄红色；并腹胸颜色较深，为红褐色，足基节末端和转节黄红色，腹节后缘具一浅黄色窄带。毛被中等丰富，并腹胸尤其是中胸和并胸腹节毛被较稀。前胸背板毛的数量变化较大，有13—30根毛。头两侧及下面的毛较短，足具稀疏的倾斜毛。腹柄结具对称的 6 根毛。柔毛被稀疏。

头前部刻点粗糙，身体其余部分刻点细。并腹胸和足较光亮，头和后腹部较暗淡。头很大，较长，后头缘直，触角柄节超出后头缘约1/2柄节长。唇基较窄，具明显的中脊和突出的中叶。上颚具 7 齿。最后 1 齿很小。并腹胸窄长，其背面呈连续的弓形，并胸腹节背板无明显的基面与斜面。前胸背板宽略大于长，其前缘呈颈状。足具纵刻槽，后足胫节圆柱形，无刺。腹柄结小，后面平，前面略凸，顶端圆。后腹部窄。

中型工蚁 TL 8.25—8.33, HL 1.60—1.98, HW 1.08—1.14, HI 55—77, SL 2.40—2.80, SI 211—259, CL 0.58—0.61, CW 0.64—0.70, CI 110—115, PW 1.06—1.09, OD 0.44—0.48, PI 93—101, WL 3.04—3.23, ML 2.88—3.40。

头较小，后部变窄，后头缘呈颈状。唇基具中脊和中叶。上颚具 6 齿。后腹部更窄，足较长，其余同大型工蚁。

小型工蚁 TL 6.89—7.97, HL 1.66—1.89, HW 1.12—1.25, HI 66—67, SL 2.28—2.38, SI 182—213, CL 0.51—0.65, CW 0.69, CI 106—135, PW 0.99—1.07, OD 0.44—0.46, PI 86—88, WL 2.77—2.80, ML 2.70—2.82。

体更小，其余同中型工蚁。

正模：♀，广东省台山县，1983. Ⅷ. 25. 吴坚采。副模：4♀♀，同正模；16♀♀，湖南省衡山县(南岳)、浏阳县，1980 Ⅵ. 20.—1983. Ⅸ. 3.，吴坚、尹世才采；1♀，湖南省大庸市张家界，1987. Ⅸ，赵文霞采；3♀♀，云南省景洪县东风农场，1987. Ⅺ. 25.，吴坚、王常禄采；2♀♀，云南省勐腊县，1987. Ⅺ. 21.，吴坚、王常禄采；3♀♀，云南省景洪县，1984. Ⅶ. 15—17.，欧晓红采；2♀♀，四川省西昌市芦山，1986. Ⅶ. 6.，王敏生采。

本新种与光腹弓背蚁(*C. irritans* (F. Smith))很相似，但本新种体较细长，头颊部有较丰富的直立毛；足胫节圆柱形，无刺；头后部略宽于前部；唇基中叶突出。又与平和弓背蚁(*C. mitis* (F. Smith))极相似，区别是本新种大型工蚁触角柄节长；前胸背板窄；并腹胸背板颜色较深，后腹部第 1 节与其后各节颜色相同。

黄腹弓背蚁 *Camponotus helvus* Xiao et Wang新种(图 6—8)

正模(大型工蚁) TL 9.87, HL 2.41, HW 2.15, HI 89, SL 2.14, SI 100, CL 0.81, CW 0.85, CI 105, PW 1.48, OD 0.59, PI 69, WL 3.37, ML 2.70。

大型工蚁 TL 9.87—10.78, HL 2.41—2.71, HW 2.15—2.56, HI 89—94, SL 2.11—2.14, SI 82—100, CL 0.81—0.90, CW 0.85—0.88, CI 97—105, PW 1.48—1.63, OD 0.59—0.61, PI 64—69, WL 3.37—3.54, ML 2.70—2.91。

头、并腹胸和腹柄结黑色略带褐色，上颚、两颊背前半部分及其间的区域深红色。唇基、

额、颊前部和触角黄红色至红色。足和后腹部蜜黄色或黄红色。后腹部各体节后缘具浅黄色窄带。身体具很稀的直立毛被，头前部和后腹部末端较多，并腹胸背板仅具4—13根毛。颊前部和足胫节有稀而短的柔毛，身体其余部分无柔毛。

体光亮，头及并腹胸刻点细小，但头前部有稀疏的深凹刻，后腹部具十分细的刻纹。头厚，上面较凸，后头缘凹入，触角柄节超出后头缘约1/4柄节长。唇基矩形，中叶突出，前缘中间深凹，不具唇脊。上颚具5齿。并腹胸背面弓形，不很凸，并胸腹节背板斜面凹陷，并腹胸背面不呈连续的弓形。足胫节侧扁，内侧无刺。腹柄结楔形，前面略凸，后面平，顶端圆。后腹部较大，宽卵形。

中型工蚁　TL 8.64—8.91, HL 1.68—1.98, HW 1.62—1.79, HI 90—96, SL 1.88—2.07, SI 116, CL 0.57—0.64, CW 0.77, CI 120—135, PW 1.27—1.30, OD 0.50—0.56, PI 73—78, WL 3.02—3.04, ML 2.63—2.75。

身体较小，腹柄结黑褐至红褐色。触角柄节超出后头缘约1/3—1/2柄节长。其余同大型工蚁。

正模：1♀，湖南省武冈县云山堂，1978.X.6.，尹世才采。副模：4♀♀，同正模；1♀，湖南省桑植县，1981.Ⅵ.8.，童新旺采。

本新种可从颜色上与其它种区别开来。

安宁弓背蚁 *Camponotus anningensis* Wu et Wang新种(图10，11)

正模(中型工蚁)　TL 5.58, HL 1.37, HW 1.24, HI 91, SL 1.38, SI 111, CL 0.44, CW 0.57, CI 129, PW 0.92, OD 0.36, PI 74, WL 2.09, ML 1.61。

中、小型工蚁　TL 4.50—5.58, HL 1.16—1.37, HW 0.97—1.24, HI 84—91, SL 1.31—1.38, SI 111—135, CL 0.38—0.44, CW 0.49—0.57, CI 129, PW 0.72—0.92, OD 0.31—0.36, PI 74, WL 1.75—2.09, ML 1.09—1.61。

体黑色，上颚、触角柄节基部多半部分和足跗节深红色，足其余部分褐黑色至褐红色，腹节后缘具浅黄色窄带。头前部有稀疏的白色直立毛被，头后部、并腹胸、腹柄结及足无直立毛，后腹部具十分稀疏的毛，各腹节除在后缘有一排毛外，仅在背面中央有几根毛，腹末毛稍多。柔毛被稀疏、短而明显。

身体刻点略粗糙，较光亮，但不光滑。头上面很凸，前部略窄于后部，后头缘微凸，后头角圆。触角柄节超出后头缘1/3—1/2柄节长。额脊彼此远离，唇基宽，梯形，无唇脊，中叶很短，前缘圆形。上颚具5齿。并腹胸背面略呈弓形，前-中胸缝很深，并胸腹节背板无明显的基面与斜面。后足胫节略侧扁，内侧无刺。腹柄结前面很凸，后面平，顶端圆。后腹部中等大小，卵形。

正模：1♀，云南省安宁县，1986.Ⅺ.4.，萧刚柔、吴坚采。副模：12♀♀，同正模；1♀，四川省重庆市歌乐山，1986.Ⅷ.，王敏生采。

本新种与缅甸产*C. binghami* Forel相似，区别是本新种身体毛被很稀疏，腹柄结上缘不具长毛。

(续完)

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TAXONOMIC STUDIES ON THE GENUS *CAMPONOTUS* MAYR IN CHINA (HYMENOPTERA, FORMICIDAE)

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Abstract This paper presents a taxonomic study on the genus *Camponotus* Mayr of China. Ten species are new to science. Four species are reported for the first time in China. One subspecies and 3 varieties are raised to species. The type specimens except for those with annotations are kept in the insect collection, the Research Institute of Forestry CAF.

1. *Camponotus spanis* Xiao et Wang, sp. n. (fig. 26)

This new species resembles *C. yessensis* Teranishi, but can be distinguished from the latter by sparse hairs and the opaque body.

Holotype: worker, Jianghua Co., Hunan Province, Ⅶ-1981, Chen Yu leg., paratypes: 5 workers, same as the holotype.

2. *Camponotus fuscivillosus* Xiao et Wang, sp. n. (figs. 27—28)

The new species is related to *C. yessensis*, but differs from it in the following: ① mandible of worker major with 6 teeth; ② the anterior border of the pronotum and the legs are brownish red; ③ hairs on legs are very sparse.

Holotype: worker, Dao Co., Hunan Province, 4-Ⅷ-1982, Tong Xinwang leg., paratypes: 2 workers, same as the holotype; 5 workers, Liuyang Co., Hunan Province, 3-Ⅸ-1982, Tong Xinwang leg.; 14 workers, Henshan Co., Hunan Province, 28-Ⅷ-1980, Tong Xinwang leg..

3. *Camponotus pseudolendus* Wu et Wang, sp. n. (figs. 13—14)

The new species resembles to *C. dolendus* Forel, but in the former, the body covered with more abundant erect hairs (30—40 hairs on pronotum),pubscence on legs except for coxae is absent and is longer than that of the latter, the posterior border of the gaster segments is yellowish, body larger than the latter.

Holotype: worker, Xichang City, Sichuan Province, 6-Ⅶ-1986, Wang Minsheng leg., paratypes: 14 workers, same as the holotype; 2 workers, Anning Co., Yunnan Province, 17-Ⅺ-1987, Wu Jian and Wang Changlu legs.; 3 workers, Chenggong Co., Yunnan Province, 30-Ⅵ-1940. (Three paratypes are deposited in the insect collection, Beijing Agriculture University)

4. *Camponotus chongqingensis* Wu et Wang, sp. n. (figs. 15—16)

The new species is similar to *C. albosparsus* Forel, but can be distinguished from the latter by the following: the head is black; the colour of the pronotum is paler than the other part of the alitrunk which is brownish black in worker major; petiole is black.

Holotype: worker, Chongqing City, Sichuan Province, Ⅶ-1986, Wang Minsheng leg., paratypes: 4 workers, same as the holotype.

5. *Camponotus rubidus* Xiao et Wang, sp. n. (figs. 18—19)

The new species allied to *C. devestivus* Wheeler, but in the former, mandible with 6 teeth, head larger and black, the first gaster segment without a pale spot.

Holotype: worker, Henshan Co., Hunan Province, 4-Ⅹ-1980, Yin Shicai leg., paratypes: 18 workers, same as the holotype.

6. *Camponotus largiceps* Wu et Wang, sp. n. (figs. 20—21)

The new species is similar to *C. devestivus*, but differs from the latter in

the following: colour of alitrunk red to brownish red; head larger; apex of the alitrunk truncate; and mandible with 6 teeth. It is also allied to *C. thraso* Forel, but in the former, the head is larger, broadened posteriorly; mandible is distinctly with 6 teeth; promesonotal suture shallow. The new species is also close to *C. rubidus*, but in worker major of the former, alitrunk is brownish red, the head length is about the same as the head width, clypeus broader, the scape surpasses the occipital border; in worker minor of the former, the head is not narrowed posteriorly.

Variation: One worker major collected from Hunan Province has two spines on apex of the petiole. Specimens collected from Anhui Province are darker than specimens collected from Hunan Province.

Holotype: worker, Liuyang Co., Hunan Province, 13-Ⅵ-1981, Ma Wanyan leg., paratypes: 28 workers, Liuyang Co., Hunan Province, 13-Ⅵ-1981 to 18-Ⅷ-1984, Ma Wanyan leg., Ⅴ-1985, Jiang Yun leg.; 1 worker, Henshan Co., Hunan Province, 21-Ⅴ-1980, Tong Xinwang leg.; 21 workers, Qianshan Co., Anhui Province, Ⅴ-1987 to Ⅸ-1987, Wang Changlu leg..

7. *Camponotus jianghuaensis* Xiao et Wang, sp. n. (figs. 22—23)

The new species is close to *C. carin* Emery, but in the former, pronotal length is near to width in worker major, mandible with 7 teeth, tibiae not channeled, median lobe of clypeus produced anteriorly, head brownish yellow.

Holotype: worker, Jianghua Co., Hunan Province, 9-Ⅵ-1978, Peng Jianwen and Yin Shicai legs., paratypes: 12 workers, same as the holotype.

8. *Camponotus pseudoirritans* Wu et Wang, sp. n. (figs. 24—25)

The new species is very close to *C. irritans*, but can be distinguished from the latter by the following: the body is more slender and longer; cheeks with abundant erect hairs; tibiae cylindrical, without spines; head slightly broadened posteriorly; median lobe of clypeus distinct. The new species is also very similar to *C. mitis* (F. Smith), but in the former, scape of worker major is longer, pronotum narrow, colour of alitrunk darker and the first gaster segment has the same color with the others.

Holotype: worker, Taishan Co., Guangdong Province, 25-Ⅷ-1983, Wu Jian leg., paratypes: 4 workers, same as the holotype; 16 workers, Henshan and Liuyang Counties, Hunan Province, 20-Ⅵ-1980 to 3-Ⅸ-1983, Wu Jian and Yin Shicai legs.; 1 worker, Dayong City, Hunan Province, Ⅸ-1987, Zho Wenxia leg.; 3 workers, Jinghong Co., Yunnan Province, 25-Ⅸ-1987, Wu Jian and Wang Changlu legs.; 2 workers, Mengla Co., Yunnan Province, 21-Ⅺ-1987, Wu Jian and Wang Changlu legs.; 3 workers, Jinghong Co., Yunnan Province, 15-Ⅶ-1984 to 17-Ⅶ-1984, Ou Xiaohong leg.; 2 workers,

Xichang City, Sichuan Province, 6-Ⅶ-1986, Wang Minsheng leg.; 3 workers, Wuyi Mountain, Fujian Province, 15-Ⅷ-1988, Wu Jian leg..

9. *Camponotus helvus* Xiao et Wang, sp. n. (figs. 6—8)

The new species can be easily distinguished from other species by its colour.

Holotype: worker, Wugong Co., Hunan Province, 6-Ⅹ-1978, Yin Shicai leg., paratypes: 4 workers, same as the holotype; 1 worker, Sangzhi Co., Hunan Province, 8-Ⅵ-1981, Tong Xinwang leg..

10. *Camponotus anningensis* Wu et Wang, sp. n. (figs. 10—11)

The new species is near to *C. binghami* Forel, but in the former, the pilosity is very sparse, apex of the petiole without hairs.

Holotype: worker, Anning Co., Yunnan Province, 4-Ⅺ-1986, Xiao Gangrou and Wu Jian legs., paratypes: 12 workers, same as the holotype; 1 worker, Chongqing City, Sichuan Province, Ⅶ-1986, Wang Minsheng leg..

11. *Camponotus tonkinus* Santschi, new status, new record

It is formerly taken as a variety of *C. japonicus*. It has remarkable golden hairs which is distinctly different from the latter.

Distribution: Xichang City, Sichuan Province.

12. *Camponotus exiguoguttatus* Forel, new status

Distributions: Shandong Province, Yunnan Province, Fujian Province, Guangdong Province, Hong Kong.

13. *Camponotus albosparsus* Forel, new status

Distributions: Henan Province, Hunan Province, Anhui Province, Shanghai Municipality, Jiangsu Province, Zhejiang Province, Fujian Province, Taiwan Province, Hong Kong.

14. *Camponotus quadrinotatus* Forel, new status

Distributions: Beijing Municipality, Shanghai Municipality, Jiangsu Province, Hubei Province, Hainan Province.

15. *Camponotus singularis* (F. Smith), new record (fig. 4)

Distribution: Jinghong Co., Yunnan Province.

16. *Camponotus selene* Emery, new record (fig. 5)

Distribution: Jianghua Co., Hunan Province.

Key words Hymenoptera; Formicidae; *Camponotus*; taxonomy

(The end)

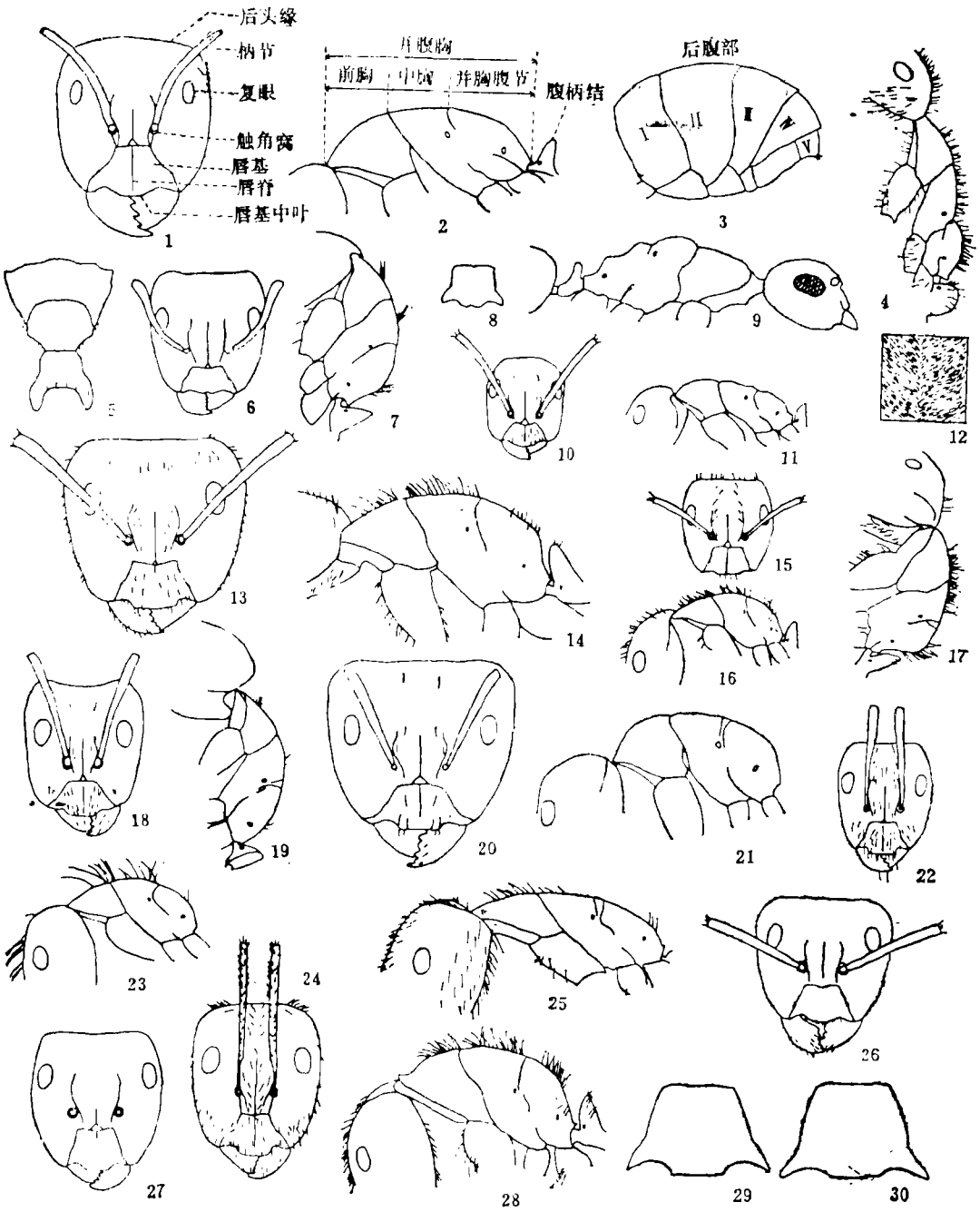

图1—30. 弓背蚁属工蚁。1—3. 弓背蚁属工蚁特征(1.头，2.并腹胸，3.后腹)；4.红头弓背蚁并腹胸侧面观；5.钳弓背蚁并腹胸背面观；6—8. 黄腹弓背蚁大型工蚁(6.头，7.并腹胸，8.唇基)；9.贝氏弓背蚁小型工蚁头及并腹胸侧面观(仿Emery 1893)；10—11.安宁弓背蚁中型工蚁(10.头，11.并腹胸)；12.哀弓背蚁后腹第2节背面观，示柔毛被；13—14.拟哀弓背蚁大型工蚁(13.头，14.并腹胸)；15—16. 重庆弓背蚁大型工蚁(15.头，16.并腹胸)；17.弗里德弓背蚁大型工蚁并腹胸侧面观；18—19.黑褐弓背蚁大型工蚁(18.头，19.并腹胸)；20—21. 大头弓背蚁大型工蚁(20.头，21.并腹胸)；22—23.江华弓背蚁大型工蚁(22.头，23.并腹胸)；24—25. 拟光腹弓背蚁大型工蚁(24.头，25. 并腹胸)；26.少毛弓背蚁大型工蚁头部正面观；27—28. 褐毛弓背蚁大型工蚁(27.头，28.并腹胸)；29.日本弓背蚁大型工蚁唇基；30.广弓布背蚁大型工蚁唇基。