A NEW SPECIES OF GENUS *HABROPHLEBIODES* ULMER (EPHEMEROPTERA: LEPTOPHLEBIIDAE)

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Abstract The present paper deals with a new species *Habrophlebiodes zijinensis* sp. nov. collected in Nanjing, Jiangsu Povince, China.

Key words Ephemeroptera, Leptophlebiidae, *Habrophlebiodes*, new species

1 INTRODUCTION

Ulmer (1939-1940) described the first Oriental species of *Habrophlebiodes*, *H. prominens*, from adults and nymphs collected in Sumatra and Java. Later on, Peters (1963) described *H. gillies* from adults collected in Hong Kong, and Tsui and Peters (1970) revised the type locality and collected the nymphs. Since then we have not seen any other articles on genus *Habrophlebiodes* in China. During the period of studies of the mayflies in Nanjing, a distinctive underscribed species was collected.

2 MATERIALS AND METHODS

Imagoes (male and female), subimagoes and mature nymphs were collected in the location at the foot of Zijin Mountain stream, Nanjing, transported to the laboratory and reared singly in jars. The jars were half filled with the same water from which the nymphs were collected and cantained a small stone for substrate, a few flakes of vegetable based fish food, and a small block of styrofoam on which subimagoes could rest. The jars were aerated slowly and subimagoes were tranferred to dry jars for their final moult. Imagoes were allowed to mature for 24 h to that colour and would be fully developed before preservation.

Specimens were dehydrated through an alcohol series and cleared in cedawood oil, then dissected and mounted on slides in Canada Balsam. Male genitalia were dissected prior to clearing and macerated in hot 100g/L KOH solution for 10 min. Genitalia were then passed through glacial acetic acid and cedarwood oil and mounted in Canada Balsam.

3 DESCRIPTIONS

***Habrophlebiodes zijinensis* sp. nov.**

Imago (in alcohol): length of male imago: body 6. 5-7. 2 mm; fore wing 6. 0-7. 5 mm. Length of female imago: body 7. 2-8. 3 mm; fore wing 7. 0-8. 2 mm. Eyes of male imago meet on meson of head; female eyes separated on meson of head by a length of the width of an eye. Wings: vein MP_2 of fore wing independent of vein MP_4, with cross vein connected (Fig. 1A). Costal projection of the hind wing well developed and acute, with a few cross veins (Fig. 1B). Legs: in order of fore legs tarsal arrangement of male 2,3,4,5,1 (Fig. 2A) and of female 1,2,3,4 (Fig. 2C); in order of hind legs tarsal arrangement of male 4,1,2,3 (Fig. 2D) and of female 4,1,2,3 (Fig. 2B). Claws dessimilar, 1 apically hooked, the other obtuse (Fig. 2E). Abdomen: dorsal lateral with brown spots, the 9th sternum of the male is deeply cleft apically (Fig. 2F). Male genitalia: forceps segments 2 and 3 short, base of penial lobe fused, with a hooked curves at the apical portion of ventral surface of penis and near the 1/3 of the end being cleft as its striking feature (Fig. 2 G-H).

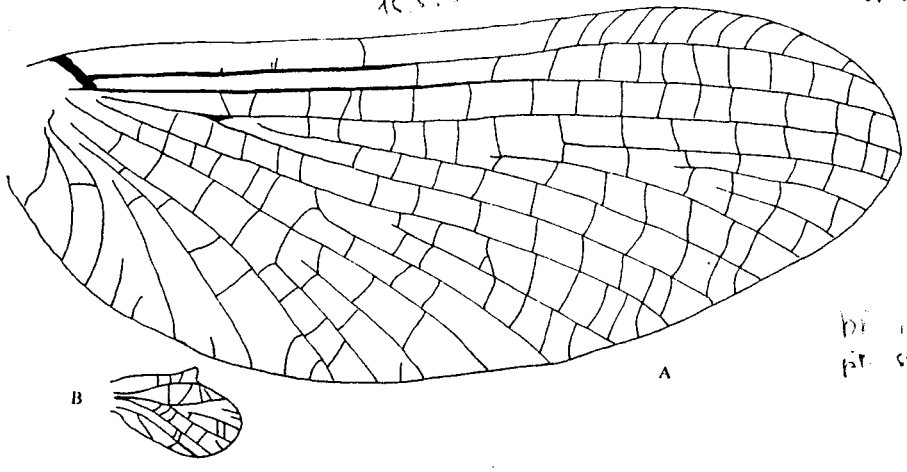

Fig. 1 *Habrophlebiodes zijingensis* sp. nov.
A. fore wing, B. hind wing.

Holotype: male imago, Jiangsu, China, May 24, 1988. Allotype: female imago, same locale, May 24, 1988. Paratype: 27 male imagoes, 36 female imagoes, 7 male subimagoes and 12 nymphs, same locale, May 6, 1988. All deposited in the Department of Biology, Nanjing Normal University, Nanjing, China.

Mature nymph (in alcohol): length of body: male 6. 2-7. 5 mm; female 7. 2-8. 5 mm. Head hypognathous, length of antennae 2. 0-2. 3 mm. Mouthparts: dorsal hair on labrum, anteromedian emarginated, lateral margin round (Fig. 3A); three branches of incisors of mandibles, outer one stronger and inner one with tufts (Fig. 3B); a row of teeth in anterior margin of maxillae, maxillary and labial palpi with three segments

(Fig. 3G-H), lingula of hypoharynx and lateral processes well developed, glossae bearing long hairs (Fig. 3D). Apex of claws hooked and narrow, inner margin of claws with a row of short denticles, progressively large near the apical region (Fig. 3E). Gills on segments 1-7 alike, biramous type (Fig. 3F). Abdominal pronotum yellow, on segments 1-9 brown speckle. Terminal filament slightly longer than cerci.

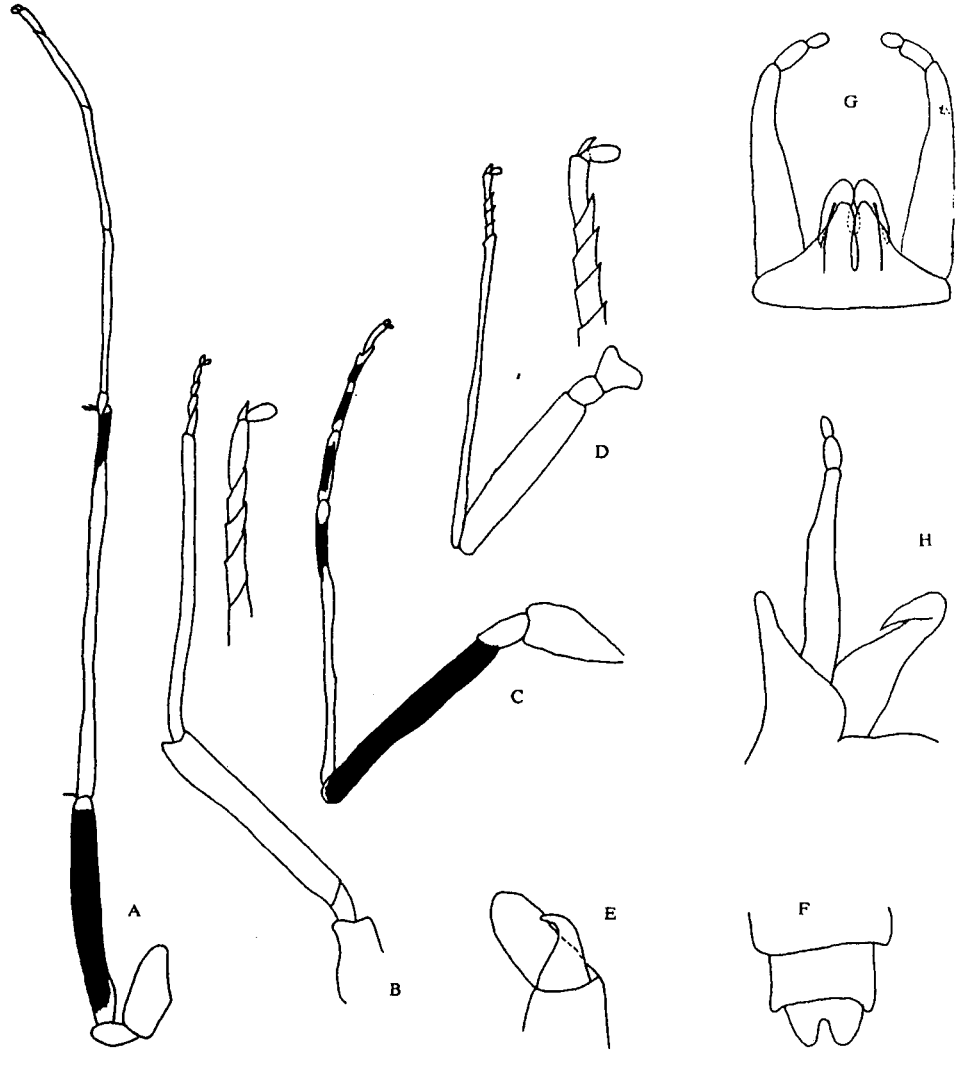

Fig. 2 *Habrophlebiodes zijinensis* sp. nov.
A. fore leg of male, B. hind leg of female and detail of tarsus, C. fore leg of female, D. hind leg of male and detail of tarsus, E. claw, F. 9th sternum of male, G. genitalia, ventral view, H. genitalia, lateral view.

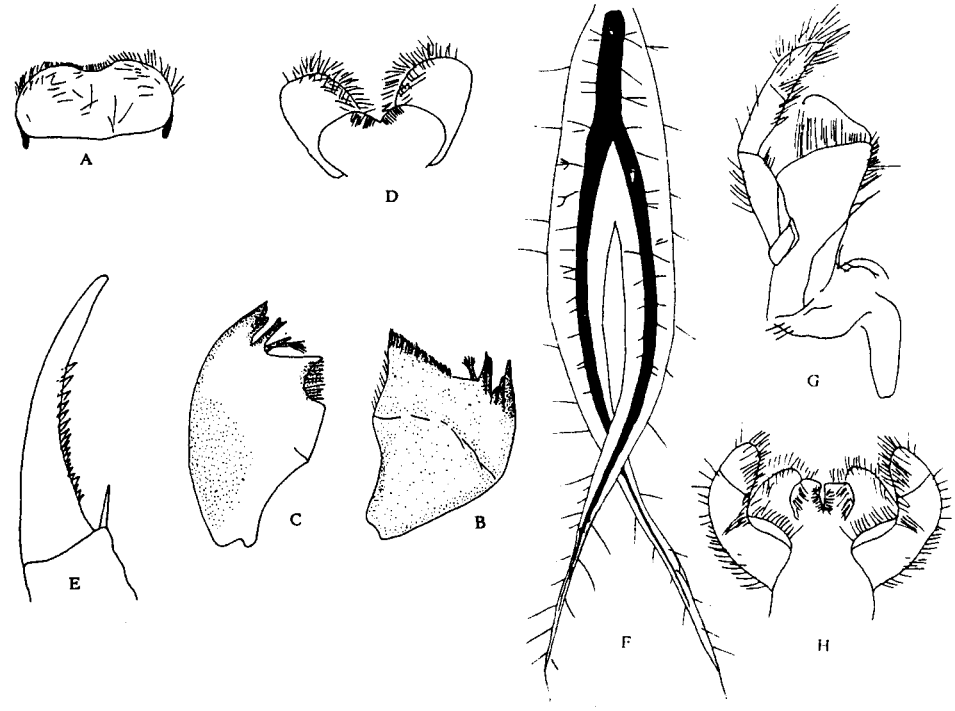

Fig. 3 *Habrophlebiodes zijinensis* sp. nov.
A. labrum, B. mandible, right, C. mandible, left, D. lingua, E. claw, F. gill, G. maxilla, H. labium and maxillae.

4 DISCUSSION

Habrophlebiodes gillies Peters (1963) and *H. zijinensis* sp. nov. can be destinguished from each other by the fact that the body of *H. zijinensis* is broader than that of *H. gillies*; the coloration of *H. zijinensis* is lighter than that of *H. gillies*, head and thorax of *H. zijinensis* sp. nov. is grayish -brown, and abodemen is in light grayish-brown; the male penis lobes of *H. zijinensis* sp. nov. is shorter than that of *H. gillies*, while the apital portion is cleft.

Acknowledgment We are grately in debted to Dr. W. L. Peters, chairman of Center for Studies in Entomology, Florida A & M University, who has kindly helped in the determination and confirmation of *Habrophlebiodes zijinensis* sp. nov.

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柔裳蜉属(*Habrophlebiodes* Ulmer)一新种 (蜉蝣目:细裳蜉科)

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柔裳蜉属在我国仅记载有吉氏柔裳蜉(*Habrophlebiodes gillies* Peters 1963)一种。本文根据采自南京的柔裳蜉属中鉴定一新种:紫金柔裳蜉(*Habrophlebiodes zijinensis* sp. nov.),并对其成虫、稚虫的形态特征作了详细的描述。新种与吉氏柔裳蜉相似。但紫金柔裳蜉身体较宽;体色较淡,头、胸部呈灰棕色,腹部淡灰棕色;外生殖器阳茎叶基部愈合,仅近端部1/3处凹陷,顶端腹侧有一钩状弯曲。两者有明显区别。