

小蜉属小蜉亚属一新种*

(蜉蝣目:小蜉科)

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摘要 本文记述小蜉属小蜉亚属 subgenus *Ephemerella* Walsh 一新种,小蜉亚属种类多,全世界已知有40种左右,广布于北美、苏联、日本等国,但中国尚未发现,因此本文也是小蜉亚属在中国的首次报道。

关键词 蜉蝣目 小蜉科 小蜉属 新种

安图小蜉,新种 *Ephemerella (Ephemerella) antuensis* sp. nov. (图1—27)

雄成虫(酒精保存) 体长5.5—6.5mm,褐色;复眼大,近圆形,上半部桔黄色,下半部灰黑色,两复眼在头部背面相接触(图1)。胸部黄褐色,前胸后缘略凹,中胸发达,背板两侧有深褐色斑纹。前翅长6—7.1mm,无色透明,Sc脉、R脉较粗壮,翅痣区稍暗且横脉呈网状(图2)。后翅长1.7—1.8mm, C脉近基部1/3处有一突起, Sc脉在突起前靠近C脉(图3、4)。足淡黄色,前足与身体几乎等长,腿节、胫节、跗节之比为5:8.8:8.3,跗节五节,长度排列顺序为2, 3, 4, 5, 1(图5)。后足较短,腿节、胫节、跗节之比为4.4:4.2:1.9,跗节四节,长度排列顺序为4, 1, 2, 3(图6、7),三对足的爪均为一钝一尖。腹部褐色,背腹面均有深褐色斑纹,每节背板后缘具横斑,两侧有斑点,1—7节腹板的中央有近似圆形的斑纹,每节两侧具小斜纹。三根尾须近乎等长,节间呈红棕色的环纹。

外生殖器黄褐色,尾铗三节,基节短而宽,第二节最长,约为端节的五倍多且顶端不膨大,端节长度不到宽度的两倍,长度排列顺序为2, 3, 1。阳茎顶端呈“V”型分开,背腹面均有针状的刺,背面24—35根,腹面24—34根,靠近顶端的侧缘略向外突起(图8)。

雌成虫(酒精保存) 体长5.5—6.7mm。体形与色斑似雄成虫,但头部较宽,复眼较小,两眼间距为0.69mm(图9)。前翅长7—7.5mm。前足较短,约为体长的4/9,腿节、胫节、跗节之比为3.1:3.8:2.0,跗节四节,长度排列顺序为4, 1, 2, 3(图10、11)。后足腿节、胫节、跗节之比为4.0:4.0:1.7,跗节长度排列顺序为4, 1=2, 3(图12、13)。三对足的爪均为一钝一尖。肛下板顶端钝圆,中央稍有凹陷(图14)。

雄亚成虫(酒精保存) 体长5.5—6.5mm,体形与色斑似雄成虫,但复眼较小,两眼不相接触,眼间距为0.055mm。前翅长6—7mm,微暗不透明,翅缘有缘毛。前足较短,约

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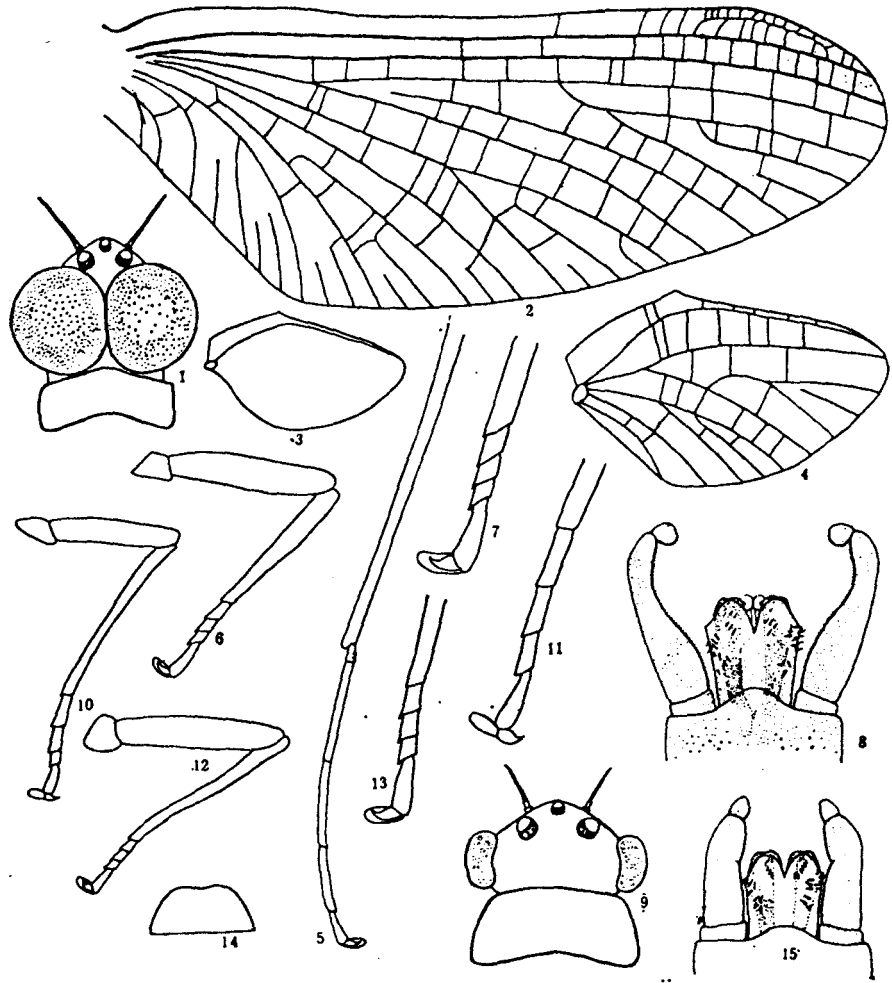


图 1—15 安图小蜉, 新种 *Ephemerella (Ephemerella) antuensis* sp. nov.

1—8. 雄成虫 (♂ imago): 1. 头部背面观 (head, dorsal view) 2. 前翅 (fore wing) 3. 后翅 (hind wing) 4. 后翅放大 (detail of hind wing) 5. 前足 (fore leg) 6. 后足 (hind leg) 7. 后足跗节放大 (detail of hind tarsus) 8. 外生殖器腹面 (genitalia, ventral view)

9—14. 雌成虫 (♀ imago): 9. 头部背面观 (head, dorsal view) 10. 前足 (fore leg) 11. 前足跗节放大 (detail of fore tarsus) 12. 后足 (hind leg) 13. 后足跗节放大 (detail of hind tarsus) 14. 肛下板 (subanal plate) 15. 雄亚成虫外生殖器 (genitalia of ♂ subimago)

为体长的 $\frac{1}{2}$, 后足与前足近乎等长。尾铗三节, 粗壮平直, 弯曲度小, 阳茎顶端呈“V”型分开, 背腹面均有刺 (图 15)。

雌亚成虫 (酒精保存) 体长 5.8—6.7mm, 前翅长 7.5—8mm, 其他特征似成虫。

稚虫 (酒精保存) 雄虫体长 5.8—6.7mm, 雌虫体长 6—7mm。体黄褐色, 上有深褐色斑纹。头部前端钝圆, 复眼黑色, 两眼间有褐色小斑块。口器深黄色, 上唇较宽, 下缘区及前下侧缘区密生细毛, 下缘中央略凹 (图 16)。上颚发达, 有切齿 5 个, 左右臼齿不对

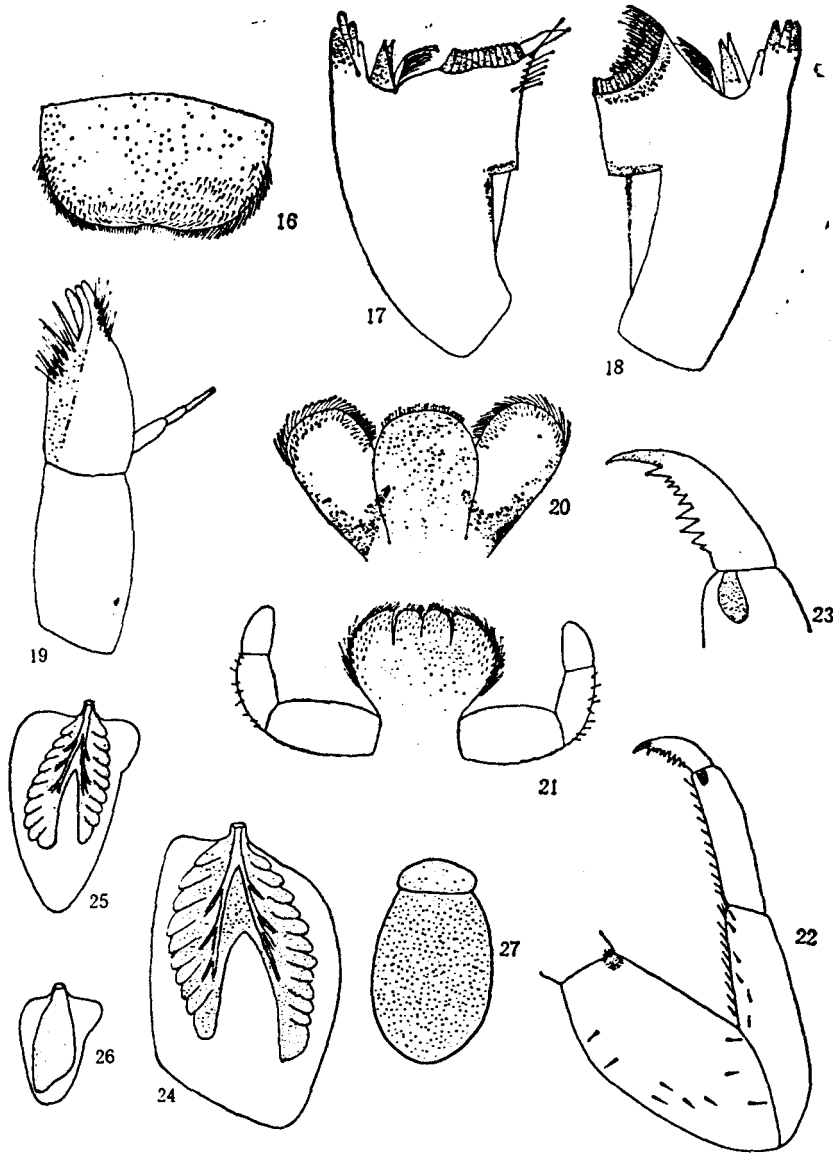


图 16—27 安图小蜉, 新种 *Ephemereilla (Ephemereilla) ansuensis* sp. nov.

16. 上唇 (labrum) 17. 右上颚 (right mandible) 18. 左上颚 (left mandible) 19. 下颚 (maxilla) 20. 舌 (hypopharynx) 21. 下唇 (labium) 22. 前足 (fore leg) 23. 前足爪放大 (detail of fore tarsal claw) 24. 第一对鳃 (first gill) 25. 第四对鳃 (fourth gill) 26. 第五对鳃 (fifth gill) 27. 卵 (egg)

称(图 17、18), 右上颚内侧缘顶端着生 7 根刚毛(图 17)。下颚顶端有齿 3 个, 顶缘区密生刚毛, 下颚须三节, 长度排列顺序为 1, 3, 2 (图 19)。舌分三叶, 顶缘密生细毛, 中叶的毛较短(图 20)。下唇的上缘区及上侧缘区密生刚毛, 中唇舌发育正常, 下唇须发达, 三节, 长度排列顺序为 1, 2, 3 (图 21)。前足淡黄褐色, 在腿节的基部和附节的端部有红棕色的斑纹, 腿节肥大, 有针状小刺 9 根, 胫节较细, 有小刺 6 根, 爪呈红棕色, 内侧有 9 个小齿(图 22、23)。

腹部黄褐色, 3—8 节的背部各有一对突起, 3—9 节的两侧均有向后突起的棘刺。鳃五对, 位于 3—7 节背部的两侧。鳃分背腹两片, 腹片又有许多小叶组成, 1—3 对鳃, 形状相似(图 24), 第 4 对略小, 心脏形(图 25), 第 5 对最小, 腹片单叶(图 26)。尾须三根, 近乎等长, 靠基部的部分每节顶端有环生的小刺, 接近顶端部分密生较长的刚毛。

卵 长 0.2—0.24mm, 宽 0.12—0.13mm。淡褐色, 长椭圆形, 顶端有一帽状突起(图 27)。

正模♂, 配模♀, 副模 40♂♂ 128♀♀, 30♂♂(亚) 25♀♀(亚), 稚虫 12, 吉林省安图县, 1984. VII. 18—25, 彭峰、李野。模式标本保存在南京师范大学生物系。

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A NEW SPECIES OF *EPHEMERELLA* SUBGENUS *EPHEMERELLA* FROM JILIN PROVINCE, CHINA
(EPHEMEREPTERA: EPHEMERLLIDAE)

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This paper describes a new species of mayflies of the genus *Ephemerella* subgenus *Ephemerella* from Jilin Province, China. The type specimens are deposited in the Department of Biology, Nanjing Normal University.

Ephemerella (*Ephemerella*) *antuensis* sp. nov. (figs. 1—27)

Male imago (in alc.)—Length: body 5.5—6.5 mm fore wing 6—7.1 mm. General colour brown with dark brown markings. Compound eyes large and contiguous dorsally; upper portion of which pale orange; lower portion gray black. Wings hyaline; Sc and R veins rather broad; stigmatic crossveins slightly anastomosed. Legs light yellow; length of fore legs subequal to the body. Ratio of femur: tibia: tarsus=5.0: 8.8: 8.3; tarsal joints in proportion rank 2, 3, 4, 5, 1. Claws dissimilar on all tarsi. Forceps 3-segments, 2nd the longest and not expanded at apex; the terminal segment longer than the basal one. Penes with 24—35 dorsal spines and 24—34 ventral spines; Three caudal filaments subequal.

Female imago (in alc.)—Length: body 5.5—6.7 mm; fore wing 7—7.5 mm. Head rather broader. Compared with the male: compound eyes smaller and 0.69 mm apart, fore leg shorter. Ratio of femur: tibia: tarsus=3.1: 3.8: 2.0; tarsal joints in proportion rank 4, 1, 2, 3. The posterior border of the 10th abdominal sternite having an emargination. Other characters as those in male, except for usual sexual differences.

Nymph (in alc.)—Length of males 5.8—6.7 mm and females 6—7 mm. General colour yellow-brown with dark brown markings. Mouth parts as in figs (16—21). Legs light brown; fore femora and tibia with spines; tarsal claws with 8—9 denticles. Abdominal terga with paired submedian tubercles on segments 3—8; distinct postero-lateral projections on segments 3—9. Imbricated gills on segments 3—7. Caudal filaments 3.5—5 mm; with whorls of spines on apex of segments in basal, and heavily setaceous on distal segments.

Holotype ♂, allotype ♀, paratypes 40♂♂, 128♀♀, nymph 12, Antu County, Jilin Province, 18—25, VII, 1984, Pen feng, Li Ye.

Key words Ephemeroptera Ephemerllidae *Ephemerella* new species