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## Research article

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# A new genus with three new species of Cephinae (Hymenoptera: Cephidae) from southwestern China

Lin LIU<sup>1</sup>   & Meicai WEI<sup>2,\*</sup>  

<sup>1,2</sup>College of Life Science, Jiangxi Normal University, Nanchang, Jiangxi 330022, P.R. China.

\*Corresponding author: weimc@126.com

<sup>1</sup>Email: liulin0372@163.com

**Abstract.** A new genus of Cephidae, *Curvicephus* gen. nov., together with three new species – *C. dianzang* gen. et sp. nov., *C. xiaoi* gen. et sp. nov., and *C. lii* gen. et sp. nov. – is described from Yunnan and Xizang, China. The new genus differs from all other known genera of the family by a combination of distinctive features: an elongate ovipositor sheath distinctly and evenly bent upwards; the lateral ocelli positioned behind the line connecting the posterior margins of the eyes; the distance between the antennal toruli narrower than the distance between the inner orbits and the torulus, and about half the distance between the antennal torulus and the anterior tentorial pit; claws quite slender with the inner tooth much longer than apical tooth; head with a distinctly concave area above the antennal toruli; abdomen long and slender.

**Keywords.** Cephomorpha, Cephinae, *Curvicephus*, Xizang, Yunnan.

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## Introduction

The family Cephidae Newman, 1834, belonging to the order Hymenoptera Linnaeus, 1758, is a relatively small group. Approximately 25 genera and 190 species have been described worldwide till the end of 2025 (Taeger *et al.* 2010; Liu *et al.* 2017, 2018a, 2018b; Liston & Prous 2021; Nie *et al.* 2021; Tan *et al.* 2022; Liu & Wei 2022; Niu *et al.* 2023; Li & Wei 2025). The family is primarily distributed in the Holarctic region, with only a few representatives occurring in tropical areas and the Southern Hemisphere (Benson 1935, 1946; Smith 1994, 1997; Smith & Shinohara 2002; Smith & Schmidt 2009; Wei 2024). In China, 16 genera and 83 species of Cephidae have been recorded to date (Niu *et al.* 2015, 2023; Wei *et al.* 2015; Nie *et al.* 2016; Liu *et al.* 2017, 2018a; Nie *et al.* 2021; Tan *et al.* 2022; Liu & Wei 2022; Li & Wei 2025).

## Material and methods

During field investigations on sawflies conducted in Sichuan, Yunnan, and Xizang, China, in the summer of 2009, and in Xizang, China, in the summer of 2013, three distinctive species of Cephidae were collected from Yunnan and Xizang. These specimens represent a new genus that differs markedly from all known genera of the family. The new genus and its three new species are described and illustrated below.

All specimens examined in this study, including the holotypes and paratypes of the new species, are deposited in the Asian Sawfly Museum, Nanchang, China (ASMN), apart from one paratype of *C. dianzang* gen. et sp. nov. in the Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI).

Photographs of adults were taken with a digital camera, and image stacks were combined using Helicon Focus (HeliconSoft®). Genitalia were photographed with a Moticam® 5000 mounted on a Motic® BA400 microscope. All images were subsequently edited using Adobe Photoshop CS ver. 11.0 to adjust brightness, contrast, and clarity.

## Abbreviations for measurements

OOL = distance between the eye and outer edge of lateral ocellus

POL = distance between the mesal edges of the lateral ocelli

OCL = distance between a lateral ocellus and the occipital carina or hind margin of the head

Terminology for sawfly genitalia follows Ross (1945) and terminology for wing venation follows Niu & Wei (2010).

## Results

### *Taxonomy*

Class Insecta Linnaeus, 1758  
Order Hymenoptera Linnaeus, 1758  
Family Cephidae Newman, 1834  
Subfamily Cephinae Newman, 1834

*Curvicephus* gen. nov.

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### Type species

*Curvicephus dianzang* gen. et sp. nov.

### Etymology

The genetic name is composed of ‘*curvi*’ with ‘*cephus*’, referring to the upwards curved ovipositor.

### Description

Head and mesopleuron rugose; head from above about  $1.5 \times$  broader than long in dorsal view, temple shorter than eye with lateral margins distinctly narrowed; supraclypeal area almost flat without middle keel; malar space slightly broader than diameter of lateral ocellus; left mandible with two teeth, outer tooth evenly concave on medial side, inner tooth as long as outer tooth and faintly to distinctly shouldered (Fig. 1C); maxillary palpus with 6 palpomeres, longer than labial palpus; maxillary palpomere 4  $1.2\text{--}1.6 \times$  as long as palpomere 6, palpomere 6 arising from preapical third of palpomere 5 (Fig. 1E); labial palpus

with 4 palpomeres, palpomere 4 tapering toward apex and with small sensory pit near base; genal carina sharp, extending to upper hind orbit; eyes parallel in frontal view, distance at level of antennal toruli slightly longer than longest axis of eye; distance between antennal toruli about  $0.8 \times$  distance between torulus and eye and about half distance between torulus and lower tentorial pit (Figs 1G, 2C, 3E); frons flat, triangular, strongly narrowed anteriorly, middle fovea absent; postocellar area much broader than long; lateral ocelli just behind line of posterior margin of eyes; antenna filiform, antennomere 2 broader than long, antennomere 3 slightly shorter than antennomere 4 (Figs 1K, 2F, 3B); pronotum distinctly concave dorsally in lateral view, in dorsal view posterior width about  $1.6 \times$  the pronotal length; mesoscutellum longer than broad; mesepisternum with short and shallow transverse furrow just below top angle; forewing (Figs 2A, 3A): cell C very narrow and dark brown, vein 1r1 meeting pterostigma at its base, 2r1 meeting pterostigma at  $0.5\text{--}0.65$ , pterostigma narrow, about  $7 \times$  as long as wide, vein 2A+3A entire, basal anal cell closed; hind wing with 6–10 distal hamuli on basal half of R1, vein 3r-m present or absent, vein m-cu present, anal cell closed; middle tibia without preapical spur; hind tibia about as long as hind tarsus, with 2 preapical spurs; metabasitarsus longer than following 3 tarsomeres together but shorter than following 4 tarsomeres together; claw quite slender, basal lobe absent, inner tooth stout and much longer than apical tooth, apical tooth small (Figs 1N, 2I, 3I); abdomen slender and laterally compressed, tergum 1 medially fused or divided in anterior half, semicircularly excised in posterior half, segment 2 as long as high to much longer than high; ovipositor sheath longer than hind femur, distinctly curved dorsad (Figs 1P, 2K), apical sheath slightly shorter than basal sheath; cercus short, about  $0.3 \times$  as long as apical sheath; lance with small dorsal teeth but without complete suture; lancet weakly sclerotized, annular suture entire with distinct ctenidia, basal annuli not shortened, basal serrulae acute and oblique backward, apical serrulae distinctly bifurcate.

### Distribution

China (Yunnan Province, Xizang Province).

### Host

Unknown. The adult specimens of *Curvicephus dianzang* were collected above shrubs of *Berberis* sp. from Yunnan and Xizang.

### Taxonomic remarks

*Curvicephus* gen. nov. is a member of the tribe Urosyrystini Liu & Wei, 2022 (Liu 2022) characterized by a large subapical claw teeth without basal lobe, the abdomen long and slender, the slender lancet with oblique annular sutures and distinct ctenidia, and the middle serrulae acute. Among the genera of Urosyrystini, *Curvicephus* is most similar to *Sinicephus* Maa, 1949 as shown by the head not elongated backwards, the head and mesopleuron rugose, abdomen narrow and slender, malar space broader than diameter of lateral ocellus and the first terga not distinctly incised. However, *Sinicephus* differs from *Curvicephus* by the middle tibia with 1 preapical spur, the lateral ocelli distinctly behind the line of posterior margin of eyes, the distance between toruli broader than distance between torulus and inner orbit, the claw with the inner tooth shorter than apical tooth, the antennomere 3 clearly longer than antennomere 4, the ovipositor sheath not curved upwards, the lancet with basal annuli strongly condensed and the apical serrulae not bifurcate.

Among known genera of Cephidae, only this genus has the lateral ocelli behind the line of posterior margin of eyes in dorsal view.

**Key to the species of *Curvicephus* gen. nov.**

1. Abdominal tergite 1 medially divided; inner tooth of left mandible with distinct shoulder; vein 2r1 of forewing meeting pterostigma at 0.65; vein 2m-cu basad vein 1r-m; anterior margin of mesoscutellum truncate; mesoscutellum smooth with shallow punctures, shiny; maxillary palpomere 4  $1.6 \times$  as long as palpomere 6; female antenna with 33 antennomeres; postocellar area with distinct middle furrow; basal sheath almost as long as apical sheath; male unknown ..... *C. xiaoi* gen. et sp. nov.
  - Abdominal tergite 1 medially fused; inner tooth of left mandible with faint shoulder; vein 2r1 of forewing meeting pterostigma at 0.5–0.6; vein 2m-cu beyond vein 1r-m; anterior margin of mesoscutellum round, mesoscutellum densely punctured and microsculptured; maxillary palpomere 4  $1.2\text{--}1.4 \times$  as long as palpomere 6; antenna with 27–30 antennomeres; postocellar area without middle furrow ..... 2
2. Abdominal tergite 4–6 largely orange; vein 2r1 of forewing meeting pterostigma at 0.5; maxillary palpomere 4  $1.4 \times$  as long as palpomere 6; abdominal segments 2–4 in male much longer than height; basal sheath  $1.35 \times$  as long as apical sheath ..... *C. dianzang* gen. et sp. nov.
  - Abdominal tergites 4 and 6 black, tergum 5 orange; vein 2r1 of forewing meeting pterostigma at 0.6; maxillary palpomere 4  $1.3 \times$  as long as palpomere 6; abdominal segments 2–4 in male as long as height; female unknown ..... *C. lii* gen. et sp. nov.

***Curvicephus dianzang* gen. et sp. nov.**

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Fig. 1

**Etymology**

The species is named after the type locality. In Chinese, ‘dian’ is the abbreviation for Yunnan, and ‘zang’ is the abbreviation for Xizang.

**Type material**

**Holotype**

CHINA – **Xizang Province** • ♀; Linzhi, Longyahanquan;  $95^{\circ}59'27''$  E,  $29^{\circ}44'57''$  N; 3000 m a.s.l.; 9 Jul. 2013; Meicai Wei and Gengyun Niu leg.; ASMN.

**Paratypes**

CHINA – **Xizang Province** • 3 ♀♀, 1 ♂; same data as for holotype; ASMN. – **Yunnan Province** • 1 ♀; 12 km SE of Deqin;  $98^{\circ}59'6''$  E,  $28^{\circ}23'53''$  N; 4100 m a.s.l.; 19 Jun. 2009; Blank, Liston and Taeger leg.; ASMN, 046 • 1 ♀; SE of Deqin;  $99^{\circ}7'30''$  E,  $28^{\circ}18'54''$  N; 3800 m a.s.l.; 18 Jun. 2009; Blank, Liston and Taeger leg.; SDEI, 041.

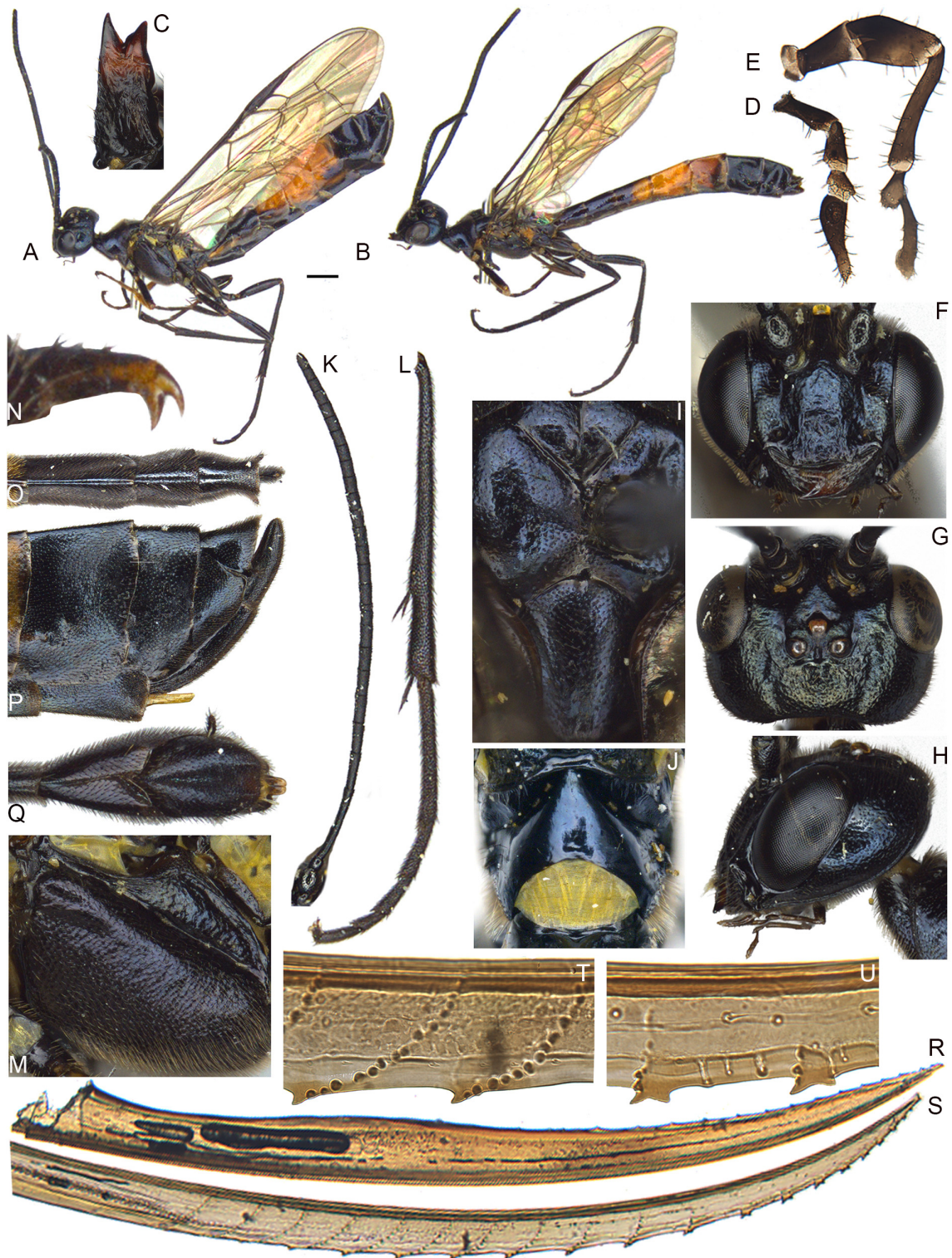
**Description**

**Female**

MEASUREMENTS. Body length 14 mm (Fig. 1A).

COLORATION. Body black with purplish tinge; apex of mandibles dark reddish brown (Fig. 1C), maxillary and labial palps brown (Fig. 1D–E), abdominal terga 4–6 orange; tip of fore femur, fore tibia entirely, base of fore tarsomere 1 pale brown. Wings almost clear, apical half slightly infusate, veins and pterostigma black brown. Body hairs dark brown.

PUNCTURES. Clypeus, mandibles, supraclypeal area, inner orbit, temple and postocellar area feebly rugose with shallow and indistinct punctures and distinct microsculpture, less shiny (Fig. 1F); frons



**Fig. 1.** *Curvicephus dianzang* gen. et sp. nov. **A, C–F, G–I, K–P, R–U.** ♀, holotype (ASMN). **B, J, Q.** ♂, paratype (ASMN). **A–B.** Adults, lateral views. **C.** Left mandible. **D.** Labial palp. **E.** Maxillary palp. **F.** Head, frontal view. **G.** Head, dorsal view. **H.** Head, lateral view. **I.** Mesonotum. **J.** 1<sup>st</sup> abdominal segment of male. **K.** Antenna. **L.** Hindleg. **M.** Mesopleuron. **N.** Claw. **O.** Ovipositor, dorsal view. **P.** Ovipositor, lateral view. **Q.** Apex of abdomen, ventral view. **R.** Lance. **S.** Lancet. **T.** Basal and middle serrulae. **U.** Apical serrulae. Scale bar: A–B = 1 mm.

weakly microsculptured, malar space almost smooth, shiny (Fig. 1H); hind orbit sparsely punctured mixed with microsculpture (Fig. 1G); pronotum microsculptured; mesoscutal middle lobe and lateral lobes microsculptured mixed with shallow and sparse punctures, mesoscutellum densely and shallowly punctured mixed with microsculpture (Fig. 1I); metanotum microsculptured; mesepisternum feebly rugose, almost mat (Fig. 1M); mesosternum feebly microsculptured and distinctly punctured, shiny; mesepimeron largely and metepimeron rugose; abdominal tergite 1 almost smooth, lateral area outside of spiracle densely punctured, tergite 2 almost smooth, other tergites distinctly microsculptured mixed with some shallow punctures; sternite 2 largely smooth, other sternites densely microsculptured; broad ventral margin of ovipositor basal sheath and apical sheath densely microsculptured.

**HEAD.** Maxillary palpomere 4 about  $1.4 \times$  as long as palpomere 6 (Fig. 1E); inner tooth of left mandible with faint but recognizable shoulder (Fig. 1C); malar space about  $1-1.1 \times$  as long as diameter of lateral ocellus (Fig. 1H); POL:OOL:OCL = 12:18:19; postocellar furrow linear and curved, broadly separated at middle, interocellar furrow punctiform; postocellar area flat, without middle furrow; in dorsal view temple about  $0.9 \times$  as long as eye, lateral side weakly narrowed in anterior third and strongly narrowed in posterior  $\frac{2}{3}$ ; antenna with 29 antennomeres (Fig. 1K).

**WINGS.** Vein 2r1 of forewing meeting pterostigma just at middle; cell 1Rs clearly longer than 2Rs, vein 2m-cu beyond vein 1r-m; cell Rs in hind wing usually closed.

**THORAX.** Anterior margin of mesoscutellum round and protruding, mesoscutellum without middle furrow. Hindleg as in Fig. 1L; claw as in Fig. 1N.

**ABDOMEN.** Abdominal tergite 1 medially fused (Fig. 1J). Abdominal segments 2 and 3 about as long as height in lateral view; ovipositor sheath in Fig. 1O–P, basal sheath  $1.35 \times$  as long as apical sheath; lance as Fig. 1R, lancet as Fig. 1S, middle serrulae as Fig. 1T, apical serrulae as Fig. 1U.

#### **Male**

Body length 13 mm (Fig. 1B); temple behind eyes strongly narrowed; antenna with 30 antennomeres; abdominal segments 2–4 much longer than height in lateral view, segment 5 about as long as height; subgenital plate longer than broad, apical margin narrowly truncate (Fig. 1Q).

#### **Variation**

Female body length 10–18 mm; antenna with 27–30 antennomeres; cell Rs in hind wing sometimes open (among the 7 specimens, in 4 females and 1 male closed in both hind wings, 1 female open in both hind wings; the holotype open in left hind wing and closed in right hind wing).

#### **Distribution**

China (Xizang, Yunnan).

#### **Host plant**

Unknown. The adults were swept from shrubs of a species of *Berberis* L.

#### **Remarks**

See the above key for the differences between the three species of the genus.

On BOLD and GBIF, a specimen listed as '*Curva angusta*' collected on 19 June 2009 in Yunnan Province at  $28.4^\circ$  N,  $99.0^\circ$  E (deposited in SDEI) refers to this species.

*Curvicephus xiaoi* gen. et sp. nov.

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Fig. 2

### Etymology

The species is named after the last name of a collector of the holotype.

### Type material

#### Holotype

CHINA – Xizang Province • ♀; Shigatse, Yadong, Mt Nadu la; 88°51'57" E, 27°24'7" N; 3650 m a.s.l.; 18 Jul. 2013; Wei Xiao and Tao Li leg.; ASMN.

### Description

#### Female

MEASUREMENTS. Body length 15 mm (Fig. 2A).

COLORATION. Body black with feeble bluish and purplish tinge; apex of mandibles dark reddish brown, maxillary and labial palps dark brown, lateral margins of abdominal tergites 2–3, tergites 4–6 and sternites 5–6 entirely orange; tip of fore femur and fore tibia entirely pale brown, fore tarsus, middle tibia and tarsus black brown. Wings almost clear, apical half slightly infuscate, veins and pterostigma black brown. Body hairs dark brown to brown.

PUNCTURES. Clypeus, mandibles, supraclypeal area, inner orbit and frons microsculptured, shiny, temple and postocellar area weakly microsculptured, strongly shiny (Fig. 2B); malar space almost smooth, shiny (Fig. 2D); hind orbit sparsely punctured mixed with microsculpture (Fig. 2C); pronotum microsculptured; mesoscutal middle lobe and central area of middle lobe microsculptured, dorsum of lateral lobes smooth, shiny; mesoscutellum hardly microsculptured, with distinct but not dense punctures, shiny (Fig. 2H); metanotum microsculptured; mesepisternum distinctly microsculptured (Fig. 2E); mesosternum feebly microsculptured and sparsely punctured, shiny; mesepimeron largely and metepimeron microsculptured; abdominal tergite 1 distinctly microsculptured, not smooth, lateral area outside of spiracle densely punctured, tergite 2 almost smooth, other tergites feebly microsculptured mixed with some shallow punctures; sternite 2 largely smooth, other sternites densely microsculptured; broad ventral margin of ovipositor basal sheath and apical sheath densely microsculptured.

HEAD. Maxillary palpomere 4 about  $1.6 \times$  as long as palpomere 6; inner tooth of left mandible with a distinct shoulder; malar space about  $1.1 \times$  as long as diameter of lateral ocellus; POL:OOL:OCL = 12:20:25; postocellar furrow deep, almost straight, not separated at middle, interocellar furrow punctiform, very shallow; postocellar area with a distinct middle longitudinal furrow; in dorsal view temple about as long as eye, lateral side almost straight, strongly narrowed backwards; antenna with 33 antennomeres (Fig. 2F).

WINGS. Vein 2r1 of forewing meeting pterostigma at 0.65; cell 1Rs much longer than 2Rs, vein 2m-cu basad vein 1r-m; cell Rs in hindwing open.

THORAX. Anterior of mesoscutellum with short but distinct middle furrow, anterior margin of mesoscutellum truncate, not protruding. Hindleg as in Fig. 2G; claw as in Fig. 2I.

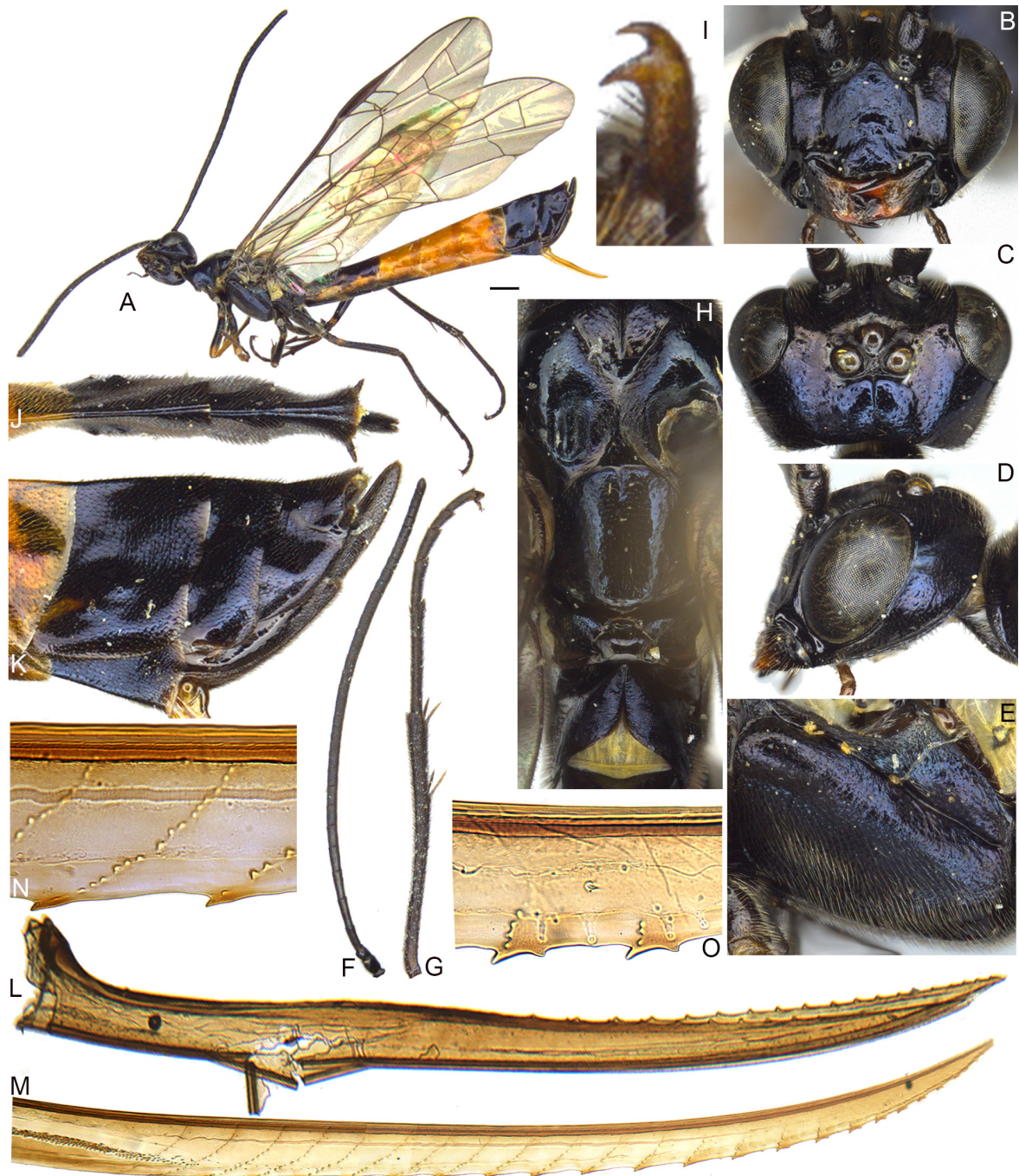
ABDOMEN. Abdominal tergite 1 medially divided entirely; abdominal segments 2–4 quite narrow, much longer than height in lateral view; ovipositor sheath as in Fig. 2J and 2K, basal sheath  $1.05 \times$  as long as apical sheath; lance as Fig. 2L, lancet as Fig. 2M, middle serrulae as Fig. 2N, apical serrulae as Fig. 2O.

**Male**

Unknown.

**Distribution**

China (Xizang Province).



**Fig. 2.** *Curvicephus xiaoi* gen. et sp. nov., ♀, holotype (ASMN). **A.** Adult, lateral view. **B.** Head, frontal view. **C.** Head, dorsal view. **D.** Head, lateral view. **E.** Mesopleuron. **F.** Antenna. **G.** Hindleg. **H.** Mesonotum. **I.** Claw. **J.** Ovipositor, dorsal view. **K.** Ovipositor, lateral view. **L.** Lance. **M.** Lancet. **N.** Basal serrulae. **O.** Apical serrulae. Scale bar: A = 1 mm.

### Host plant

Unknown.

### Remarks

See the above key for the differences between the three species of the genus.

### *Curvicephus lii* gen. et sp. nov.

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Fig. 3

### Etymology

The species is named after the collector of the type.

### Type material

#### Holotype

CHINA – **Xizang Province** • ♂; Zayu (Chayu), Cibagou; 97°27'46" E, 28°53'49" N; 2697 m a.s.l.; 22 Jun. 2013; Zejian Li leg.; ASMN.

### Description

#### Male

MEASUREMENTS. Body length 11.5 mm (Fig. 3A).

COLORATION. Body black with purplish tinge; apex of mandibles dark reddish brown, maxillary and labial palps brown, abdominal terga 5 orange; tip of fore femur and fore tibia entirely pale brown. Wings almost clear, veins and pterostigma dark brown. Body hairs brown to dark brown.

PUNCTURES. Clypeus, mandibles, supraclypeal area, inner orbit, temple and postocellar area feebly rugose with shallow and indistinct punctures and distinct microsculpture, less shiny (Fig. 3D); frons weakly microsculptured, malar space almost smooth, shiny (Fig. 3F); hind orbit sparsely punctured mixed with microsculpture; pronotum microsculptured (Fig. 3E); mesoscutal middle lobe and lateral lobes microsculptured mixed with shallow and sparse punctures, mesoscutellum densely and shallowly punctured mixed with microsculpture (Fig. 3G); metanotum microsculptured; mesepisternum feebly rugose, almost mat; mesosternum feebly microsculptured and distinctly punctured, shiny; mesepimeron largely and metepimeron rugose; abdominal tergite 1 almost smooth, lateral area outside of spiracle densely punctured, tergite 2 almost smooth, other tergites distinctly microsculptured mixed with some shallow punctures; sternite 2 largely smooth, other sternites densely microsculptured; broad ventral margin of ovipositor basal sheath and apical sheath densely microsculptured.

HEAD. Maxillary palpomere 4 about  $1.3 \times$  as long as palpomere 6; inner tooth of left mandible with a faint but recognizable shoulder; malar space about as long as diameter of lateral ocellus; POL : OOL : OCL = 14 : 18 : 19; postocellar furrow linear and curved, broadly separated at middle, interocellar furrow punctiform; postocellar area flat, with faint middle furrow; in dorsal view temple about  $0.9 \times$  as long as eye, lateral side strongly narrowed backwards; antenna with 30 antennomeres (Fig. 3B).

WINGS. Vein 2r1 of forewing meeting pterostigma at 0.6; cell 1Rs much longer than 2Rs, vein 2m-cu basad vein 1r-m; cell Rs in hindwing closed.

THORAX. Anterior margin of mesoscutellum round, obtusely protruding, mesoscutellum without middle furrow. Hindleg as in Fig. 3C; claw as in Fig. 3I.

ABDOMEN. Abdominal tergite 1 medially fused (Fig. 3H); abdominal segments 2 and 3 about as long as height in lateral view; subgenital plate longer than broad, distinctly narrowed toward apex, apical margin shallowly incised as Fig. 3J.

**Female**

Unknown.

**Distribution**

China (Xizang Province).

**Host plant**

Unknown.

**Remarks**

See the above key for the differences between the three species of the genus.

**Discussion**

The family Cephidae represents one of the basal lineages within the Hymenoptera. Except for three genera – two monotypic genera occurring in Australia and Indonesia, respectively, and one genus with



**Fig. 3.** *Curvicephus lii* gen. et sp. nov., ♂, holotype (ASMN). **A.** Adult, lateral view. **B.** Antenna. **C.** Hindleg. **D.** Head, frontal view. **E.** Head, dorsal view. **F.** Head, lateral view. **G.** Mesopleuron. **H.** 1<sup>st</sup> abdominal segment. **I.** Claw. **J.** Apex of abdomen, ventral view. Scale bar: A = 1mm.

two species in Madagascar – all other genera and species of the family are restricted to the Holarctic region (Liu 2022).

Within the Holarctic fauna, the western Palaearctic region is dominated by the tribe Cephini Enslin, 1912, which exhibits a high species-level diversity and includes *Cephus* Latreille, 1803, the largest genus in the family. However, the generic diversity of Cephidae in the western Palaearctic is markedly lower than that in East Asia. The radiation of the species of Cephini in this region may be correlated with the diversification of Poaceae host plants. In contrast, East Asia harbors a much richer generic diversity of other tribes of Cephinae, although its Cephini diversity is notably lower than that of Europe. The diversification of Cephinae in East Asia may have been associated with the radiation of certain woody plant families, such as Ericaceae Juss., Rosaceae Juss., and Oleaceae Hoffmanns & Link (Niu *et al.* 2023). In particular, the south-central part of East Asia has been a persistent center of diversification for Cephidae. Over the past several decades, a series of new genera have been described from this region, including *Tibetajanus* Wei, 1996, *Heterojanus* Wei & Xiao, 2011, *Magajanus* Wei, 1999, *Magnitarsijanus* Wei, 2007, *Sinicephus* Maa, 1949, *Stigmatijanus* Wei & Nie, 2007, and *Diaochana* Wei & Liu, 2022 (Liu & Wei 2022). Moreover, several additional new genera and species of Cephinae have been recognized by Liu (2022) but remain unpublished.

The new genus *Curvicephus* gen. nov., discovered along the western border of Yunnan and the eastern border of Xizang, China, possesses a uniquely curved ovipositor sheath, a modified first abdominal tergite, and a distinctive ocellar position. These features further emphasize the morphological specialization and high endemic diversification of Cephidae in southern East Asia, suggesting that this region continues to represent an evolutionary hotspot for the family.

## Acknowledgments

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