

BRAUERIA (Lunz am See, Austria) 34:19-20 (2007)

Descriptions of three new species of Philopotamidae from China*

SUN Changhai

Abstract

The following new species of Philopotamidae (Trichoptera) are described and figured herein: *Chimarra longispina* n. sp., *Chimarra exilis* n. sp., *Gunungiella fanjingshana* n. sp.

Key words: *Chimarra*, *Gunungiella*, new species, Philopotamidae, China

Introduction

The family Philopotamidae consists of 20 extant and 7 fossil genera and occurs all over the world. The genus *Alterosa* is the newest, erected by R. J. Blahnik in 2005, containing 20 new species and two new combinations (BLAHNIK, 2005). Otherwise, a previously recognized genus, *Doloclanes*, described by BANKS in 1937, was considered a synonym of the genus *Wormaldia* (SUN & MALICKY, 2002). The genus *Chimarra*, erected by J. F. STEPHENS in 1829, contains the most species. Chinese philopotamids constitute a very important component of the trichopteran fauna of the world. To date, 5 philopotamid genera and a total of 68 species are known to occur in China, i.e., *Wormaldia* (21 species), *Dolophilodes* (18 species), *Gunungiella* (2 species), *Kisaura* (11 species) and *Chimarra* (16 species). This study adds 3 new species to the philopotamid fauna of China (2 species in the genus *Chimarra* and 1 species in the genus *Gunungiella*). The terminologies for the new species of *Chimarra* follow after SCHMID 1980 and those for *Gunungiella fanjingshana* n. sp. follow SCHMID 1968. All specimens in this study are deposited in the Insect Museum, Nanjing Agricultural University, PR China.

Descriptions of new Species

Chimarra longispina new species (Figure 1A-1D)

Length of forewing: 7 mm. Dorsum of head dark brown; antenna yellowish brown, about as long as forewing; maxillary palpi yellowish brown, first segment shortest; labial palpi yellowish brown; dorsum of thorax dark brown, but scutellum yellow and other parts yellowish brown; upper surface of abdomen dark brown, ventral surface pale.

Male genitalia: In lateral view anterior margin of segment IX straight, lower portion of posterior margin produced into a large triangular tooth, and this margin somewhat undulated in lateral view; dorsum of segment IX membranous. Dorsum of segment X also membranous, in lateral view its two lateral lobes stand behind intermediate appendages; base of intermediate appendages with base stout and middle portion curved upwards slightly and then tapering to apex and curved downwards. Preanal appendage knob-like in lateral view. Inferior appendage one-segmented, in lateral view its base is stout, tapering to the terminal; when viewed ventrally it is hook-shaped. Phallosome with a pair of long strong sclerotized processes and endotheca with two tufts of fine spines at distal end.

Diagnosis: This new species is similar to *Chimarra wushikangensis* HSU & CHEN, 1996 from Taiwan, China, but

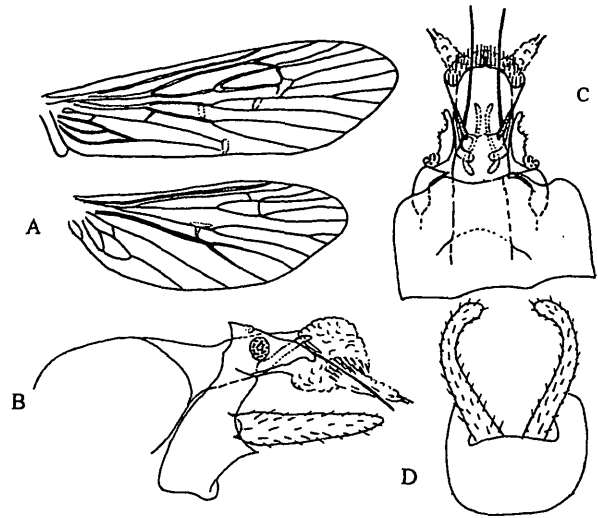


Fig. 1 Wings and male genitalia of *Chimarra longispina* n.sp.: A wing venations; B-D male genitalia, B lateral, C segments 8-10 dorsal; D segment 9 and inferior appendages ventral.

differs from it in that: (1) the lower portion of posterior margin of segment IX with a large triangular projection; (2) intermediate appendage in lateral view somewhat bird-beak-shaped, other than rectangular as in the latter; (3) endotheca with a pair of long processes and two tufts of fine spines.

Materials: Holotype: 1♂, southeastern 3 km from Hushichang town, Chishui city, Guizhou province, N28.4°, E105.9°, 300 m elev., 11.6.1995, collected by SUN Changhai & WANG Beixin; paratype: 1♂, same collection data as holotype; 1♂, Libo county, Guizhou province, N25.4°, E107.8°, elevation unknown, 9.7.1994, collected by DU Yuzhou.

Etymology: Latin word "longispina" means having long spine, in reference to endotheca of the new species with a pair of long processes.

Chimarra exilis new species (Figure 2A-2E)

Length of fore wing: 4.5 mm. Body yellowish brown, but spurs and tarsi dark brown.

Male genitalia: upper portion of anterior margin of segment IX produced into a stout tooth pointed anteriorly, upper portion of posterior margin slightly concaved and the posteroventral angle produced into a large triangular tooth. Segment X membranous, intermediate appendage in lateral view somewhat trapezoid, in dorsal view it is somewhat triangular, with a triangular tooth curved upwards. Preanal appendages knob-shaped. Inferior appendage slender, apex narrowed suddenly, in lateral view it is somewhat "L"-shaped, and in ventral view it is arc-shaped. Phallus membranous, with four small sclerites and a long spine.

Diagnosis: This new species is similar to *Chimarra shanorum* CHANTARAMONGKOL & MALICKY 1989, from Thailand, but differs from it in that: (1) segment IX with upper portion of anterior margin in lateral view produced into a stout tooth, other than produced into a finger-like projection compared to *C. shanorum*; (2) intermediate appendage in lateral view with post margin slightly concaved, other than with posteroventral angle produced into a hook-like process as in the latter; (3) phallus with four sclerites and a long spine.

Materials: Holotype: 1♂, Jinxiu Yao minority autonomy county, Guangxi province, N24.1°, E110.1°, 750 m elev., 2.6.1994, collected by ZENG Tao. Paratype: 1♂, same data as holotype.

* The study is supported by the National Natural Science Foundation of China under Grant No. 30370171 and the National Science Foundation (USA) under Grant No. DEB0316504.

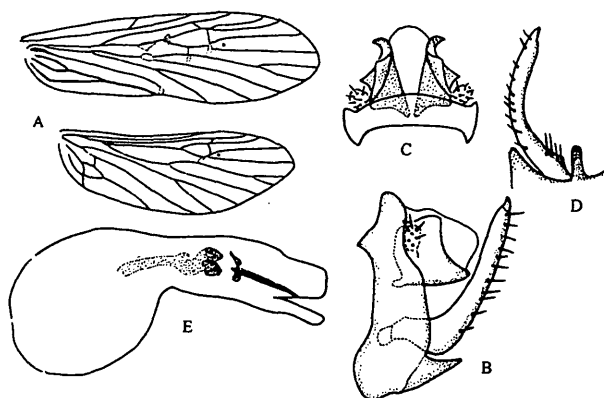


Fig. 2 Wings and male genitalia of *Chimarra exillis* n.sp.: A wing venations; B-E male genitalia: B lateral, C segments 9, 10 and intermediate appendages dorsal; D part of segment 9 and inferior appendages ventral; E phallus lateral.

Etymology: The name is taken from the Latin word “exilis” meaning slender or slim, in reference to the slender inferior appendages of the new species.

***Gunungiella fanjingshana* new species (Figures 3A-3D)**

Length of forewing: 5 mm. Body yellowish brown to dark brown. Dorsum of head yellowish brown, with big warts. Antenna yellow. Dorsum of thorax yellowish brown, scutellum yellow. Legs yellow, but the spurs gray. Wings gray, Sc in hind wing strong. Abdomen yellow.

Male genitalia: In lateral view, segment VIII with middle part of anterior margin produced cephalad into a stout process and posterodorsal angle of posterior margin forming a strong finger-like projection. Segment IX with dorsum membranous, in lateral view oblique and somewhat dumbbell-shaped, its dorsal portions about 1.5 times as wide as ventral ones. Preanal appendages slender, with a strong spine at each apex. Segment X also slender, in dorsal view distal end concaved deeply. Inferior appendages two segmented, the basal one in lateral view short, its distal end concaved at the place where the second segment articulates; the second joint vertical, basal and apex swollen, and the middle portion narrow; in ventral view it is somewhat triangular. Phallus membranous, with seven spine scattered from middle portion to the distal end.

Diagnosis: The species belongs to *saptami* species-group, and somewhat similar to *G. saptadachi* SCHMID 1968 from Zhejiang province, China, but differs from the latter in that: (1) posterior margin of segment VIII in dorsal view somewhat undulated, other than with a tip-shaped process as in the latter; (2) phallus with 7 spines scattered at the distal half, other than with only two spines at its terminal portion.

Materials: Holotype: 1♂, Heiwanhe river administration station, Mt. Fanjingshan, Guizhou province, 5300m elev., N27.9°, E108.6°, 3.6.1995, collected by SUN Changhai and WANG Beixin.

Etymology: the species is named after its collection site, Mt. Fanjingshan.

Acknowledgements

Many thanks to Dr. ZENG Tao for her donation of philopotamid specimens collected in Guangxi province. Thanks also to Ms SHEN Xiuping and Ms MU Lili for their help. I sincerely thank the anonymous reviewer for Zootaxa for his or her critical comments on the rough manuscript. I thank Dr. Ralph W. Holzenthal for his useful advice to revise this manuscript.

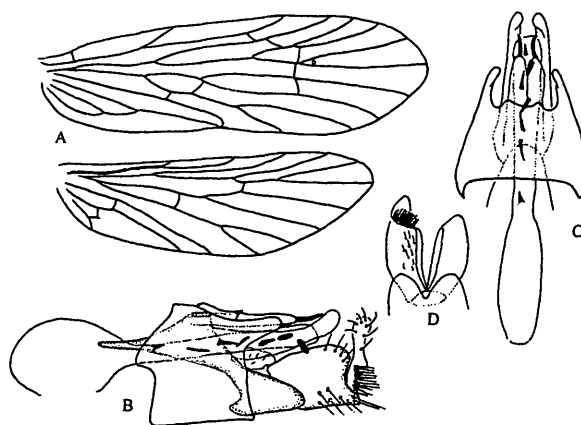


Fig. 3 Wings and male genitalia of *Gunungiella fanjingshana* n.sp.: A wing venations; B-D male genitalia: B lateral, C segments 8-10 dorsal, D inferior appendages ventral.

References

- BLAHNIK, R. J. (2005) *Alterosa*, a new caddisfly genus from Brazil (Trichoptera: Philopotamidae). *Zootaxa*, 991, 1–60.
- HSU L-P, & CHEN C-S. (1996) Eleven New Species of Caddisflies from Taiwan (Insecta: Trichoptera). *Chinese J Entomol* 16:125-135.
- MALICKY, H. (1993) Neue asiatische Köcherfliegen (Trichoptera: Philopotamidae, Polycentropodidae, Psychomyidae, Ecnomidae, Hydropsychidae, Leptoceridae). *Linzer Biologische Beiträge*, 25(2), 1099–1136.
- ROSS, H.H. (1956) *Evolution and Classification of the Mountain Caddisflies*. Urbana, University of Illinois Press, 213 pp.
- SCHMID, F. (1968) Le Genre *Gunungiella* Ulmer (Trichoptères: philopotamidae). *The Canadian Entomologist*, 100(9), 897-957.
- SCHMID, F. (1980) Genera des Trichoptères de Canada et des États adjacents. Les Insectes et Arachnides du Canada, part 7. Agriculture Canada, Publication 1692. Ottawa.
- SUN, C & MALICKY, H. (2002) 22 new species of Philopotamidae (Trichoptera) from China. *Linzer Biologische Beiträge*, 34(1), 521-540.
- Author's address:
Department of Entomology, Nanjing Agricultural University,
Nanjing 210095, Jiangsu Province, P. R. China
(chsun@njau.edu.cn)

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Braueria](#)

Jahr/Year: 2007

Band/Volume: [34](#)

Autor(en)/Author(s): Changhai Sun

Artikel/Article: [Descriptions of three new species of Philopotamidae from China 19-20](#)