

Two new species of Pamphiliinae (Hymenoptera: Pamphiliidae) from China

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Abstract: Two new species of Pamphiliinae are described: *Onycholyda xiansui* Wei & Zuo **sp. nov.** from Jiangxi and Hunan in China, and *Pamphilius chuchen* Wei & Xia **sp. nov.** from Ningxia, Shaanxi and Hubei. The morphological differences between these new species and their nearest relatives are briefly discussed.

Key words: Pamphilioidea; sawflies; *Onycholyda*; *Pamphilius*; taxonomy

中国扁蜂亚科二新种（膜翅目：扁蜂科）

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摘要：本文记述中国扁蜂亚科 2 新种：对斑齿扁蜂 *Onycholyda xiansui* Wei & Zuo **sp. nov.** 和初尘扁蜂 *Pamphilius chuchen* Wei & Xia **sp. nov.**，前者发现于江西井冈山和湖南齐云山，后者发现于宁夏六盘山、陕西秦岭和湖北神农架。简要讨论了 2 个新种与近缘种类的形态差异。

关键词：扁蜂总科；叶蜂；齿扁蜂属；扁蜂属；分类

Introduction

Pamphiliidae is a small sawfly family in the Hymenoptera with about 345 known species until the end of 2023, based on the sawfly statistics by the last author. This family is Holarctic with more than 2/3 of species occurring in eastern Asia. About 99 species in this family were reported from China (Wei *et al.* 2024; Hu *et al.* 2023; Xiao *et al.* 2024). Knowledge about the Chinese fauna of this family is still quite poor compared with our knowledges of northeastern Asian fauna (Shinohara *et al.* 2022). Undoubtedly more unknown species in this family will be found in the near future from China.

Onycholyda Takeuchi is the fourth largest genus of Pamphiliidae with 48 known species up to the end of 2023 (Smith 2022; Xiao *et al.* 2024), and 22 were reported from China (Xiao *et al.* 2024). *Pamphilius* Latreille is the largest genus of Pamphiliidae with 126 known species with 29 species recorded from China (Wei 2024).

In this paper we describe a new species of *Onycholyda* and a new species of *Pamphilius* from China.

Accepted 24 April 2024. Published online 22 May 2024.

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Material and methods

Specimens were examined with a Motic-SMZ-171 stereomicroscope. Images of adults were taken with a Nikon D700 digital camera and a Leica Z16APO microscope. Images were focus-stacked using Helicon Focus (HeliconSoft, Kharkiv, Ukraine) and further processed with Adobe Photoshop CS 23. The terminology of genitalia follows Ross (1945) and terminology of wing venation follows Niu and Wei (2010) except for m-cu being replaced by 1m-cu, and stigma by pterostigma. The types of these new species are deposited in the Asian Sawfly Museum, Nanchang, China (ASMN).

Taxonomy

1. *Onycholyda xiansui* Wei & Zuo sp. nov. (Figs 1A, 2)

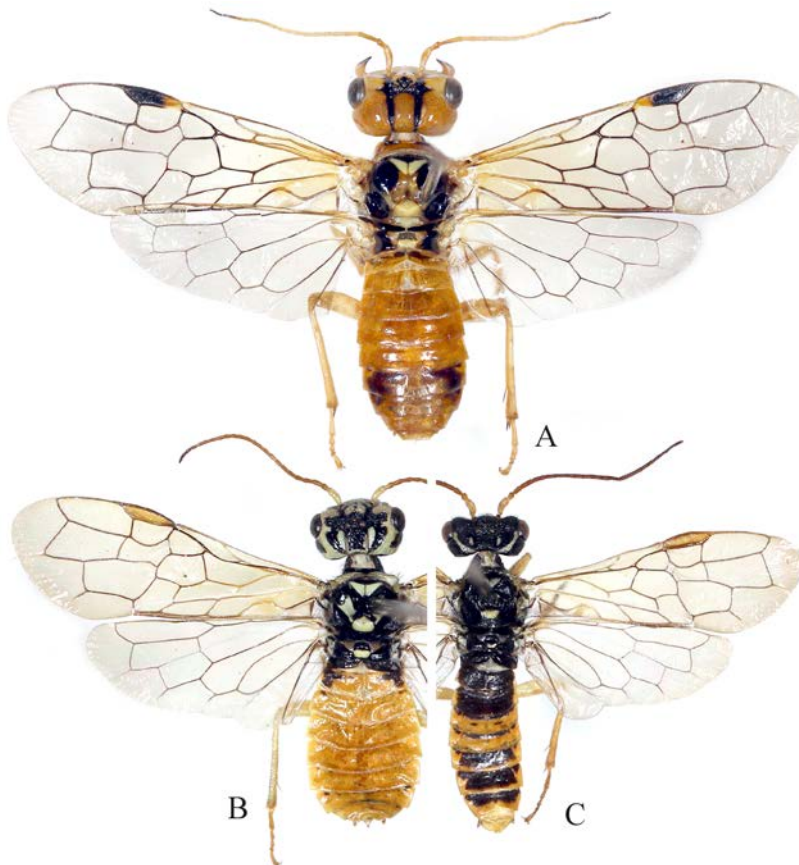


Figure 1. Adults. A. *Onycholyda xiansui*, holotype, ♀; B. *Pamphilius chuchen*, holotype, ♀; C. *P. chuchen*, paratype, ♂.

Description. Female. Length 12.5 mm (Fig. 1A). Head yellowish brown with following parts black: a small elliptical macula just below torulus, broad stripes covering ocellar area (narrow frontal ridge pale), transverse furrows and lateral furrows (Figs 2A, 2B); basal three antennomeres largely yellow brown, apical 5 to 6 flagellomeres blackish brown, other

flagellomeres yellowish white; thorax black with following parts yellowish white: pronotum largely, posterior half of propleuron, margins of prosternum, tegula, posterior corner of mesoscutellar middle lobe, inner side and posterior part of mesoscutellar lateral lobe, mesoscutellum and metascutellum, anterior margin of metanotum, metapostnotum, upper third of mesepisternum (Fig. 2C), narrow posterior margin of mesepimeron, upper margin of metepisternum; abdomen yellowish brown, tergites 6 and 7 each with a pair of small black maculae (Fig. 1A); wings hyaline with faint greyish tinge at apical two thirds and yellowish in basal third, pterostigma black at apical three fourths and yellowish brown at basal fourth, veins mostly dark brown; body hairs yellowish brown.

Dorsum of head polished and smooth, without hairs and punctures, strongly shiny; anterior part of clypeus with some sparse and shallow punctures; anterior side of mesepisternum with sparse and shallow punctures, upper third of mesepimeron microsculptured; notum of thorax and abdomen smooth and shiny. Hairs on mesonotum shorter than diameter of lateral ocellus, hairs on mesopleuron distinctly curved at apex and slightly longer than diameter of lateral ocellus. Left mandible bidentate, outer tooth slender (Fig. 2D); right mandible tridentate, middle tooth distinct and higher than basal shoulder of inner tooth, incision between middle and outer teeth broad and deep (Fig. 2E); clypeus with a low but distinct middle carina, apical margin subtruncate and roundish laterally (Fig. 2A); malar space 1.3 times as long as diameter of lateral ocellus; middle fovea small and shallow, anterior wall of frons weakly convex, facial carina indistinct; distance between eyes 2.3 times as long as longest axis of eye (Fig. 2A); ocellar basin deep, postocellar furrow shallow, transverse suture distinct but shallow; lateral furrows deep and broad; head distinctly narrowed behind eyes in dorsal view, slightly longer than eye; postocellar area almost 2 times as long as broad, weakly convex at middle and without middle furrow (Fig. 2B); occipital carina distinct, extending to top of hind orbit; antenna with 24 to 25 antennomeres, flagellomere 1 slightly shorter than scape and as long as flagellomeres 2 and 3 (Fig. 2G). Middle furrow of mesoscutellar middle lobe fine and deep, mesoscutellum flat and without middle furrow; hind tibia 1.9 times as long as hind tarsus, metabasitarsus 1.9 times as long as following 4 tarsomeres together; claw with a large and sharp basal lobe, inner tooth slightly shorter than outer tooth; cell C of forewing covered with dense spines, anterior half of cell Sc1 with dense spines, posterior half of cell Sc1 and entire cell Sc2 glabrous; anal petiole of hind wing as long as cu-a. Ovipositor apical sheath almost truncate at apex with a short peg.

Male. Unknown.

Holotype. ♀, **China**, Hunan, Guidong, Qiyun Mountains, Hydropower Station Ditch, 113°55.593'E, 25°45.361'N, alt. 752 m, 04-IV-2015, Mengmeng LIU & Hang ZHAO legs. **Paratypes.** 1♀, **China**, Hunan, Guidong, Qiyun Mountains, Hydropower Station Ditch, 113°55.593'E, 25°45.361'N, alt. 577 m, 03-IV-2015, Yuchen YAN & Ting LIU legs; 1♀, **China**, Hunan, Guidong, Qiyun Mountains, Jiangximen Protective Station, 113°55.589'E, 25°45.361'N, alt. 1,114 m, 03-IV-2015, Meicai WEI & Gengyun NIU legs; 1♀, **China**, Hunan, Guidong, Qiyun Mountains, Jiangximen Protective Station, 113°55.589'E, 25°45.361'N, alt. 1,114 m, 03-IV-2015, Youlai LUO & Ruikun WANG legs; 2♀, **China**, Jiangxi, Jinggang Mountains, 114°10'20"E, 26°33'31"N, alt. 712 m, 30-IV-2023, Meicai WEI & Lin LIU legs.

Etymology. This new species is named after the surname of Xiansu HU, one of the most famous botanists and a founder of Botany of China.

Remarks. This new species is a member of *Onycholyda wongi* group as shown by the body color pattern and the structure of mandibles. It is quite similar to *Onycholyda wongi* (Maa, 1944) but differs from the latter by the antennomere 3 shorter than antennomere 1 and as long as antennomeres 4 and 5 together, the pterostigma largely black with basal fourth yellowish brown, and the abdominal tergites 7 and 8 each with a pair of black maculae.

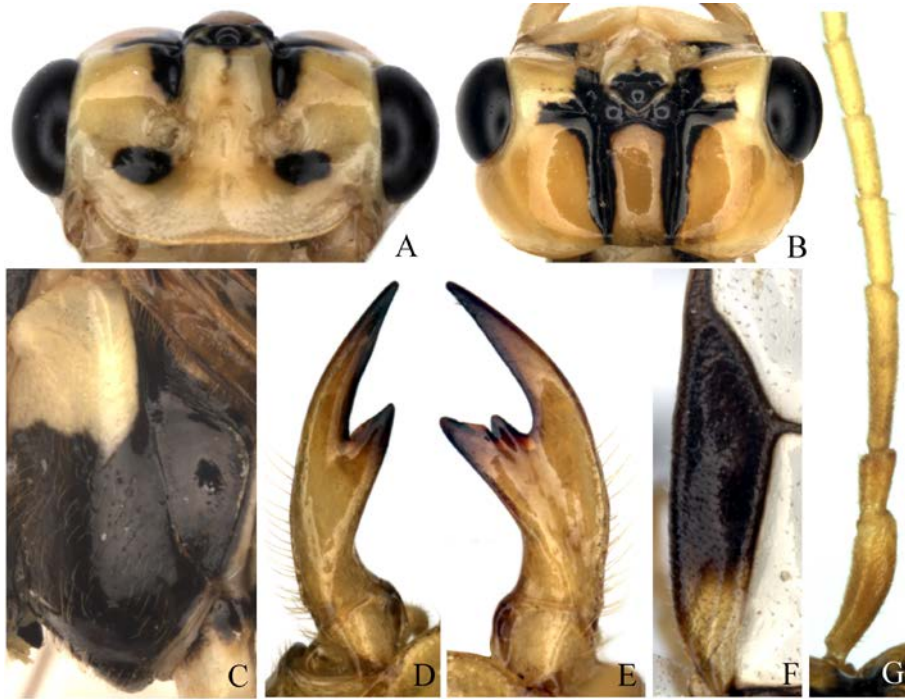


Figure 2. *Onycholyda xiansui* Wei **sp. nov.** Female paratype. A. Head, frontal view; B. Head, dorsal view; C. Mesopleuron, lateral view; D. Left mandible; E. Right mandible; F. Pterostigma; G. Basal six antennomeres

2. *Pamphilius chuchen* Wei & Xia **sp. nov.** (Figs 1B, 1C, 3)

Description. Female. Body length 9.5 mm. Head and thorax greenish yellow, head with black stripes as in Figs 3A–C, antenna dark brown with greenish yellow scape, pedicellum brown toward apex (Fig. 3O); following parts of thorax black: broad transverse macula on middle of pronotum, anterior margin of mesoscutellar middle lobe, most of lateral lobe, anterior corner of mesoscutellum, parapsides and posttergite, metanotum except for metascutellum, anterior half of propleuron and entire prosternum, ventral third of mesopleuron and most of mesepimeron, anterior of metepimeron; abdomen yellowish brown, basal two tergites largely, lateral small maculae on tergite 3, narrow basal margin of tergites 4 to 8, basal margin of each sterna and base of sheath black; legs greenish yellow, narrow basal margin of each coxa black, tibiae and tarsi brownish; head and thorax covered with long and curved black hairs, about 2.3 times as long as diameter of lateral ocellus; hairs on antennae, wings and abdomen brown; wings pale yellowish hyaline, pterostigma and veins pale brown, anterior and posterior margins of pterostigma dark brown (Fig. 3H).

Ocellar area and nearby, upper half of inner orbit densely and coarsely punctured mixed with sculptures (Figs 3A, 3B), clypeus, temple, hind orbit and postocellar area smooth with sparse and shallow but large punctures, lower third of paraantennal area smooth and glabrous (Fig. 3B); mesonotum and mesepisternum smooth and shiny, anterior part of mesepisternum with some large and shallow punctures, mesepimeron densely microsculptured; abdominal terga and sterna smooth and shiny, without punctures or sculptures.

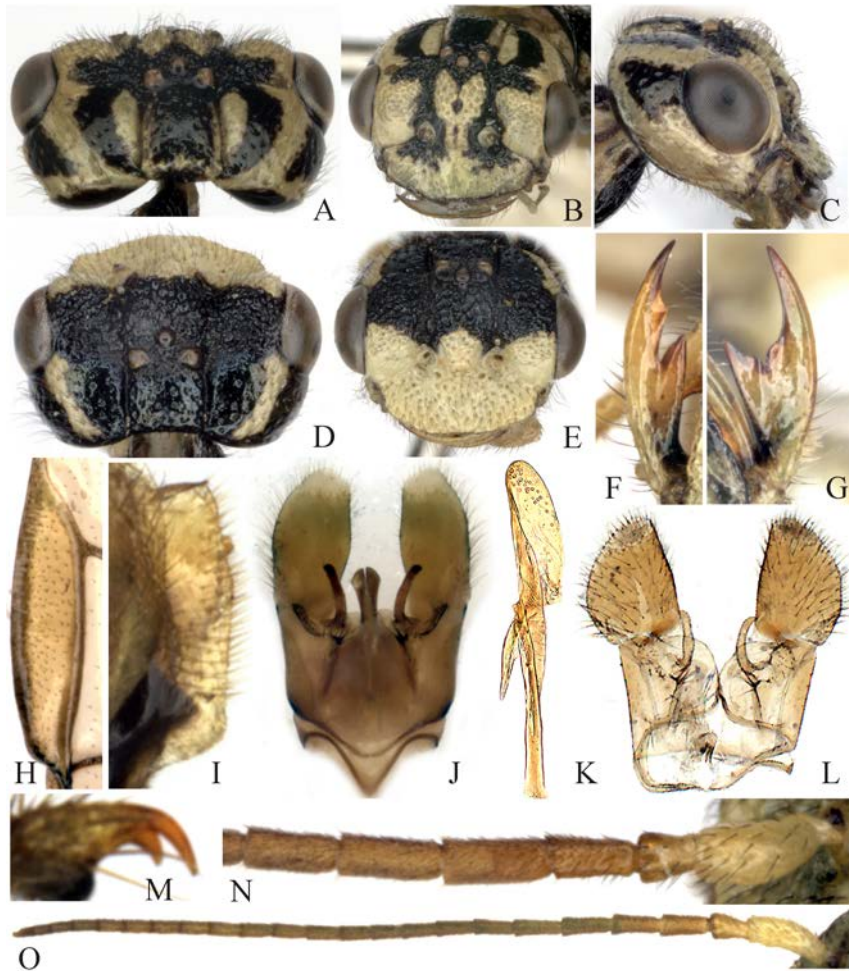


Figure 3. *Pamphilius chuchen* Wei & Xia **sp. nov.**, paratypes. A. Female head, dorsal view; B. Female head, frontal view; C. Female head, lateral view; D. Male head, dorsal view; E. Male head, frontal view; F. Female left mandible; G. Female right mandible; H. Female pterostigma; I. Apical sheath, lateral view; J. Male genitalia, ventral view; K. Penis valve; L. Male genitalia, ventral view (compressed); M. Female claw; N. Basal six antennomeres, male; O. Female antenna.

Anterior margin of clypeus obtusely truncate, middle area weakly convex, lateral corner roundish; frons low, facial carina indistinct; middle fovea small and shallow, ocellar basin indistinct; malar space 1.8 times as long as diameter of lateral ocellus and 0.9 times as long as pedicellum, distance between toruli 1.8 times as long as malar space; eyes small and roundish, shortest distance between eyes 3.3 times as long as longest axis of eye (Figs 3B, 3C); occipital

carina sharp; left mandible with a distinct middle tooth (Fig. 3F), right mandible without middle tooth, both inner and outer teeth with an obtuse inner shoulder (Fig. 3G); postocellar area slightly longer than broad, lateral furrows deep and straight (Fig. 3A); head behind eyes in dorsal view longer than eye and distinctly narrowed; antenna with 22–23 antennomeres, antennomere 3 as long as antennomere 4 (Fig. 3O); basal half of cell C in forewing glabrous, apical half densely pilose, anterior half of cell Sc1 sparsely pilose, posterior half of cell Sc1 and entire Sc2 glabrous; vein 2r inclined and meeting cell 1Rs, cu-a meeting cell 1M at middle; anal petiole of hind wing as long as cu-a; claw with inner tooth much shorter than apical tooth (Fig. 3M); apical margin of ovipositor apical sheath subtruncate, peg short and broad without apical spine (Fig. 3I).

Male. Body length 7 mm; dorsum of head with a large black macula (Fig. 3D), clypeus greenish yellow without black margin (Fig. 3E); dorsum of head with long and curved black hairs about 3 times as long as diameter of lateral ocellus; antennomere 3 clearly shorter than antennomere 4 (Fig. 3N); thorax black with following parts greenish yellow: ventral corner and posterior margin of pronotum, tegula, posterior corner of mesoscutellar middle lobe, mesoscutellum, center of metascutellum, a long middle stripe on mesepisternum and metepisternum; abdomen black brown, tergites 4 and 5 largely, posterior margin of tergite 6 and 7, tergite 8 largely, genitalia, posterior margin of sternite 2, most of other sterna, entire subgenital plate yellow brown; legs similar to female except coxae largely black; structure similar to female except for: postocellar area broader than long with a shallow middle furrow; subgenital plate broader than long, apical margin narrow and round; harpe longer than broad, apical margin oblique with a distinct disc (Fig. 3L), apiceps long and narrow, distinctly bent, apex slightly beyond apex of penis valve (Fig. 3J); penis valve narrow and hardly bent, middle part hardly broadened, apex narrow and round (Fig. 3K).

Holotype. ♀, **China**, Hubei, Yichang, Shenongjia, Dalongtan, 106°16.231'E, 30°29.112'N, 2,312 m, 19-V-2012, Kai SHENG leg. **Paratypes.** 9♀15♂, **China**, Hubei, Yichang, Shenongjia, Dalongtan, 106°16.231'E, 30°29.112'N, 2,312 m, 19–21-V-2012, Zejian LI leg.; 1♀, **China**, Hubei, Yichang, Shenongjia, Guitouwan, 110°08.872'E, 31°28.439'N, 2,150 m, 19–21-V-2012, Zejian LI leg.; 2♀, **China**, Shaanxi, Meixian County, Mt. Taibai, Kaitianguan, 107°51.477'E, 34°0.572'N, 1,852 m, 09-VI-2014, Mengmeng LIU & Ting LIU; 1♂, **China**, Ningxia, Mt. Liupan, 18-V-2023, Gucheng XIA leg.

Etymology. This new species is named after Chuchen ZHANG, a famous Tang Dynasty heroine.

Remarks. This new species is close to *P. minor* Shinohara & Xiao, 2006 from Shaanxi and *P. nigropilosus* Shinohara, Naito & Huang, 1988 from Sichuan. *P. chuchen* differs from *P. minor* by the following characters: the male head without a broad white stripe near lateral furrow, the mesoscutal lateral lobe entirely black, the basal third of cell C in forewing glabrous, the distance between toruli 1.8 times as long as malar space, antenna with 22–23 antennomeres, antennomere 3 shorter than antennomere 4, in dorsal view apex of penis valve about reaching apex of apiceps, and penis valve not bent. *P. chuchen* differs from *P. nigropilosus* by the following characters: the male head without a broad white stripe near lateral furrow, clypeus entirely white without black margin, the mesoscutal lateral lobe entirely black; the black hairs on dorsum of head 3 times as long as diameter of lateral ocellus, the distance between toruli 1.8 times as long as malar space, the basal third of cell C in

forewing glabrous; male antennomere 3 shorter than antennomere 4; in dorsal view apex of penis valve about reaching apex of apiceps, penis valve slender and not bent.

Acknowledgements

Our cordial thanks are due to Dr. Yuchen YAN, Dr. Gengyun NIU, Dr. Zejian LI, Dr. Mengmeng LIU, Dr. Lin LIU, Ms. Ting LIU, Ms. Hang ZHAO, Ms. Mengmeng LIU, Mr. Youlai LUO, Mr. Kai SHENG and Mr. Ruikun WANG for collecting these new species. This research was partly supported by the National Natural Science Foundation of China (32370500; 31970447; 31672344; 31172142).

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