

Achelipoda (Diptera: Empididae) newly found on Chinese mainland with description of one new species

Chen LIN^{1, 2}①, Jia CONG², Ding YANG²

1. Institute of Life Science and Technology, Inner Mongolia Normal University, Hohhot, Inner Mongolia 010022, China

2. Department of Entomology, College of Plant Protection, China Agricultural University, Beijing 100193, China

Abstract: *Achelipoda* Yang, Zhang & Zhang, 2007 is one of the small genera in the family Empididae with only 7 known species endemic to Asia. Previously only one species from China was known to occur in Taiwan. Here *Achelipoda* is newly found on the Chinese mainland. One new species is described from Yunnan: *Achelipoda yunnanensis* sp. nov. A key to the species of *Achelipoda* from China is provided.

Key words: dance fly; taxonomy; key

异螳舞虻属 *Achelipoda* 在中国大陆首次发现及一新种记述 (双翅目: 舞虻科)

林晨^{1, 2}①, 从嘉², 杨定²

1. 内蒙古师范大学生命科学与技术学院, 内蒙古 呼和浩特 010022; 2. 中国农业大学植物保护学院昆虫学系, 北京 100193

摘要: 异螳舞虻属 *Achelipoda* Yang, Zhang & Zhang, 2007 是舞虻科中较小的属之一, 已知 7 种, 仅分布亚洲, 我国以前仅知 1 种, 分布于台湾。本文记述我国大陆 1 新种: 云南螳舞虻 *Achelipoda yunnanensis* sp. nov., 并编制了中国异螳舞虻属分种检索表。

关键词: 舞虻; 分类; 检索表

Introduction

The genus *Achelipoda* Yang, Zhang & Zhang, 2007 is one of the small genera in the family Empididae. Only 7 species were known and they are endemic to Asia (Yang & Yang 2004; Yang *et al.* 2007; Plant 2009). It is characterized by the following features: thorax with strong bristles; fore leg raptorial; anal vein absent; CuA2 reaching or almost extending to near posterior margin of wing (Yang *et al.* 2007; Plant 2009).

Only one species, *Achelipoda pictipennis* (Bezzi, 1912), was known to occur in only Taiwan of China (Yang *et al.* 2007, 2018; Plant 2009). Here *Achelipoda* is newly found on the Chinese mainland. This new species is described from Yunnan: *Achelipoda yunnanensis* sp. nov. A key to the species of *Achelipoda* from China is provided.

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① Corresponding author, E-mail: lincchen310@126.com

Material and methods

The specimens were examined and illustrated using a ZEISS Stemi 2000–c. Genitalic preparations were made by macerating the apical portion of the abdomen in cold 10% NaOH for about 6 hours. The type specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing. The following abbreviations are used for bristles: acr — acrostichal; av — anteroventral; dc — dorsocentral; npl — notopleural; oc — ocellar; psa — postalar; pv — posteroventral; sa — supraalar; sc — scutellar.

Taxonomy

Genus *Achelipoda* Yang, Zhang & Zhang, 2007

Achelipoda Yang, Zhang & Zhang in Yang, Zhang, Yao & Zhang, 2007: 22. Type species *Chelipoda pictipennis* Bezzi, 1912: 476, by original designation.

Diagnosis. Head subspherical, slightly dorsoventrally flattened; eyes widely separated on frons, almost touching below antennae on face in both sexes. Antennal first flagellomere pointed lanceolate, stylus longer (at least 1.5× longer). Thorax rather short; scutum rounded quadrate in dorsal view; acr absent, 4–7 pairs of dc, 1 sa, 1 minute npl present or absent; humeral, posthumeral or acrostichal setae absent. Fore leg raptorial, distinctly separated from mid legs; fore femur bearing distinct rows of stout setae ventrally. Wing narrow basally with axillary angle hardly developed; basal cells br and bm more or less equal in length; anal vein absent; CuA2 reaching or almost extending near posterior margin of wing.

Remarks. This genus is similar to *Chelipoda* in having strong dc, but may be separated from the latter by vein A absent and CuA2 reaching or almost extending near posterior margin of wing. In *Chelipoda*, vein A is present, and CuA2 does not reach the posterior margin of wing (Yang *et al.* 2007; Plant 2009).

Key to species of *Achelipoda* from China

1. Thorax black; hind coxa distinctly broader than mid coxa; wing brown with only apex paler; CuA2 not reaching wing margin; cercus rather wide, uniform in width, without subapical processes (Yunnan)..... *A. yunnanensis* sp. nov.
- . Thorax yellowish; hind coxa not obviously broader than mid coxa; wing with two distinct broad dark bands; CuA2 reaching wing margin; male cercus apically narrowed with short small subapical lateral processes (Taiwan)..... *A. pictipennis* (Bezzi)

1. *Achelipoda pictipennis* (Bezzi, 1912)

Chelipoda pictipennis Bezzi, 1912: 476.

Cephalodromia pictipennis (Bezzi, 1912): Hennig, 1941: 8; Smith, 1975: 202; Yang & Yang, 2004: 58.

Achelipoda pictipennis (Bezzi, 1912): Yang *et al.*, 2007: 22, 250; Yang *et al.*, 2018: 167.

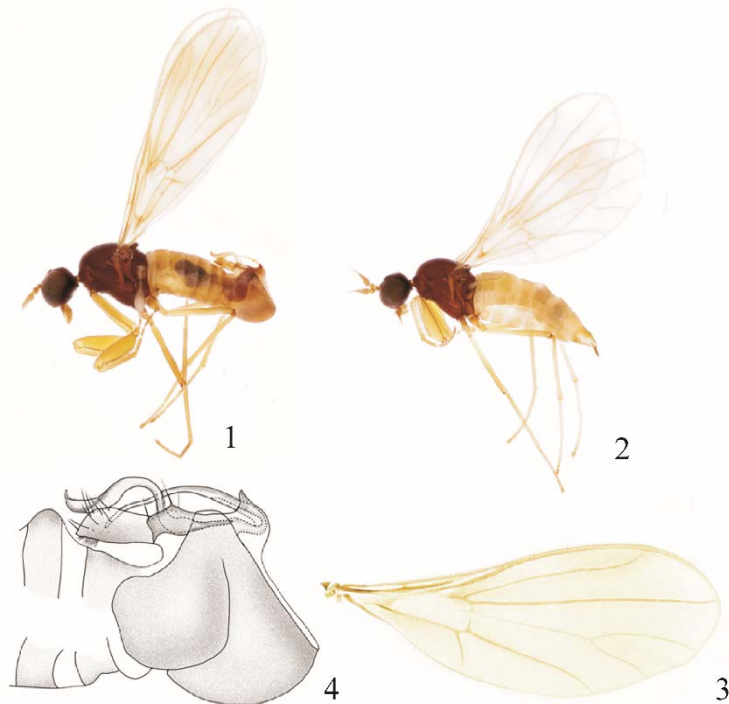
Diagnosis. Thorax yellowish; hind coxa not obviously broader than mid coxa; wing with two distinct broad dark bands; CuA2 reaching wing margin. Epandrial lamella with only 1 very long bristle. Male cercus apically narrowed with short small subapical lateral processes.

Remarks. For the detailed redescription of this species, see Plant (2009).

Distribution. China (Taiwan).

2. *Achelipoda yunnanensis* sp. nov. (Figs 1–4)

Description. Male. Body length 2.5–2.6 mm, wing length 2.8–2.85 mm.



Figures 1–4. *Achelipoda yunnanensis* sp. nov. 1. Male habitus, lateral view; 2. Female habitus, lateral view; 3. Male wing; 4. Male genitalia, lateral view.

Head black with pale gray pollen. Eyes dark brown, tinged metallic purple, separated distinctly on frons, but very narrowly separated on face; face much narrower than frons. Hairs on head short, dark yellow or brown; bristles dark brown. 2 long vt. Ocellar tubercle weak, with 2 long oc. Antenna dark brown; first flagellomere long, subconical, 2.7 times longer than wide; scape with 1 dorsal bristle apically, pedicel with circlet of subapical hairs, first flagellomere with very short pubescence; stylus dark brown, 1.6 times as long as first flagellomere, with very short pubescence. Proboscis brown with dark brown hairs; palpus dark brown with dark brown hairs and 1 dark brown terminal bristle.

Thorax black with gray pollen. Hairs on thorax dark brown, very short, sparse; bristles very long, dark brown; acr absent, 6–7 irregularly paired dc very short and hair-like, 1 minute npl, 1 very long sa; scutellum with 2 very long sc. Laterotergite without outer hairs. Legs brown; fore coxa brownish, mid and hind coxae brown. Hairs and bristles on legs dark brown. Fore femur 1.7 times as thick as fore tibia, with two rows of very short black ventral denticles and one row of 8 outer av and 7–8 outer pv dark brown (2 basalmost av and pv very long and thick). Fore tibia with one row of very short recumbent black ventral bristles. Wing hyaline, weakly tinged brownish; veins brown to dark brown. Squama dark yellow. Halter dark brown with brown base.

Abdomen rather thick, nearly straight, dark brownish yellow with gray pollen. Hypopygium distinctly wider than pregenital segments. Hairs and bristles on abdomen dark brown.

Male genitalia. Cercus rather thick, nearly uniform in thickness. Epandrial lamella rather small with 4 long bristles. Subepandrial lamella very long, strongly bent, basally thin, apically

slightly thick with acute extreme tip. Hypandrium very large, posteriorly truncate. Phallus very long and rather narrow, strongly curved forward.

Female. Body length 2.6–2.75 mm, wing length 3.0–3.1 mm.

Holotype. ♂, **China**, Yunnan, Lvchun, Huanglianshan, Yakou, 1950 m, 05-V-2011, Lihua WANG (CAU). **Paratypes.** 12♂10♀, same data as holotype (CAU); 2♂2♀, Yunnan, Lvchun, Huanglianshan, Shuiku, 1800 m, 06-V-2011, Lihua WANG (CAU); 2♂, Yunnan, Lvchun, Huanglianshan, Qimaba, 1387 m, 28-III-2019, Xin LI (CAU); 2♂, Yunnan, Baoshan, Nankang, 10-V-2012, Wenliang LI (CAU); 1♂, Yunnan, Lvchun, Huanglianshan, Kucongluocha, 1300 m, 16-IV-2018, Xin LI (CAU).

Etymology. The specific epithet refers to the type locality: Yunnan.

Diagnosis. Thorax black. Hind coxa distinctly broader than mid coxa. Wing brown with only apex paler. CuA2 not reaching wing margin. Antenna dark brown. Cercus rather wide, uniform in width.

Remarks. This new species is similar to *Achelipoda kharkhema* from Thailand, but may be separated from the latter by the cercus in male more or less uniformly wide, not narrowed at middle. In *A. kharkhema*, the cercus in male is narrowed medially with a subtriangular tip (Plant 2009).

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References

- Bezzi M. 1912. Rhagionidae et Empididae in Insula Formosa a clar. H. Sauter collectae. *Annales Historico-Naturales Musei Nationalis Hungarici*, 10: 442–496.
- Hennig W. 1941. Verzeichnis der Dipteren von Formosa. *Entomologische Beihefte aus Berlin-Dahlem*, 8: 1–239.
- Plant AR. 2009. Revision of the East Asian genus *Achelipoda* Yang, Zhang & Zhang, 2007 (Diptera: Empididae: Hemerodromiinae) including designation of a neotype for *Achelipoda pictipennis* (Bezzi, 1912) and descriptions of six new species. *Zootaxa*, 2020: 37–50.
- Smith, KGV. 1975. Family Empididae (Empidae, Hybotidae). In: Delfinado MD & Hardy DE (Eds.), *A Catalog of the Diptera of the Oriental Region*, Volume 2. The University of Hawaii Press, Honolulu, pp. 185–211.
- Yang D & Yang CK. 2004. Diptera, Empididae: Hemerodromiinae and Hybotinae. *Fauna Sinica Insecta*, Vol. 34. Science Press, Beijing, 329 pp.
- Yang D, Zhang KY, Yao G & Zhang JH. 2007. *World Catalog of Empididae (Insecta: Diptera)*. China Agricultural Press, Beijing, 599 pp.
- Yang D, Zhang LL & Zhang KY. 2018. *Species Catalog of China. Vol. 2. Animals, Insecta (VI), Diptera (2), Orthorrhaphous Brachycera*. Science Press, Beijing, 387 pp.