



Three new species of the subfamily Opisthocosmiinae from China (Dermaptera, Forficulidae), with new synonymies and combinations

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Abstract

This article contains descriptions of three new species of Chinese Dermaptera: *Timomenus bicolor* **sp. nov.** from Xizang, *Timomenus bii* **sp. nov.** from Yunnan and *Cordax serratus* **sp. nov.** from Guangxi. Four new specific synonymies and three new combinations are proposed. We also emend the generic diagnosis of *Mesolabia* Shiraki, 1906 by providing characteristics of the male. Keys to the species of *Timomenus*, *Cordax* and *Mesolabia* from China are provided.

Key words: Dermaptera, Opisthocosmiinae, new species, China

Introduction

The subfamily Opisthocosmiinae was proposed by Verhoeff (1902). It is a rather heterogenous subfamily, including a large number of Oriental species. There are eight genera represented in China (*Chaetocosmia* Nishikawa, 1973; *Cordax* Burr, 1910; *Eparchus* Burr, 1907; *Hypurgus* Burr, 1907; *Mesolabia* Shiraki, 1906; *Paratimomenus* Steinmann, 1974; *Syntonus* Burr, 1910; *Timomenus* Burr, 1907). About 26 species have been recorded from China (Chen & Ma 2004). In this paper, three new species are described as *Timomenus bicolor* **sp. nov.**, *Timomenus bii* **sp. nov.** and *Cordax serratus* **sp. nov.**. Several junior objective synonymies are proposed: *Eutimomena paradoxa* Bey-Bienko, 1970 is synonymized with *Cordax claviger* (Burr, 1907), *Timomenus morsus* Steinmann, 1982 and *Timomenus iteratus* Steinmann, 1982 with *T. aeris* (Shiraki, 1906), and *Timomenus cuneatus* Zhang, 1991 with *Cordax unidentatus* (Borelli, 1915). Three new combinations are proposed: *Cordax unidentatus* (Borelli, 1915) **comb. nov.** (= *Timomenus unidentatus* Borelli, 1915), *Cordax claviger* (Burr, 1907) **comb. nov.** (= *Pterygida claviger* Burr, 1907), and *Mesolabia ramosa* (Zhang, Ma & Chen, 1992) **comb. nov.** (= *Opisthocosmia ramosa* Zhang, Ma & Chen, 1992). All the taxa are deposited in the Shanghai Entomological Museum (SHEM). All body and forceps length measurements are expressed in mm.

Timomenus Burr, 1907

Timomenus Burr, 1907: 96.

Type-species: *Opisthocosmia oannes* Burr, 1900.

Key to species of genus *Timomenus* Burr, 1907 from China (male only)

- 1 Forceps bases far apart 2
- Forceps bases nearly touching. 7
- 2 Both sides of ultimate tergite without process 3
- Both sides of ultimate tergite with ear-form process. *T. amblyotus* Ma & Chen, 1992

3	Forceps with dorsal and inner teeth	4
-	Forceps with inner tooth only	6
4	Antennae unicolorous; abdomen dark brown; forceps straight	5
-	Antennae bicolorous; abdomen yellowish brown, both sides blackish; forceps incurved	<i>T. bicolor</i> sp. nov.
5	Inner tooth of forceps in distal half	<i>T. oannes</i> (Burr, 1900)
-	Inner tooth of forceps in proximal half	<i>T. komarovi</i> (Semenov, 1901)
6	Forceps with very long inner tooth, obliquely raised	<i>T. bii</i> sp. nov.
-	Forceps with shorter inner tooth, not raised	<i>T. shelfordi</i> (Burr, 1904)
7	Forceps with dorsal tooth	8
-	Forceps without dorsal tooth	10
8	Body reddish brown without brilliant lustre; sides of abdominal tergites 5–8 without prominent tubercles	<i>T. aesculapius</i> (Burr, 1905)
-	Body black with brilliant lustre; sides of abdominal tergites 5–8 with prominent tubercles	9
9	Body with purple lustre; forceps distinctly upcurved in side view	<i>T. nevillei</i> (Burr, 1904)
-	Body with blue lustre; forceps not upcurved in side view	<i>T. lugens</i> (Bormans, 1894)
10	Forceps with inner flange at base	<i>T. dilatatus</i> Zhang <i>et al.</i> , 1999
-	Forceps with inner tooth in half	11
11	Body dark brown ; inner tooth of forceps in half	<i>T. pieli</i> Hincks, 1940
-	Body reddish brown ; inner tooth of forceps in distal half	<i>T. aeris</i> (Shiraki, 1906)

***Timomenus oannes* (Burr, 1900)**

Opisthocosmia oannes Burr, 1900: 85.

Timomenus oannes Burr, 1907: 96.

Measurements. Total body: ♂ 15.0–17.0, ♀ 18.0; forceps: ♂ 5.0–6.0, ♀ 6.0–7.0.

Material. 1♂, 2♀♀, Tongmu, Chong'an, Fujian, China, elev. 790–1155m, 1960.VI.16–25, collected by Jin Gen-Tao & Lin Yang-Ming; 1♀, Aotou, Chong'an, Fujian, China, elev. 970m, 1960.VII.2, collected by Jin Gen-Tao; 1♂, Yuping, Pingbian, Yunnan, China, elev. 300m, 2009.V.19, collected by Liu Xian-Wei *et al.*.

Distribution. China (Fujian, Hainan, Yunnan, Tibet), Burma, Vietnam.

***Timomenus komarovi* (Semenov, 1901)**

Opisthocosmia komarovi Semenov, 1901: 98.

Timomenus komarovi Burr, 1907: 96.

Apterygida femorata Matsumura, 1913: 1 (synonymized by Shiraki, 1928: 22).

Measurements. Total body: ♂ 24.5–26.5, ♀ 15.0–17.0; forceps: ♂ 10.0–11.5, ♀ 5.5–7.5.

Material. 1♂, Shennongjia, Hubei, China, 1983.VII.7, collected by Jin Gen-Tao & Liu Zu-Yao; 1♀, Hefeng, Hubei, China, 1986.VI.3–4, collected by Liu Zu-Yao & Xie Rong-Dong; 1♂, 1♀, Rensaping, Fengyang Mountain, Longquan, Zhejiang, China, elev. 1200m, 2008.VIII.3–4, collected by Liu Xian-Wei & Bi Wen-Xuan; 1♀, Xitianmu, Lin'an, Zhejiang, China, elev. 1069m, 2010.VII.28–31, collected by He Jian-Ming.

Distribution. China (Shandong, Zhejiang, Anhui, Fujian, Taiwan, Hunan, Hubei, Sichuan), Korea, Philippines.

***Timomenus bicolor* sp. nov.**

(Figs. 1–6)

Description. Male size medium, body depressed. Head smooth, slightly swollen. Eyes prominent, length slightly shorter than genae, lateral margins rounded, sutures indistinct. Antennae long and slender, 13 joints, first joint decidedly longer than the distance between the antennal bases; third and fourth joints almost equal in length, cylindrical, but shorter than fifth. Pronotum smooth, almost as broad as long, anterior margin truncate, posterior very feebly rounded, lateral margins weakly convex, hind margin rounded; prozona slightly swollen, median sulcus distinct, with paired depressions on both sides, metazona flat. Elytra and wings fully developed. Elytra smooth,

about twice as long as pronotum, external margins without ridge, anterior margins truncate. Scales of wings slightly shorter than pronotum, smooth. Legs rather short, anterior femora thick, hind tarsus with first joint almost equal to third joint, second joint strongly enlarged. Abdomen very depressed, stink-glands feeble but distinct. Last dorsal segment narrowed to the apex, above with two oblique ridges and united short, stumpy tubercles (Fig. 1). Subgenital plate with some punctations, posterior margin broadly rounded (Fig. 2). Pygidium not prominent, apex with short, stumpy tubercles. Forceps widely separated at base, narrowed to the apex and incurved, with strong dorsal tooth and smaller median tooth (Fig. 3), sometimes the median tooth absent. Genitalia (Figs. 4) with aciculiform parameres, basal vesicle with a small pilous sclerotized plate, virga short and curved.

Female similar to male, but subgenital plate shorter (Fig. 5); forceps slender, simple, nearly touching at base, internal margins crenulate (Fig. 6).

Coloration. Generally yellowish. Head, first antennal joint and glandular callosities black. Scales of wing yellowish, along inner and apical margin with dark band.

Measurements. Total body: ♂ 12.5–14.0, ♀ 14.0; forceps: ♂ 4.0–4.5, ♀ 5.0.

Material. Holotype ♂, paratypes 1♂, 2♀♀, Chayu, Xizang, China, elev. 1600m, 2010.VIII.24–28, collected by Bi Wen-Xuan.

Distribution. China Xizang (Tibet).

Discussion. This new species is very similar to *T. oannes* (Burr, 1900), but differs in that the forceps are distinctly flat at base, and the distance between the inner and dorsal teeth is equal to the distance between the dorsal teeth and the base.

Timomenus bii sp. nov.

(Figs. 7–12)

Description. Male size medium, body slender. Head smooth, swollen. Eyes prominent, length distinctly shorter than genae, sutures indistinct. Antennae long and slender, 13 joints, first joint decidedly longer than the distance between the antennal bases, third joint slightly longer than fourth, but shorter than fifth. Pronotum smooth, almost as broad as long, anterior margin truncate, posterior very feebly rounded, lateral margins narrowed posteriorly, hind margin rounded; prozona slightly swollen, median sulcus distinct, with paired depressions on both sides, metazona flat. Elytra and wings fully developed. Elytra smooth, about twice as long as pronotum, external margins without ridge, anterior margins truncate. Scales of wings slightly shorter than pronotum. Legs long and slender, anterior femora thick, hind tarsus with first joint almost equal to third joint, second joint strongly enlarged. Abdomen smooth, with very indistinct, sparse punctations, stink-glands feeble but distinct, last dorsal segment somewhat broader than long, narrowed to the apex, above with two long keels and united with pair of slightly raised tubercles (Fig. 7). Subgenital plate broad, with broadly rounded posterior margin (Fig. 8). Pygidium not prominent, narrowed to the apex, hind margin sinuate. Forceps separated at base, narrowed to the apex and incurved, internally serrated in basal half, armed with a very long tooth in half and obliquely raised (Fig. 9). Genitalia (Figs. 10) with parameres as type, basal vesicle with a semicircular sclerotized plate and ventral margin denticulate, virga long, apex and base distinctly widened.

Female similar to male, but subgenital plate shorter (Fig. 11), pygidium prominent, with the apex truncate. Forceps slender, simple, nearly touching at base, incurved on the apex, internal margins crenulate (Fig. 12).

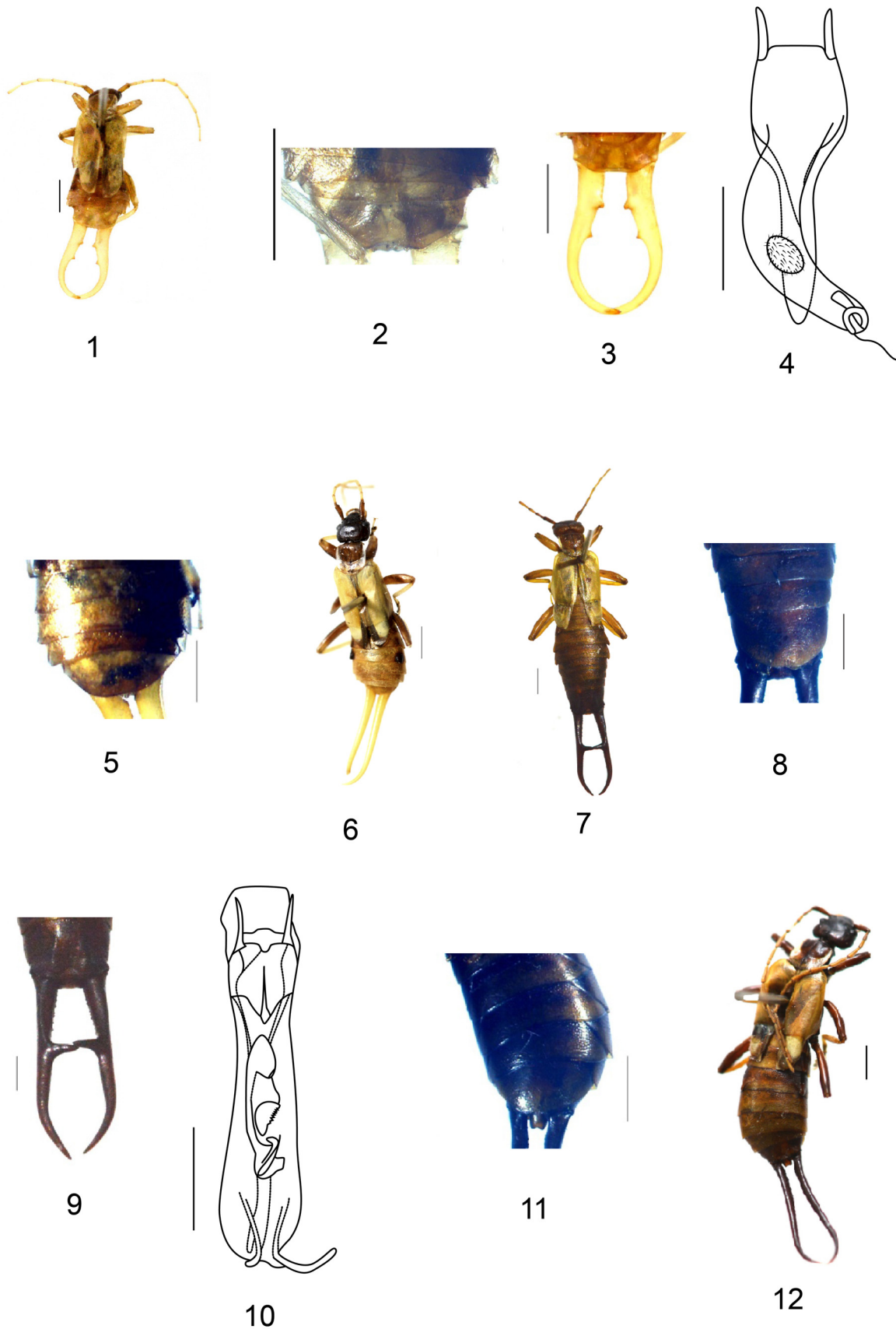
Coloration. Generally blackish brown, antennae brown with basal two joints dark brown, elytra pale brown, scales of wings dark brown, with a yellowish spot at base.

Measurements. Total body: ♂ 19.0, ♀ 18.0; forceps: ♂ 6.0, ♀ 5.5.

Material. Holotype ♂, paratype 2♀♀, Pianmazhen, Lushui, Yunnan, China, elev. 2300m, 2010.VI.24–25, collected by Bi Wen-Xuan.

Distribution. China (Yunnan).

Discussion. This new species is very similar to *T. shelfordi* (Burr, 1904), but differs by having forceps with a very long, obliquely raised inner tooth.



FIGURES 1–12. *Timomenus* Burr, 1907. 1–6: *T. bicolor* sp. nov. 7–12: *T. bii* sp. nov. 1, 7) Body of male, dorsal view. 2, 8) Subgenital plate of male, ventral view. 3, 9) Forceps of male, dorsal view. 4, 10) Genitalia of male, dorsal view. 5, 11) Subgenital plate of female, ventral view. 6, 12) Body of female, dorsal view. Scale bars = 2 mm.

***Timomenus shelfordi* (Burr, 1904)**

Opisthocosmia shelfordi Burr, 1904: 312.

Eparchus shelfordi Burr, 1907: 121.

Timomenus shelfordi Burr, 1911: 93.

Measurements. Total body ♂ 15.0; forceps ♂ 5.0.

Material. 1♂, Diaoluoshan, Lingshui, Hainan, China, 2011.IX.16–18, collected by Liu Xian-Wei.

Distribution. China (Zhejiang, Jiangxi, Taiwan, Guangdong, Hainan), Vietnam, Malaysia.

***Timomenus amblyotus* Ma & Chen, 1992**

Timomenus amblyotus Ma & Chen, 1992: 93.

Distribution. China (Shanxi, Hubei, Hunan, Sichuan, Hainan).

***Timomenus lugens* (Bormans, 1894)**

Opisthocosmia lugens Bormans, 1894: 308.

Eparchus lugens Burr, 1907: 121.

Timomenus lugens Burr, 1910: 93.

Measurements. Total body: ♂ 13.0–22.0, ♀ 10.0–21.0; forceps: ♂ 4.0–10.0, ♀ 3.5–9.5.

Material. 1♂, Menghai, Yunnan, China, 1973.XI.27, collected by Hu Jin-Lin; 1♂, Beibeng, Motuo, Tibet, China, 1979.VIII.12, collected by Jin Gen-Tao & Wu Jian-Yi; 1♀, Didong, Motuo, Tibet, China, elev. 1120m, 1979.XI.21, collected by Jin Gen-Tao & Wu Jian-Yi; 1♂, 5♀♀, Motuo, Tibet, China, elev. 980–1520m, 1980.II.10–V.29, collected by Jin Gen-Tao & Wu Jian-Yi; 1♀, Jinping, Yunnan, China, elev. 1350m, 1982.VI.13, collected by Jin Gen-Tao & Wu Jian-Yi; 1♀, Mengla, Yunnan, China, 1991.IX.3, collected by Liu Zu-Yao *et al.*; 1♀, Mangshi, Yunnan, China, 1991.IX.22, collected by Liu Zu-Yao *et al.*; 4♂♂, 3♀♀, Jinuo, Yunnan, China, 1995.VIII.5–9, collected by Liu Xian-Wei *et al.*; 1♂, 2♀♀, Mawei, Pingbian, Yunnan, China, elev. 900–950m, 2009.V.22–23, collected by Liu Xian-Wei *et al.*; 1♂, Sancha River, Xishuangbanna, Yunnan, China, elev. 750m, 2009.VI.9–10, collected by Liu Xian-Wei *et al.*

Distribution. China (Hubei, Zhejiang, Jiangxi, Guangxi, Sichuan, Yunnan, Tibet), Myanmar, India, Bhutan, Thailand, Malaysia.

***Timomenus nevilli* (Burr, 1904)**

Opisthocosmia nevilli Burr, 1904: 309.

Eparchus nevilli Burr, 1907: 121.

Timomenus nevilli Burr, 1910: 197.

Measurements. Total body: ♂ 10.0–21.0, ♀ 13.0–18.5; forceps: ♂ 5.5–10.5, ♀ 5.0–8.0.

Material. 2♀♀, Motuo, Tibet, China, elev. 1350m, 1979.IX.8, collected by Jin Gen-Tao & Wu Jian-Yi; 3♀♀, Beibeng, Motuo, Tibet, China, elev. 940m, 1979.X.17–24, collected by Jin Gen-Tao & Wu Jian-Yi; 2♂♂, 3♀♀, Motuo, Tibet, China, elev. 1310–1470m, 1980.II.10–27, collected by Jin Gen-Tao & Wu Jian-Yi.

Distribution. China (Fujian, Tibet), India, Bhutan; Nepal, Sikkim.

***Timomenus aesculapius* (Burr, 1905)**

Opisthocosmia aesculapius Burr, 1905: 230.

Eparchus aesculapius Burr, 1907: 121.
Timomenus aesculapius Burr, 1910: 196.

Measurements. Total body: ♂ 17.0–21.0, ♀ 18.5–24.0; forceps: ♂ 4.0–7.0, ♀ 6.0–8.0.

Material. 1♀, Gongyihaizhan, Liziping, Shimian, Sichuan, China, elev. 2100m, 2007.VII.22–25, collected by Liu Xian-Wei *et al.*; 1♂, 1♀, Lushui, Yunnan, China, elev. 2300–2700m, 2010.VI.21–23, collected by Bi Wen-Xuan; 2♂♂, 1♀, Nagu, Deqin, Yunnan, China, elev. 2300m, 2010.VII.11, collected by Bi Wen-Xuan.

Distribution. China (Guizhou, Sichuan, Yunnan, Tibet), Vietnam, Burma, Bhutan, India, Indonesia.

***Timomenus pieli* Hincks, 1941**

Timomenus pieli Hincks, 1941: 38.

Measurements. Total body: ♂ 14.0; forceps: ♂ 5.0.

Material. 1♂, Shuimanxiang, Five Fingers Mountain, Hainan, China, 2011.IX.13–15, collected by Liu Xian-Wei.

Distribution. China (Guangdong, Hainan), Vietnam.

***Timomenus aeris* (Shiraki, 1906)**

Apterygida aeris Shiraki, 1906: 9.

Timomenus aeris Burr, 1911: 93.

Timomenus taboensis Shiraki, 1928: 23 (synonymized by Brindle, 1969: 245).

Timomenus iteratus Steinmann, 1982: 370 (**Syn. nov.**)

Timomenus morsus Steinmann, 1982: 373 (**Syn. nov.**)

Measurements. Total body: ♀ 14.0; forceps: ♀ 5.0.

Material. 4♀♀, Taiwan, China, 1935.V.27, collected by Ouchi; 1♀, Mushan, Taiwan, China, 1935.VII.6, collected by Ouchi; 1♀, Longhu Mountain, Long'an, Guangxi, China, 1999.VIII.29–IX.1, collected by Liu Xian-Wei *et al.*.

Distribution. China (Zhejiang, Hunan, Fujian, Hainan, Taiwan, Guangxi), Vietnam, Indonesia.

Discussion. In Dermaptera, many species show great variation in the forceps of male. *Timomenus morsus* Steinmann, 1982 refers to the lighter form of this species, in which the head and pronotum are yellowish. *Timomenus iteratus* Steinmann, 1982 refers to the f. *macrolabia* of this species.

***Timomenus dilatatus* Zhang *et al.*, 1999**

Timomenus dilatatus Zhang *et al.*, 1999: 77–78.

Measurements. Total body: ♂ 13.0, ♀ 13.0–14.0; forceps: ♂ 4.0, ♀ 4.0–5.0.

Material. 1♂, Dazhulan, Huangkeng, Jianyang, Fujian, China, 1957.VIII.9, collected by Fan Zi-De; 4♀♀, Tongmu, Chong'an, Fujian, China, elev. 790–1150m, 1960.VI.15–26, collected by Jin Gen-Tao & Lin Yang-Ming; 1♀, Baishanzu, Qingyuan, Zhejiang, China, elev. 1050m, 1963.IV.23, collected by Jin Gen-Tao.

Distribution. China (Fujian, Zhejiang).

***Cordax* Burr, 1910**

Cordax Burr, 1910: 184.

Eutimomena Bey-Bienko, 1970: 1819 (synonymized by Srivastava, 1987: 52).

Type-species: *Forficula armata* De Haan, 1842.

Key to species of genus *Cordax* Burr, 1910 from China (males only)

- 1 Forceps nearly touching at base 2
- Forceps widely separated at base 3
- 2 Forceps short and thick, inner tooth in apical half *C. armatus* (De Haan, 1842)
- Forceps long and thin, inner tooth in basal half *C. claviger* (Burr, 1917)
- 3 Body blackish brown; forceps straight, inner margin not serrated in basal half. *C. unidentatus* (Borelli, 1915)
- Body pale brown; forceps incurved, inner margin serrated in basal half *C. serratus* sp. nov.

Cordax armatus (De Haan, 1842)

(Figs. 13–16)

Forficula armatus De Haan, 1842: 243.

Opisthocosmia armata Bormans, 1888: 444.

Cordax armatus Burr, 1910: 185.

Measurements. Total body: ♂ 13.0–18.0, ♀ 14.0–18.0; forceps: ♂ 5.5, ♀ 5.0–6.0.

Material. 1♂, Da'an, Fujian, 1959.VI.25, collected by Jin Gen-Tao & Lin Yang-Ming; 1♂, Beibeng, Motuo, Tibet, China, elev. 1050m, 1979.VII.24, collected by Jin Gen-Tao & Wu Jian-Yi; 2♂♂, 4♀♀, Beibeng, Motuo, Tibet, China, 1979.VIII.5–XI.6, collected by Jin Gen-Tao & Wu Jian-Yi; 1♀, Didong, Motuo, Tibet, China, elev. 920m, 1980.VII.5, collected by Jin Gen-Tao & Wu Jian-Yi; 2♂♂, 3♀♀, Jinxiu, Guangxi, China, 1981.IX.17–X.21, collected by Jin Gen-Tao; 1♂, Old Mountain, Jinxiu, Guangxi, China, elev. 1100m, 1981.X.13, collected by Jin Gen-Tao; 1♀, Hekou, Yunnan, China, elev. 130m, 1982.VI.5, collected by Jin Gen-Tao & Wu Jian-Yi; 1♀, Huangniushi, Jiulian Mountain, Jiangxi, elev. 500m, 1986.IX.10, collected by Jin Gen-Tao & Lin Yang-Ming; 1♂, Sancha River, Jinghong, Yunnan, China, 1995.XI.11–12, collected by Xu Wen-Hong; 2♀♀, Sancha River, Xishuangbanna, Yunnan, China, elev. 750m, 2009.VI.9–10, collected by Liu Xian-Wei *et al.*; 1♂, 2♀♀, Nonggang, Longzhou, Guangxi, China, elev. 200m, 2013.VII.10–13, collected by Zhang Hai-Guang *et al.*; 2♂♂, Dongsai, Maolan, Libo, Guizhou, China, elev. 600–700m, 2014.VIII.9–10, collected by Sun Mei-Ling; 2♀♀, Weng'ang, Maolan, Libo, Guizhou, China, elev. 500–800m, 2014.VIII.9–11, collected by Sun Mei-Ling.

Distribution. China (Fujian, Jiangxi, Hainan, Guangxi, Yunnan, Tibet, Guizhou), Burma, Borneo, Celebes, Sumatra.

Cordax claviger (Burr, 1917) comb. nov.

(Figs. 17–19)

Kosmetor claviger Burr, 1917: 61.

Pterygida claviger Steinmann, 1989: 778.

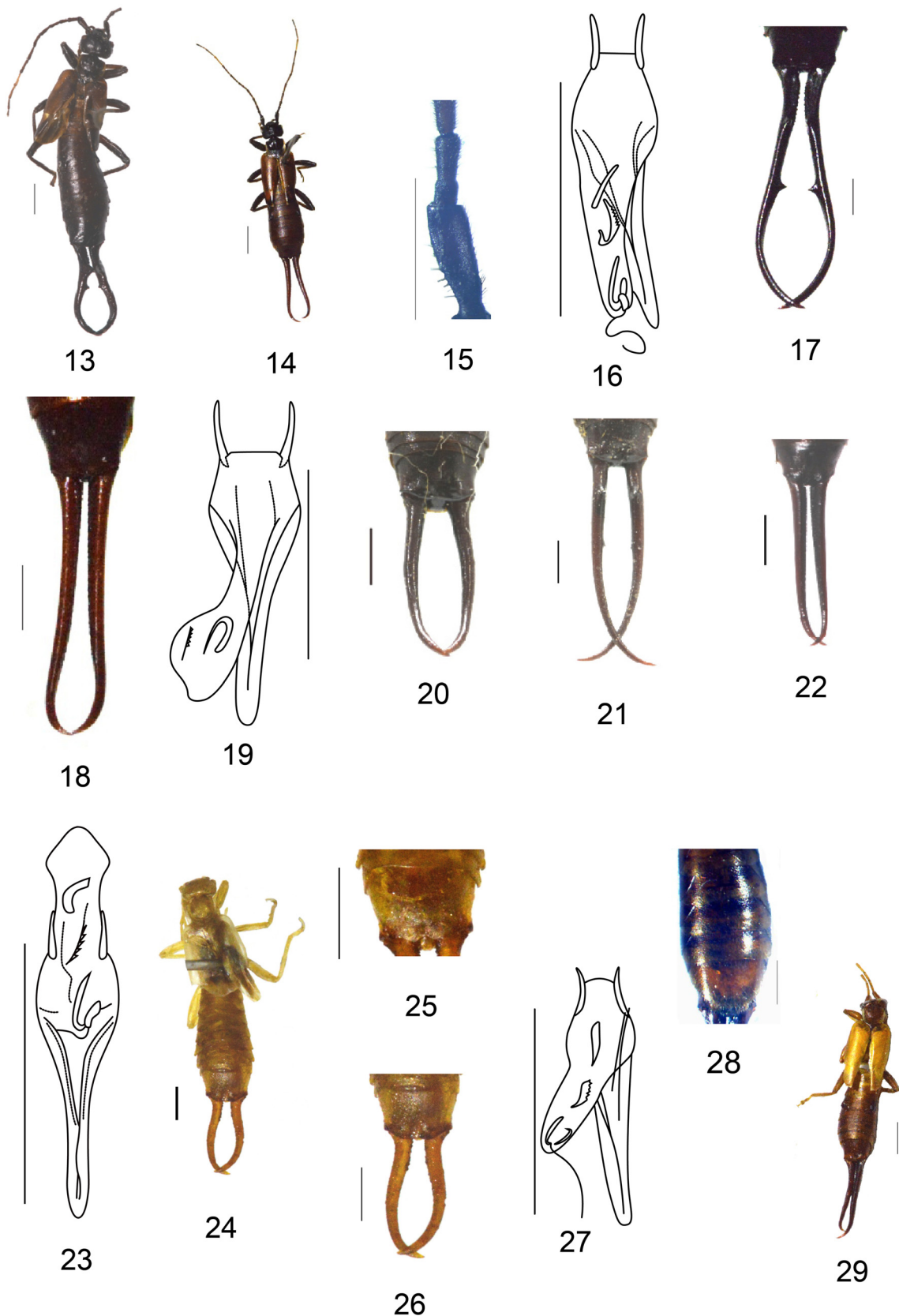
Eutimomena paradoxa Bey-Bienko, 1970: 1819 (**Syn. nov.**)

Measurements. Total body: ♂ 20.0–23.0, ♀ 18.0–20.0; forceps: ♂ 10.0–12.0, ♀ 6.0–7.0.

Material. 1♂, Wuyanling, Taishun, Zhejiang, China, 1987.VIII.27, collected by Liu Xian-Wei *et al.*; 1♂, 2♀♀, Rensaping, Fengyang Mountain, Longquan, Zhejiang, China, elev. 1100–1500m, 2008.VII.30–VIII.4, collected by Liu Xian-Wei *et al.*.

Distribution. China (Zhejiang, Guangxi), Vietnam.

Discussion. This species was described by Burr, 1917 in the genus *Kosmetor*. Steinmann (1989) transferred it to the genus *Pterygida*. The first antennal joint is flat above with sides forming a kind of ridge, and therefore it should belong to the genus *Cordax*. *Eutimomena paradoxa* Bey-Bienko, 1970 was synonymized with *Cordax armatus* (Haan, 1842) by Srivastava (1987), but on the basis of its original description it appears to be identical to *C. claviger*. Therefore, we propose *E. paradoxa* as a junior subjective synonym of *C. claviger*.



FIGURES 13–29. *Cordax* Burr, 1910. 13–16: *C. armatus* De Haan, 1842. 17–19: *C. claviger* (Burr, 1917). 20–23: *C. unidentatus* (Borelli, 1915). 24–29: *Cordax serratus* sp. nov. 13, 24) Body of male, dorsal view. 25) Subgenital plate of male, ventral view. 17, 20, 21, 26) Forceps of male, dorsal view. 16, 19, 23, 27) Genitalia of male, dorsal view. 15) First antennal joint of female, dorsal view. 28) Subgenital plate of female, ventral view. 14, 29) Body of female, dorsal view. 18, 22) Forceps of female, dorsal view. Scale bars = 2 mm.

***Cordax unidentatus* (Borelli, 1915) comb. nov.**

(Figs. 20–23)

Timomenus unidentatus Borelli, 1915: 4.

Timomenus inermis Borelli, 1915: 5. (**Syn. nov.**)

Timomenus simplicis Shiraki, 1928: 23. (synonymized by Brindle, 1969: 248).

Timomenus cuneatus Zhang, 1991: 291. (**Syn. nov.**)

Timomenus paradoxa Chen & Ma, 2004: 236. (nec Bey-Bienko, 1970: 289).

Measurements. Total body: ♂ 20.0, ♀ 15.0; forceps: ♂ 6.5–8.5, ♀ 5.0.

Material. 1♀, Jinrao Mountain, Fujian, 1959.VI.12, collected by Jin Gen-Tao & Lin Yang-Ming; 1♂, Da'an, Fujian, 1959.XI.26, collected by Jin Gen-Tao & Lin Yang-Ming; 1♀, Guadun, Chong'an, Fujian, China, elev. 790–1155m, 1960.IV.5, collected by Jin Gen-Tao & Lin Yang-Ming; 6♀♀, 3♂♂, Tongmu, Chong'an, Fujian, China, elev. 790–1155m, 1960.VI.17–28, collected by Jin Gen-Tao & Lin Yang-Ming; 3♀♀, Aotou, Jianyang, Fujian, elev. 970m, 1960.VI.20–27, collected by Jin Gen-Tao & Lin Yang-Ming; 1♂, Huangkeng, Jianyang, Fujian, China, 1960.VII.7, collected by Jin Gen-Tao & Lin Yang-Ming; 1♀, Xiyang, Yong'an, Fujian, 1962.IV.23, collected by Jin Gen-Tao & Lin Yang-Ming; 1♂, Dazhulan, Wuyi Mountain, Fujian, China, 1994.VIII.27–IX.3, collected by Jin Xing-Bao & Yin Hai-Sheng; 1♂, Fengyang Mountain, Longquan, Zhejiang, China, elev. 1100–1500m, 2008.VII.30–VIII.4, collected by Liu Xian-Wei *et al.*; 1♂, Shunxiwu, Qingliangfeng, Lin'an, Zhejiang, China, elev. 400m, 2008.VIII.9–10, collected by Liu Xian-Wei *et al.*; 4♀♀, Gutian Mountain, Kaihua, Zhejiang, China, elev. 330–800m, 2012.IX.18–X.16, collected by Liu Xian-Wei *et al.*; 2♂♂, Mao'er Mountain, Guangxi, China, elev. 500–1100m, 2013.VII.30–VIII.6, collected by Zhang Hai-Guang *et al.*; 1♂, 1♀, Daming Mountain, Guangxi, China, elev. 1250m, 2013.VII.19–25, collected by Liu Xian-Wei *et al.*

Distribution. China (Zhejiang, Fujian, Jiangxi, Taiwan, Guizhou, Guangxi).

Discussion. This species is very similar to *C. armatus*. The first antennal joint is flat above with sides forming a kind of ridge, and therefore it belongs to *Cordax*. *Cordax unidentatus* appears to be widely distributed in China. It shows great variation in the shape of male forceps. The descriptions of *T. inermis* from Guizhou and *T. cuneatus* from Guizhou only differ from *C. unidentatus* in minute differences that fall well within the variational limits of the latter; therefore, both are considered synonyms of *C. unidentatus*.

***Cordax serratus* sp. nov.**

(Figs. 24–29)

Description. Male size medium, body slender. Head smooth, swollen. Eyes prominent, nearly as long as genae in length, sutures indistinct. Antennae long and slender, 11 joints, first joint decidedly longer than the distance between the antennal bases, above flat, with distinct lateral ridges; third and fourth joints almost equal, but shorter than fifth. Pronotum smooth, almost as broad as long, anterior and hind margins rounded, lateral margins parallel, prozona slightly tumid, median sulcus distinct, with paired depressions on both sides, metazona flat. Elytra and wings completely developed. Elytra smooth, about twice as long as pronotum, external margins without ridge, anterior margins truncate. Scales of wings slightly shorter than pronotum. Legs short, anterior femora thick, hind tarsus with first joint almost equal to third joint, second joint strongly enlarged. Abdomen smooth, with very indistinct, sparse punctations, stink-glands feeble but distinct, seventh to ninth segments each with a weak tubercle, last dorsal segment transverse and parallel, half as broad as long, above with paired of slightly raised tubercles over the roots of the forceps (Fig. 24). Subgenital plate transverse, with broadly rounded posterior margin and some punctations (Fig. 25). Pygidium not transverse, with short stumpy tubercles. Forceps widely separated at base, narrowed to the apex and incurved, internal margins serrated in basal half (Fig. 26). Genitalia (Figs. 27) with parameres as type, basal vesicle with two narrow sclerotized plates and one of them armed with denticulations, virga small.

Female similar to male, but subgenital plate broader (Fig. 28), forceps slender, simple, nearly touching at base, incurved at the apex, internal margins crenulate (Fig. 29).

Coloration. Generally pale yellowish brown, nearly unicolorous.

Measurements. Total body: ♂ 15.0, ♀ 15.0; forceps: ♂ 4.0, ♀ 6.0.

Material. Holotype ♂, Longhushan, Longan, Guangxi, China, 1995.VIII.1, collected by Liu Xian-Wei *et al.*; paratype 1♀, Fengyang Mountain, Longquan, Zhejiang, China, elev. 1100–1500m, 2008.VII.30–VIII.4, collected by Liu Xian-Wei & Bi Wen-Xuan.

Distribution. China (Guangxi, Zhejiang).

Discussion. This new species is very similar to *C. inermis* (Borelli, 1915), but differs in that the forceps of the male are shorter and strongly curved, and the internal margins are serrated in the basal one-third.

Mesolabia Shiraki, 1906

Mesolabia Shiraki, 1906: 12

Generic diagnosis. Size medium; body slender. Head tumid and smooth, suture distinct, antennae with 12 joints, first joint length almost equal to the distance between the antennal bases, fourth joint slightly longer than third and shorter than fifth. Pronotum slightly longer than broad, narrower than head; anterior and lateral margins straight, posterior margin rounded; prozona weakly tumid, median suture indistinct. Elytra smooth, not keeled, with weak inner anterior angle, exposing a scutellum; wings present or absent. Legs slender, first joint of hind tarsus as long as second and third together. Last abdominal tergite of male slightly transverse, pygidium more or less prominent, forceps bases widely separated, inner surface very flat, with sides forming a faint ridge and armed with sharp teeth and some granules. Female forceps simple, nearly touching at base.

Two species of this genus are known from China. The species *Mesolabia? deprepaniensis* (Kapoor *et al.*, 1971) from India may also belong to this genus.

Type species: *Mesolabia niitakaensis* Shiraki, 1906.

Key to species of genus *Mesolabia Shiraki, 1906*

- 1 Elytra as long as pronotum; wings completely absent *M. niitakaensis* Shiraki, 1906
- Elytra about twice as long as pronotum; wings completely developed *M. ramosa* (Zhang, Ma & Chen, 1992)

Mesolabia niitakaensis Shiraki, 1906

(Figs. 30–33)

Mesolabia niitakaensis Shiraki, 1906: 12.

Measurements. Total body: ♂ 12.0–15.0, ♀ 12.0–16.0; forceps: ♂ 4.0–5.0, ♀ 4.0–5.0.

Material. 6♂♂, 10♀♀, Fanjing Mountain, Jiangkou, Guizhou, China, elev. 1800–2400m, 2014.VIII.5–6, collected by Sun Mei-Ling & Li Miao-Miao; 2♀♀, Mao'er Mountain, Guangxi, China, elev. 500–2100m, 2013.VIII.1–2, collected by Liu Xian-Wei *et al.*; 1♂, 2♀♀, Mao'er Mountain, Xing'an, Guangxi, China, elev. 900–1500m, 1992.VIII.22–23, collected by Liu Xian-Wei & Yin Hai-Sheng; 1♂, Bamian Mountain, Guidong, Hunan, China, elev. 1100m, 2014.VI.4, collected by Peng *et al.*.

Distribution. China (Hunan, Guizhou, Guangxi, Taiwan).

***Mesolabia ramosa* (Zhang, Ma & Chen, 1992) comb. nov.**

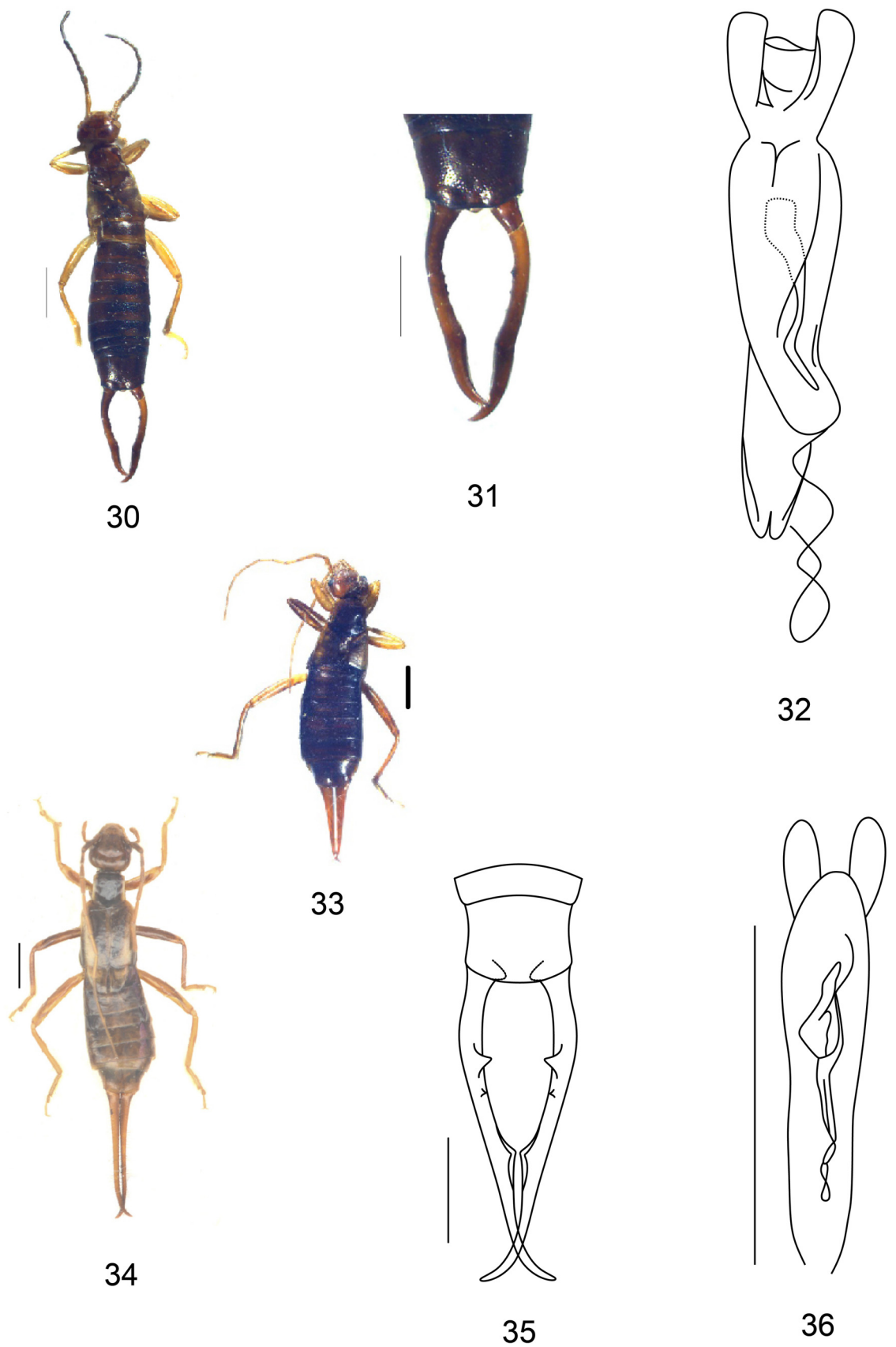
(Figs. 34–36)

Opisthocosmia ramosa Zhang, Ma & Chen, 1992: 115.

Measurements. Total body: ♀ 16.0–18.0; forceps: ♀ 5.0–7.0.

Material. 2♀♀, Qiqi, Gongshan, Yunnan, China, elev. 1900m, 2010.VI.28–VII.3, collected by Bi Wen-Xuan; 2♀♀, Laba River, Tianquan, Sichuan, China, elev. 2060m, 2007.VII.28–30, collected by Liu Xian-Wei *et al.*.

Distribution. China (Hunan, Sichuan, Yunnan).



FIGURES 30–36. *Mesolabia* Shiraki, 1906. 30–33: *M. niitakaensis* Shiraki, 1906. 34–36: *M. ramosa* (Zhang, Ma & Chen, 1992). 30) Body of male, dorsal view. 31, 35) Forceps of male, dorsal view. 32, 36) Genitalia of male, dorsal view. 33, 34) Body of female, dorsal view. Scale bars = 2 mm.

Discussion. The species was described in *Opisthocosmia*. However, its characters indicate it is most similar to species of *Mesolabia* Shiraki, 1906. Therefore, the present new combination is proposed.

Acknowledgements

We thank all those who previously performed research on this group for allowing us to study their valuable notes. We are grateful to all the collectors of the specimens recorded in this paper. We also thank the anonymous reviewers for helpful comments that improved the manuscript. This research was supported by the Science-technology basic condition platform from The Ministry of Science and Technology of the People's Republic of China (2005DKA21402).

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