

Descriptions of four new species of Pamphiliidae (Hymenoptera) from Zhejiang, China

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Abstract: A new species of *Acantholyda* A. Costa, 1894 and three new species of *Cephalcia* Panzer, 1805 of Pamphiliidae are described and illustrated from Zhejiang, China: *Acantholyda convexiclypea* Liu, Li & Wei **sp. nov.** at Mt. Qingliangfeng, *Cephalcia puncticlypea* Liu, Li & Wei **sp. nov.** at Mt. Qingliangfeng, *C. xiaowei* Liu, Li & Wei **sp. nov.** at Mt. Qingliangfeng, and *C. melanopectera* Liu, Li & Wei **sp. nov.** at Mt. Fengyang. Two keys to all Zhejiang species of *Acantholyda* and *Cephalcia* are provided.

Key words: Pamphilioidea; taxonomy; key

中国浙江扁蜂科四新种记述（膜翅目）

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摘要: 记述中国浙江扁蜂科阿扁蜂属 1 新种: 突唇阿扁蜂 *Acantholyda convexiclypea* Liu, Li & Wei **sp. nov.** 和腮扁蜂属 3 新种: 刻唇腮扁蜂 *Cephalcia puncticlypea* Liu, Li & Wei **sp. nov.**, 肖氏腮扁蜂 *C. xiaowei* Liu, Li & Wei **sp. nov.** 和黑翅腮扁蜂 *C. melanopectera* Liu, Li & Wei **sp. nov.**。文中还提供了浙江阿扁蜂属和腮扁蜂属的分种检索表。

关键词: 扁蜂总科; 分类; 检索表

Introduction

Acantholyda A. Costa, 1894 is a large genus in the family Pamphiliidae which is distributed in the Holarctic Region with 78 species recorded worldwide (Wu *et al.* 2016). *Cephalcia* Panzer, 1805 also occurs in the Holarctic Region but is smaller than *Acantholyda* with 44 species in the family Pamphiliidae recorded worldwide (Zhang *et al.* 2018). In China, there are currently 18 recorded species of *Acantholyda* and 22 recorded species in *Cephalcia*. Mt. Qingliangfeng is located in the Lin'an District of Hangzhou City and Mt. Fengyang is located in the Longquan of Lishui City, Zhejiang, China. Three species of *Acantholyda*, namely *A. dimorpha* Maa, 1944, *A. flavomarginata* Maa, 1944 and *A. intermedia* Maa, 1949 have been recorded in Zhejiang. Only one species of *Cephalcia*, *C. tienmua* Maa, 1949, has

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been recorded in the province. In this paper, a new species of *Acantholyda* and three new species of *Cephalcia* from Zhejiang are described and illustrated.

Material and methods

Specimens of these newly described species were obtained by sweeping in forest fringe zones in Zhejiang at Mt. Qingliangfeng and Mt. Fengyang (Eastern China). Mt. Qingliangfeng reaches 1787.4 meters above sea level and belongs to the Tianmu Mountains. Mt. Fengyang reaches 1929 meters above sea level and belongs to the Wuyi Mountains.

Six specimens of four new species in Pamphiliidae were examined and studied for this work. Specimens were examined with a Motic-SMZ-171 stereomicroscope. Images of the imagines were taken with a Nikon D700 digital camera and a Leica Z16APO. The genitalia were examined with a Motic BA410E microscope and photographed with a Motic Moticam Pro 285A. Images were focus-stacked using Helicon Focus (HeliconSoft, Kharkiv, Ukraine) and further processed with Adobe Photoshop CS 11.0.

The terminology of genitalia follows Ross (1945) and that of general morphology follows Viitasaari (2002). For a few terms (e. g. middle fovea and lateral fovea), we follow Takeuchi (1952).

The holotypes and all paratype specimens are deposited in the Asian Sawfly Collection, Nanchang, China (ASMN).

Abbreviations used in the text and illustrations are as follows: OCL — the distance between a lateral ocellus and the occipital carina, or the hind margin of the head where this carina would be if it was developed (Benson 1954); OOL — the distance between an eye and a lateral ocellus; POL — the distance between the mesal margins of the 2 lateral ocelli.

Taxonomy

Acantholyda A. Costa, 1894

Diagnosis. Body large, length 8–18 mm; antennae slender and filiform, not compressed, scape usually not shorter than antennomere 3, antennomere 3 much longer than antennomere 4; apex of wings coriaceous with irregular wrinkles, cells C and Sc without hair; vein Sc with 2 branches, apex remote from pterostigma, pterostigma long and narrower than length of vein 2r, vein 1r long and stout; anal cell in hind wing broadly round at apex and meeting anal petiole at upper corner; fore tibia with 1 preapical spur; apex of tibial spurs obtuse and membranous; metabasitarsus approximately as long as following 2 tarsomeres together, plantar lobe large, claw with a small middle tooth far from apical tooth, ventral side of claw with 1 long seta.

Host plants. Gymnospermae (Pinaceae).

Distribution. Holarctic.

Key to the Zhejiang species of *Acantholyda*

1. Occipital carina distinct; body yellowish brown with black maculae and without metallic blue tinge; wings hyaline without distinct macula. China (Zhejiang)..... *A. convexiclypea* Liu, Li & Wei **sp. nov.**
- . Occipital carina absent; head and thorax with distinct metallic blue tinge, or forewing with distinct apical macula..... 2

2. Wing hyaline or feebly infusate, without distinct macula, pterostigma largely or entirely black; head with large and dense punctures; scape partly black; dorsum of head and thorax largely black with distinct metallic blue tinge 3
- Basal 2/3 of female wings yellow and apical 1/3 deeply infusate with definite boundary, pterostigma largely yellow with black base; female head and thorax brownish yellow with minute punctures; female antenna yellow brown with antennomeres 2–4 blackish. China (Chongqing, Fujian, Henan, Hunan, Jiangxi, Sichuan, Zhejiang).....*A. dimorpha* Maa
3. Clypeus brownish yellow; wings evenly infusate, apex of pterostigma more or less pale; basal half of antenna brownish yellow, dorsum of scape black. China (Anhui, Fujian, Guangxi, Guizhou, Jiangxi, Hunan, Sichuan, Taiwan, Zhejiang).....*A. flavomarginata* Maa
- Clypeus entirely bluish black without pale macula; at least basal 1/4 of wings hyaline, pterostigma entirely black; basal half of antenna black 4
4. Wings hyaline entirely; antenna black throughout; dorsum of abdomen in female bluish black with narrow pale margins. China (Taiwan)*A. taiwana* Shinohara
- Wings largely infusate with basal 1/4 hyaline; antenna black in basal half and dark brown in apical half; abdominal tergites 2–5 and sternites 3–7 entirely brownish yellow. China (Zhejiang) ·· *A. intermedia* Maa

1. *Acantholyda convexiclypea* Liu, Li & Wei sp. nov. (Figs 1–9)

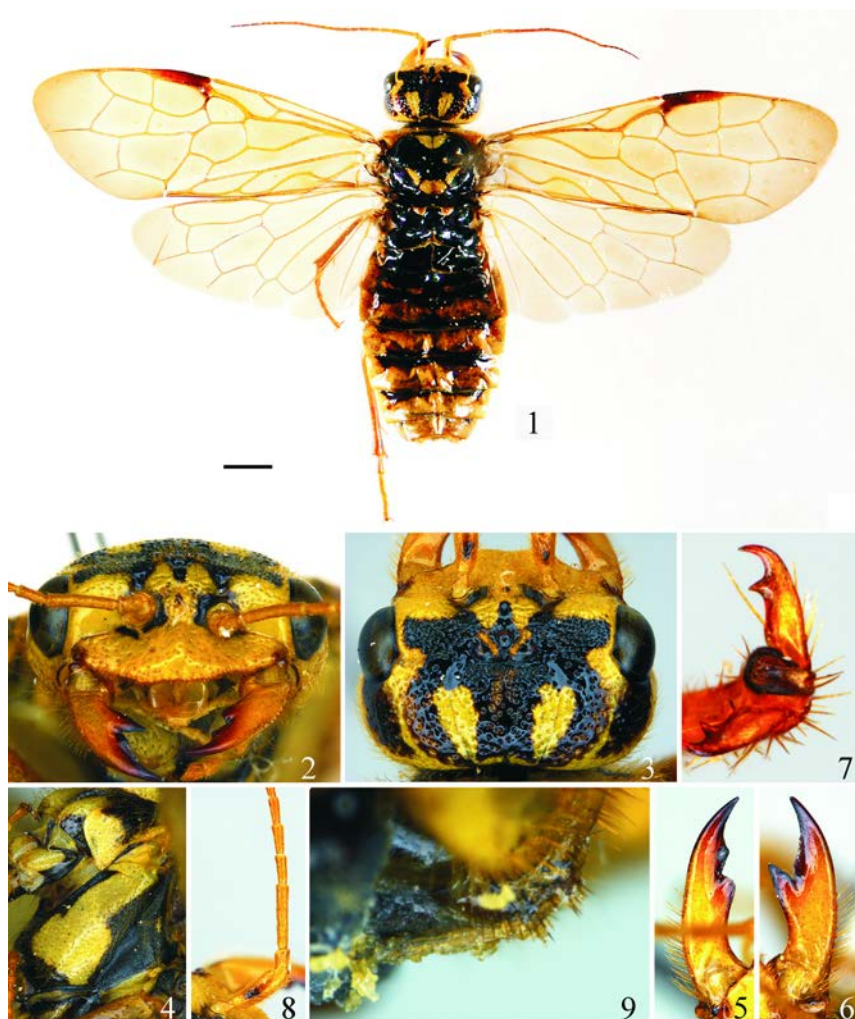
Description. Female (holotype) (Figs 1–9), length 15 mm (Fig. 1).

Color. Head yellowish brown with black stripes as shown in Figs 2–3; antennae yellowish brown, scape with a small black macula (Fig. 8), apical flagellomeres slightly darkened; thorax largely black, a large macula in ventral side of propleuron, a broad lateral macula on pronotum, tegula, posterior 2/3 of median mesoscutal lobe, mesoscutellum largely and a nearby oblique spot in lateral mesoscutal lobe, mesepisternum largely and posterior margin of mesepimeron (Fig. 4), yellowish brown; abdomen yellowish brown, terga 1–3 largely, basal and apical margins of abdominal tergites 4 and 5, basal margin of tergites 6 and 7, basal margin of each sternite, black; legs orange brown, base of coxa, trochanter and posterior stripe of femur, black; body hairs yellowish brown; wings yellowish brown, slightly darkened at extreme apex, pterostigma blackish brown and gradually paler toward apex, veins pale brown.

Punctuation. Clypeus with sparse and shallow punctures, surface smooth; para-antennal area punctured in upper 2/3 and smooth in lower 1/3 (Fig. 2); frontal area, upper inner orbit and anterior of postocellar area densely and coarsely punctured, punctures on postocellar area and temple large and dense with linear smooth interspaces (Fig. 3), upper hind orbit minutely and sparsely punctured; median mesoscutal lobe largely smooth, middle part of lateral mesoscutal lobe with a punctured band, posterior part of mesoscutellum with some punctures; mesepisternum with shallow and weak punctures mixed with microsculptures, mesepimeron and metepimeron densely microsculptured (Fig. 4); metepisternum weakly microsculptured and shiny; abdominal tergites and sternites with feeble microsculptures, shiny.

Hairs on dorsum of head and thorax straight, hairs on temple and postocellar area shorter than diameter of median ocellus, those on posterior margin and lateral of head longer than diameter of ocellus and curved at apex, hairs on mesonotum as long as diameter of ocellus, and those on mesopleuron about 2× as long as diameter of ocellus; middle 1/3 of clypeus distinctly protruding with apical margin truncate, central part elevated, lateral margins feebly concave (Figs 2, 3); malar space 1.2× broader than diameter of lateral ocellus; left mandible with distinct

middle tooth (Fig. 5), right mandible without middle tooth (Fig. 6); eyes small and short elliptical, distance between eyes $2.4\times$ longest axis of an eye; middle of inner orbit convex, without facial carina; median fovea short and small, short oblique carina between median ocellus and lateral ocellus distinct, interocellar furrow and postocellar furrow shallow and fine; postocellar area as broad as long, lateral furrows fine, strongly convergent backwards (Fig. 3); antennae as long as vein C and pterostigma together and with 28 antennomeres, length ratio of antennomeres 1–5 as $30 : 10 : 24 : 11 : 11$ (Fig. 8). Petiole of anal cell in hindwing about $0.5\times$ length of vein cu-a; inner tooth of hind claw triangular, shorter than and remote from outer tooth (Fig. 7); ovipositor sheath in lateral view as shown in Fig. 9.



Figures 1–9. *Acantholyda convexicypea* sp. nov., ♀, holotype. 1. Adult, dorsal view; 2. Head, frontal view; 3. Head, dorsal view; 4. Mesopleuron and metapleuron, lateral view; 5. Left mandible; 6. Right mandible; 7. Claw; 8. Basal 5 segments of antennae; 9. Ovipositor sheath, lateral view. Scale bar = 2 mm (Fig. 1).

Male. Unknown.

Holotype. ♀, **China**, Zhejiang, Hangzhou City, Lin'an District, Mt. Qingliangfeng,

Qianqingtang, N. 30°18.032', E. 119°07.067', alt. 850 m, 24-IV-2010, Wei XIAO (ASMN) leg. **Paratype.** 1♀, **China**, Zhejiang, Hangzhou City, Lin'an District, Mt. Qingliangfeng, Qianqingtang, N. 30°18.032', E. 119°07.067', alt. 850 m, 24-IV-2010, Mingcan YAO (ASMN) leg.

Etymology. The specific epithet refers to the clypeus distinctly convex at middle.

Host plants. Unknown.

Remarks. This new species is similar to *A. punctacephala* Wei, 2002 but differs from it by the body being larger; the hairs in dorsum of head shorter than 1.5× diameter of ocellus and not distinctly curved at apex; malar space longer than diameter of lateral ocellus, vertex in dorsal view clearly longer than compound eye, lateral margins hardly contracted; thorax largely black with a few pale maculae; base of pterostigma blackish brown; the anterior part of postocellar area with small and dense punctures; the antennal scape with a dorsal black macula; the middle protruding part of clypeus not longer than lateral margins.

***Cephalcia* Panzer, 1805**

Diagnosis. Close to *Acantholyda* but fore tibia without preapical spur.

Host plants. Gymnospermae (Pinaceae).

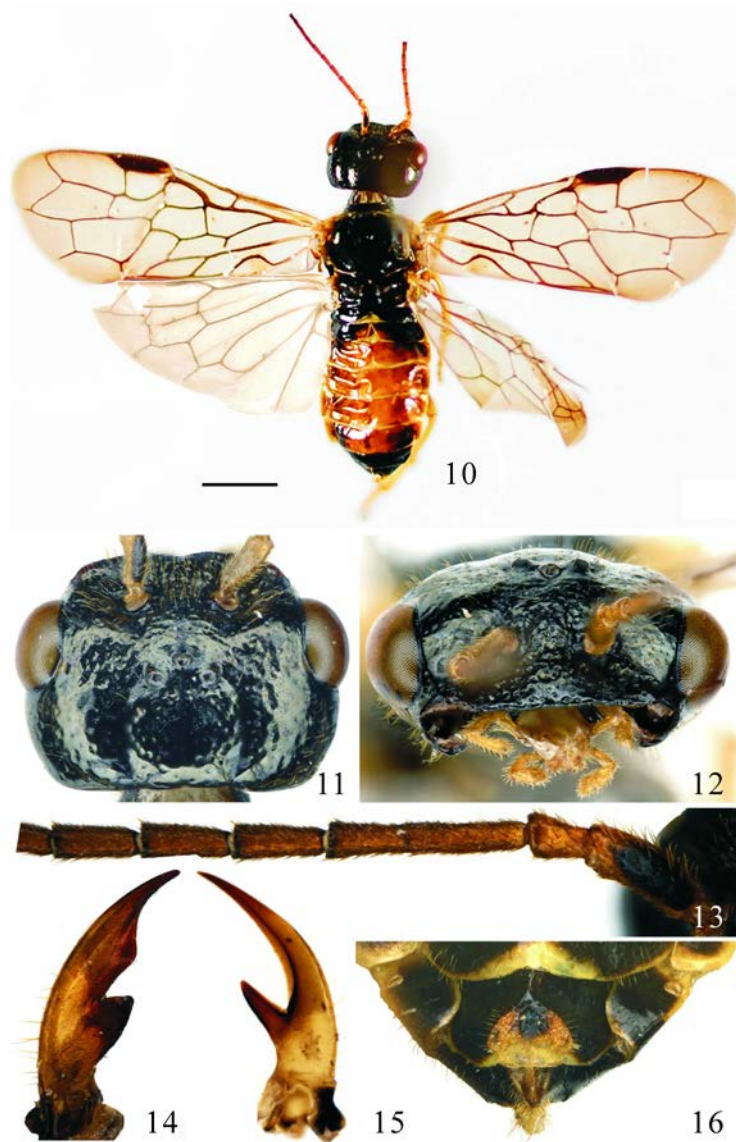
Key to the Zhejiang species of *Cephalcia*

1. Cell C in forewing naked without spine, vein m+cu-a absent; body length 8–11 mm 2
- Cell C in forewing densely pilose, vein m+cu-a distinct; body length not shorter than 15 mm 3
2. Wings black, slightly paler toward apex; male head black in upper half and brownish yellow in lower half (female head should be largely red); right mandible robust, outer tooth with a basal shoulder; antennomere 3 longer than following 2 antennomeres together; body with metallic tinge; medium part of clypeus strongly protruding; body hairs black. China (Zhejiang) ... *C. melanoptera* Liu, Li & Wei **sp. nov.**
- Wings hyaline; head entirely black; right mandible slender, outer tooth without basal shoulder; antennomere 3 shorter than following 2 antennomeres together; body without metallic tinge; anterior margin of clypeus subtruncate; body hairs pale. China (Zhejiang) *C. puncticypea* Liu, Li & Wei **sp. nov.**
3. Body black with a few pale maculae; several basal and apical antennomeres black, middle antennomeres white; fore wing with a narrow but distinct smoky band below pterostigma; antennomere 3 shorter than following 3 antennomeres together. China (Anhui, Fujian, Henan, Hunan, Jiangxi, Zhejiang) *C. tienmua* Maa
- Body orange, almost without distinct black macula; antenna brownish yellow with apical 2 or 3 antennomeres black brown; forewing with a short black macula below pterostigma; antennomere 3 as long as following 3 antennomeres together. China (Zhejiang) *C. xiaowei* Liu, Li & Wei **sp. nov.**

2. *Cephalcia puncticypea* Liu, Li & Wei sp. nov. (Figs 10–16)

Description. Female (holotype) (Figs 10–16), length 8.5 mm (Fig. 10).

Color. Body black, mandibles largely and palps yellowish brown, basal 1/4 of antennae pale brown, dorsal side of scape with a large black macula, apex of flagellomeres gradually blackened; narrow posterior margin of pronotum, tegula, middle part of abdominal tergite 2, tergites 3–6, tergite 10 largely, broad posterior band of sternites 2–6 and narrow posterior margin of sternite 7, yellowish brown; lateral sides of tergite 6 with black maculae, ventral fold of each tergite pale brown with a large and round middle black macula, oblique carinae in middle of sternite 7 orange (Fig. 16); legs black, apical margin of each coxa, trochantellus, apical 1/4 of femur, tibiae and tarsi entirely, yellowish brown; body hairs pale brown, wings feebly infuscate and subhyaline, stigma blackish brown, veins dark brown.



Figures 10–16. *Cephalcia puncticlypea* sp. nov., ♀, holotype. 10. Adult, dorsal view; 11. Head, dorsal view; 12. Head, frontal view; 13. Basal 6 segments of antennae; 14. Left mandible; 15. Right mandible; 16. Abdominal end, ventral view. Scale bar = 2 mm (Fig. 10).

Punctuation. Clypeus and supraclypeal area with large and dense punctures, interspaces between punctures smooth (Figs 11, 12); para-antennal area with minute and sparse punctures, posterior orbit largely smooth, upper inner orbit, temple and postocellar area with a few large and shallow punctures, surface smooth (Fig. 11); thorax smooth, lateral mesoscutal lobe scattered with shallow and weak punctures; abdominal tergites smooth, shiny; sternites with distinct microsculptures, carina of sternite 7 with coarse but small punctures and microsculpture (Fig. 16).

Hairs on dorsum of head and thorax and pleuron slightly longer than diameter of ocellus,

apex straight or slightly curved. Left mandible robust with a broad middle tooth (Fig. 14), left mandible long and slender, basal tooth long and sharp, about 1/3 length of outer tooth (Fig. 15); middle of clypeus nearly flat, apical margin shallowly concave, lateral corners roundish (Fig. 11); malar space as long as diameter of lateral ocellus; eyes elliptical, distance between eyes 2.2× longer than longest axis of eye; median fovea not clear, upper inner orbit without facial carina and cross furrow; postocellar area flat and slightly broader than long, without middle furrow; lateral furrows shallow and weakly curved, posterior third slightly convergent backwards; in dorsal view temple clearly longer than eye, lateral margins roundly convergent backwards (Fig. 11); posterior orbit round, occipital carina absent. Antennae with 26 antennomeres, antennomere 3 clearly shorter than antennomere 1 and shorter than antennomeres 4–5 together, ratio of antennomeres 1–5 as 28 : 10 : 20 : 12 : 13 (Fig. 13). Mesoscutellum as broad as long. Cells C and Sc1 densely pilose, cell Sc2 naked largely; dorsal petiole of cell 1M about half length of vein m+cu-a, vein cu-a meeting cell 1M at middle; anal petiole of hindwing slightly shorter than vein cu-a. Hind tibia longer than tarsus, metabasitarsus slightly longer than following 2 tarsomeres together (28 : 25), plantar lobe of metabasitarsus 1/3× length of metabasitarsus; inner tooth of claw triangular. Middle oblique carinae of sternite 7 roundly curved, roundish area between carinae concave (Fig. 16).

Male. Unknown.

Holotype. ♀, **China**, Zhejiang, Hangzhou City, Lin'an District, Mt. Qingliangfeng, Longtangshan, N. 30°06.680', E. 118°54.050', alt. 930 m, 27-IV-2010, Zejian LI (ASMN) leg.

Paratype. 1♀, same date as holotype ASMN.

Etymology. The specific epithet refers to the clypeus with distinct punctures.

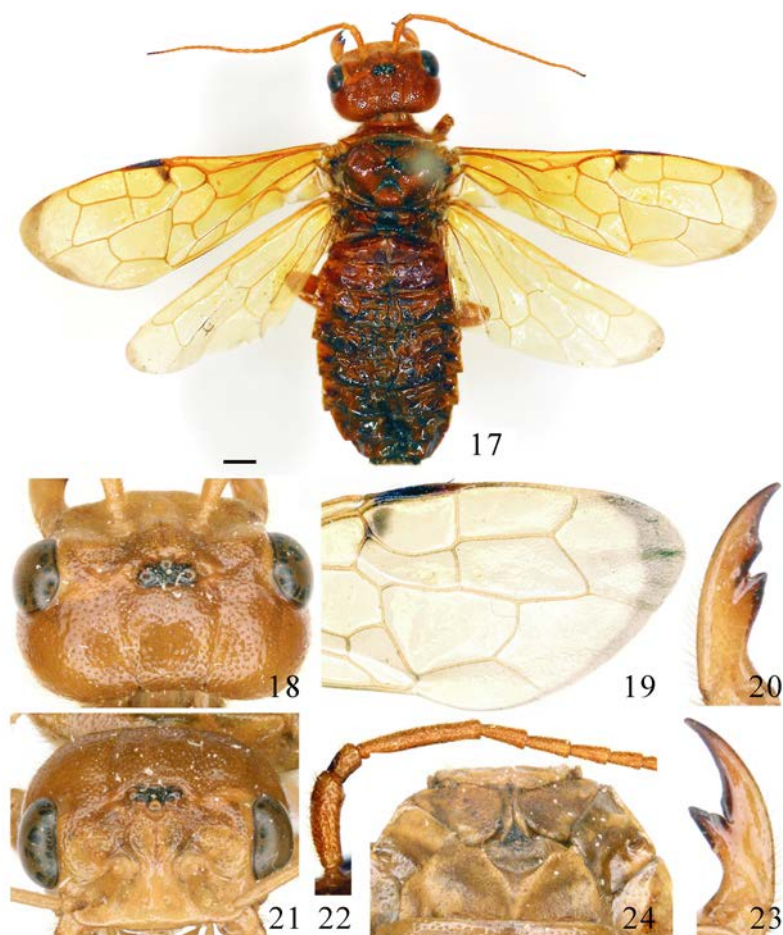
Host plants. Unknown.

Remarks. This new species has no close species in *Cephalcia* as shown by the following characters: body quite small with head and thorax black except for tegula; the antennomere 3 shorter than antennomere 1, and also shorter than antennomeres 4 and 5 together; the right mandible long and very slender with a long and sharp basal tooth; the dorsum of head smooth with very sparse and shallow punctures; the ventral fold of each tergite pale with a round black macula; and the cell C densely pilose. Here we suggest a distinct species group in *Cephalcia* for the new species: *C. puncticlypea* group.

3. *Cephalcia xiaowei* Liu, Li & Wei sp. nov. (Figs 17–24)

Description. Female (holotype) (Figs 17–24), length 17.5 mm (Fig. 17).

Color. Body including antenna and legs yellowish brown; ocellus area black (Fig. 18), anterior margin of mesonotum, median mesoscutal groove and notaulus, metascutellum, prosternum, small anterior macula and posterior margin as well and lateral groove of mesosternum, and metasternum black; apical 2–3 antennomeres slightly darkened; base of each coxa, posterior of trochanter largely and a small macula on posterior of trochantellus black; wings yellowish tinged, basal half of pterostigma blackish brown, apical half gradually turning brown, vein R1 yellowish brown, apical smoky macula quite narrow, breadth about 0.37× length of cell 3Rs, blackish macula below pterostigma extended to upper inner corner of cell 1Rs; apical smoky macula in hindwing very short (Fig. 19).



Figures 17–24. *Cephalcia xiaowei* sp. nov., ♀, holotype. 17. Adult, dorsal view; 18. Head, dorsal view; 19. Apex of forewing; 20. Left mandible; 21. Head, frontal view; 22. Base of antennae; 23. Right mandible; 24. Abdominal end, ventral view. Scale bar = 2 mm (Fig. 17).

Punctuation. Clypeus largely smooth, with shallow and indistinct punctures; para-antennal area largely, frons, ocellus area, anterior margin of postocellar area and upper inner orbit with dense punctures, temple largely, postocellar area largely and upper posterior orbit with sparse punctures, surface smooth, lower posterior orbit scattered with several punctures; notum of thorax with small and sparse punctures, posterior part of mesoscutellum with dense punctures, parapsis largely smooth; punctures on mesepisternum dense and regular, mixed with fine microsculptures, shiny; mesepimeron and metepimeron with dense microsculptures; abdominal tergites nearly without microsculpture, strongly shiny, sternites with fine microsculptures.

Hairs on dorsal side of head and thorax straight, shorter than diameter of ocellus; hairs in lateral sides of temple longer than diameter of ocellus, apex curved; hairs on pleuron of thorax about 2× as long as diameter of ocellus, distinctly curved at apex. Middle of clypeus slightly elevated, without middle carina, anterior part of clypeus distinctly elevated, anterior slope oblique, apical margin straight, lateral corners round and obtuse (Fig. 21); left mandible with

distinct middle tooth (Fig. 20), right mandible as shown in Fig. 23; postocellar area slightly broader than long, with shallow and weak middle furrow; lateral furrows fine but recognizable, convergent backwards; temple in dorsal view longer than eye, lateral sides narrowed (Fig. 18); antennae with 26 antennomeres, antennomere 3 longer than antennomere 1, slightly shorter than antennomeres 3–5 together, ratio of antennomeres 1–6 as 45 : 16 : 50 : 18 : 18 : 17 (Fig. 22); mesoscutellum flat, posterior margin somewhat steep; cell C in forewing naked and without hair, spines in cell Sc1 sparse and short; vein m+cu-a absent; anal petiole in hindwing 1/2 length of vein cu-a; metabasitarsus slightly shorter than following 2 tarsomeres together (8 : 7), plantar lobe of tarsomere 1 about 2/3 length of metabasitarsus; inner tooth of claw short and small, triangular; lateral carinae of sternite 7 V-shaped, extending backward over middle of sternite, posterior transversal bottom broad and about 4× broader than long (Fig. 24).

Male. Unknown.

Holotype. ♀, **China**, Zhejiang, Hangzhou City, Lin'an District, Mt. Qingliangfeng, Longtangshan, N. 30°06.680', E. 118°54.050', alt. 930 m, 27-IV-2010, Wei XIAO (ASMN) leg.

Etymology. The species is named after Mr. Wei XIAO who collected the type material of this species.

Host plants. Unknown.

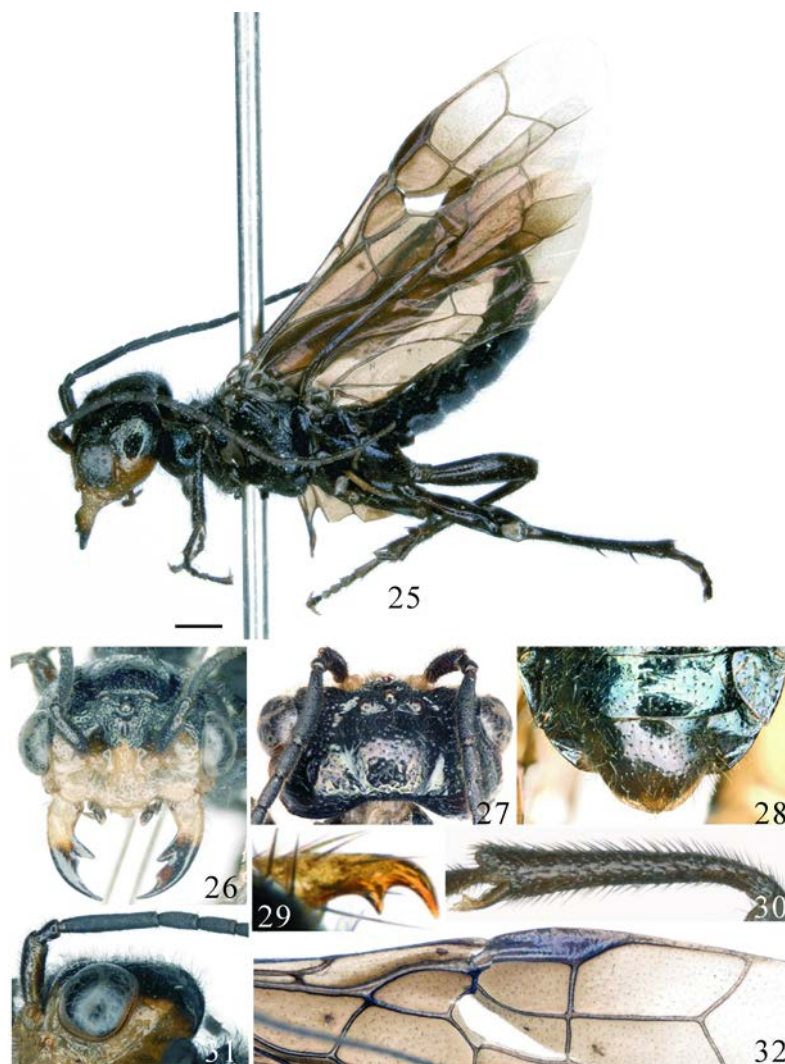
Remarks. This new species is quite similar to *C. xanthiana* (Wei & Niu, 2008) but differs from it by the following: the ocellar area black; vein R1 in fore wing yellowish brown without black macula, the smoky macula in apical margin narrow, approximately 0.25× length of cell 2Rs, hindwing almost without apical smoky macula; the oblique carinae in posterior of sternite 7 V-shaped and extending over middle of sternite.

4. *Cephalcia melanoptera* Liu, Li & Wei sp. nov. (Figs 25–32)

Description. Male (holotype) (Figs 25–32), length 10.5 mm (Fig. 25).

Color. Body including palps, antennae and legs, black; lower half of inner orbit and lower 2/3 of hind orbit, malar space (Fig. 31), clypeus, supraclypeal area, basal 1/3 of mandibles (Fig. 26), narrow apical margin of subgenital plate and harpe brownish yellow; ventral side of scape with pale macula, dorsal side of head and thorax with feeble purplish and bluish tinge (Fig. 27), dorsum of abdominal tergites with strong purple lustre, ventral side with distinct blue lustre; wings deeply smoky, area around apex of vein Sc and apical 1/4 of forewing subhyaline, pterostigma black, veins blackish brown (Fig. 32); body hairs blackish brown.

Punctuation. Hairs on dorsum of head curved and about 1.5× longer than diameter of ocellus; ocellar area and upper inner orbit with coarse punctures, interspaces narrow; postocellar area and temple with sparse punctures, clypeus with denser punctures, posterior orbit largely smooth, with some minute punctures; para-antennal area smooth with sparse punctures and spines (Fig. 26); mesonotum with minute and sparse punctures, middle of median mesoscutal lobe and mesoscutellum with denser punctures, appendage smooth; upper part and ventral side of mesepisternum with smooth area, other parts of mesepisternum with coarse, large punctures and wrinkles; mesepimeron with fine microsculptures; abdominal tergites strongly smooth, sternites with sparse punctures (Fig. 28).



Figures 25–32. *Cephalcia melanoptera* sp. nov., ♂, holotype. 25. Adult, lateral view; 26. Head, frontal view; 27. Head, dorsal view; 28. Abdominal end, ventral view; 29. Claw; 30. Fore tibia; 31. Lateral side of head and base of antennae; 32. Parts of forewing. Scale bar = 2 mm (Fig. 25).

Lateral corners of clypeus obtuse, middle 1/3 of clypeus distinctly elevated and protruding (Fig. 26); malar space as long as diameter of ocellus, occipital carina absent, mandibular carina short; median fovea deep, furrow-like, extended to median ocellus; facial carina low and obtuse (Fig. 31), ocellar basin very small; postocellar area elevated, broader than long, lateral furrows shallow and broad, strongly convergent backwards; temple slightly longer than eye in dorsal view, lateral margins distinctly narrowed (Fig. 27); middle tooth of left mandible broad and large, right mandible without acute middle tooth, base of outer tooth with a distinct shoulder (Fig. 26); antennae slender, slightly shorter than body length and with 26 antennomeres, antennomere 3 clearly longer than antennomere 1, 2.4× longer than antennomere 4 (Fig. 31); mesoscutellum weakly elevated, appendage slightly longer than

diameter of ocellus; cell C in forewing narrow and naked, with several spines near apex; cell Sc1 with sparse spines; pterostigma narrow, vein 2r joining pterostigma at apical 2/5 (Fig. 32), vein m+cu-a absent; fore tibia without lobe-like special spine, inner apical spur broad and large, curved (Fig. 30); inner tooth of claw much shorter than outer tooth (Fig. 29); subgenital plate broader than long, apex distinctly narrowed and protruding (Fig. 28); harpe longer than broad, apical margin narrow and round.

Female. Unknown. The female head might be largely or entirely reddish brown.

Holotype. ♂, **China**, Zhejiang, Longquan, Mt. Fengyang, forest nursery, alt. 1430 m, 01-VIII-2007, Tongcheng LIU (ASMN) leg.

Etymology. The specific epithet refers to the black wings of this species.

Host plants. Unknown.

Remarks. This new species is a member of the *Cephalcia chuxiongica* group (the cell C naked without spine, at most with several spines near the apical corner; vein m+cu-a absent; antennal flagellum entirely black; abdomen and pleuron of thorax entirely black, head and dorsum of thorax more or less orange or yellow; wings usually strongly smoky; body more or less with metallic tinge), but differs from other known species of the group by the following: the dorsum of head black and the lower half of head yellow; scape black with ventral side pale; the abdominal tergites purplish and sternites distinctly bluish with genitalia yellow; the cell C in forewing with several spines near apex; vein 2r meeting pterostigma at apical 0.4 and remote from apex; central part of mesepisternum coarsely punctured; and claw with a large inner tooth.

Discussion

Species of *Acantholyda* and *Cephalcia* are important forest pests with the larvae feeding on needles of Pinaceae species. Xiao (2002) proposed that investigations of the pest species in the family Pamphiliidae from China were adequate, although more taxonomic work on this family in China was still needed. But research on the Chinese fauna in this family in the following two decades dispute this viewpoint (Shinohara & Wei 2012, 2016; Wu *et al.* 2016; Zhang *et al.* 2018). A total of 19 species of *Acantholyda* and 25 species of *Cephalcia* have been found within China, which represents about 24.0% and 53.2% of the world species, respectively. Based on our field collection data, more species in these two genera will be found from China in the future. Most undescribed species might likely be found in Sichuan, Guizhou, Guangxi, Yunnan, and southeastern Xizang (Tibet), where investigations of the sawfly fauna are still far from finished.

Zhejiang is a developed province in China. And the natural environment here is diverse, for several large mountain ranges cover most of the north, west and south parts of the province. This paper reports several new species found from just two mountains, three species from Mt. Qingliangfeng and one from Mt. Fengyang. It seems to the authors that there may be still more undescribed species waiting to be found in the mountainous regions of this province.

The host plants of these four new species are all unknown at the present. To determine the host plants for these species, more investigation is needed in the future.

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