

## 小蜉属小蜉亚属二新种

(蜉蝣目: 小蜉科)

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(生物系)

### 摘 要

本文描述了采自吉林省抚松县的二种蜉蝣标本, 发现它们为小蜉属小蜉亚属二新种。

**关键词** 蜉蝣目 小蜉科 小蜉属 小蜉亚属 新种

小蜉亚属已知约有40多种, 广布于北美、苏联、日本, 我国未见报道。作者在鉴定从吉林省采集的蜉蝣标本中, 发现小蜉属小蜉亚属二新种, 现分述如下。

1 长白山小蜉, 新种 *Ephemerella* (*Ephemerella*) *Changbaishanensis* sp. nov.  
(图1—9)。

雄成虫(酒精保存): 体长7mm, 黄色, 具明显的黑褐色斑纹。头胸部深黄色, 腹部颜色较浅。复眼大, 卵圆形, 上部为橙色, 下部呈黑色, 两眼在头部背面相接触。翅无色透明, 前翅长7.10mm, 宽2.6mm, 前缘区、亚前缘区较暗, 翅痣区横脉分支呈网状。后翅长1.76mm, 宽0.88mm。足淡黄色。前足较长, 约为体长的9/10, 腿节=1.62mm, 胫节=2.91mm, 跗节=1.80mm, 跗节五节, 其长度排列顺序为2, 3, 4, 5, 1。后足长度不到前足的1/2, 腿节=1.18mm, 胫节=1.31mm, 跗节=0.49mm, 跗节四节, 长度排列顺序为4, 1, 2, 3。三对足的爪均为一尖一钝。

腹部细长, 呈黄色, 其中第1—5节淡黄色, 第6—10节深黄色, 背板的背面和两侧均有明显的黑褐色斑纹, 第1—7节腹板两侧具纵条纹。外生殖器黄色, 尾缺三节, 第2节最长, 端节长度不到宽度的两倍, 但略长于基节, 阴茎端部左右分开, 两叶顶端略尖, 侧缘呈圆形, 两叶间呈“V”形缺刻, 基部并合, 阴茎腹面具刺17根, 分布于左右叶的顶端, 背面无刺。三根尾须几乎等长, 呈淡黄色带有不明显的淡褐色环纹。

雄亚成虫(酒精保存): 体长6—6.5mm, 体形和斑纹似雄成虫, 但复眼较小, 眼间距为0.055mm。翅微褐色, 透明度小, 翅缘具缘毛, 前翅长6.5—7mm, 后翅长1.51mm。前足短, 其长度不到雄成虫前足的1/2, 后足略短于前足。尾缺三节, 粗壮平直, 阴茎腹面

\* 标本由彭峰、李野同志采集, 特此致谢。

具刺11—18根。

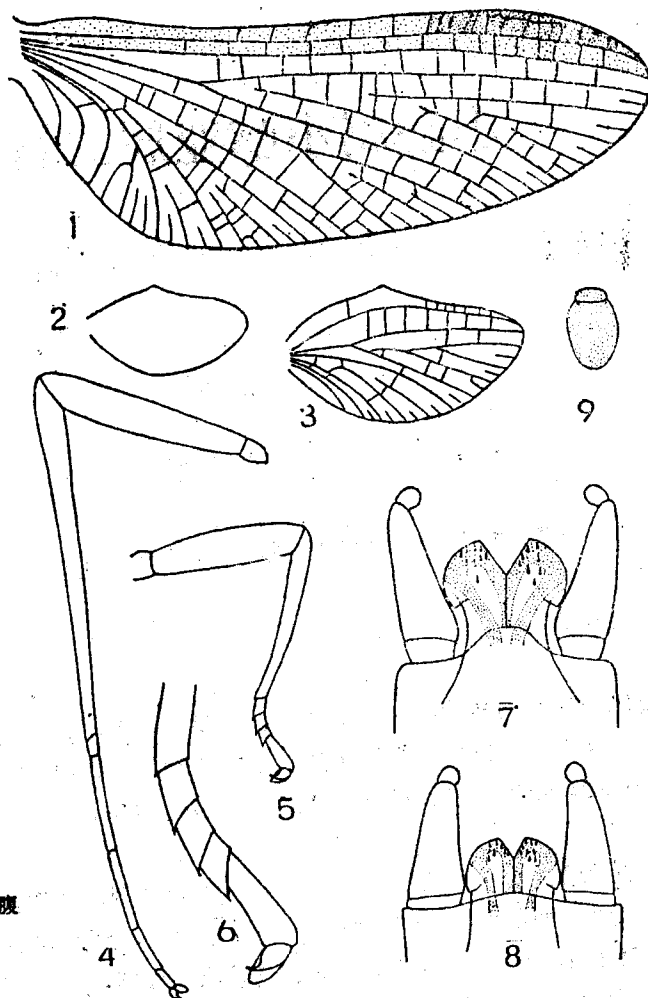


图1—9长白山小蜉，新种

1—7雄成虫：

1. 前翅
2. 后翅
3. 后翅放大
4. 前足
5. 后足
6. 后足跗节放大
7. 外生殖器腹面观
8. 雄亚成虫外生殖器腹面观
9. 卵

雌亚成虫(酒精保存)：体长6—7mm。复眼较小，长椭圆形，两眼间距为0.99mm。前翅长7—8mm，后翅长1.8mm。前足短，胫节>腿节>跗节，跗节四节，长度排列顺序为4，1，2，3。后足长于前足。其他特征似雄亚成虫。

卵：长0.15mm，宽0.10mm。长椭圆形，深绿色，一端具有褐色的端帽。

模式标本：正模♂，副模♂(成虫)、24♂♂15♀♀(亚成虫)，彭峰、李野于84年Ⅶ、26采自吉林省长白山。

2 抚松小蜉，新种 *Ephemerella* (*Ephemerella*) *fusongensis* sp. nov. (图10—14)

雄成虫(酒精保存)：体长7.8—8mm。头部棕褐色。复眼大，上半部浅黄色，下半部黑色，两眼在头部背面相接触。胸部棕褐色，中、后胸背板黄褐色。前翅长8mm，前缘区、亚前缘区略呈浅褐色，透明度小，翅痣区横脉呈网状。足淡黄色。前足长度约等于体长的8/10，腿节=1.49mm，胫节=2.72mm，跗节=2.18mm，跗节五节，长度排列顺序为2，3，4，5，1。后足长度不到前足的1/2，腿节=1.31mm，胫节=1.51mm，跗节=0.60mm，跗节四节，长度排列顺序为4，1，2，3。爪淡褐色，均为一尖一钝。

图10—14 抚松小蜉，新种

雄成虫：

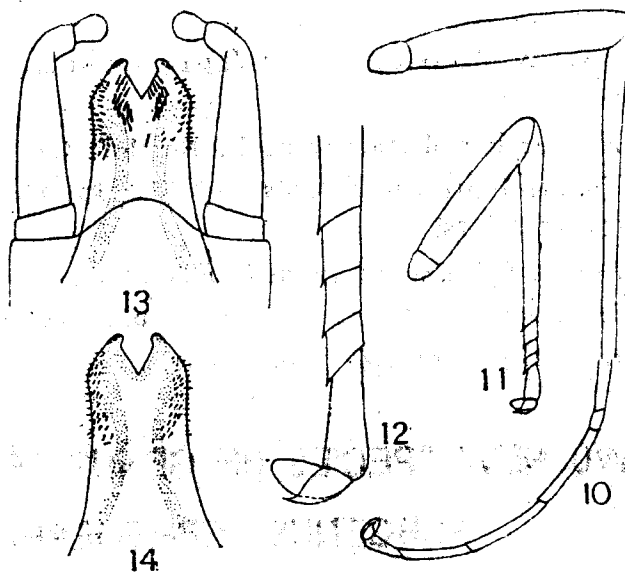
10. 前足

11. 后足

12. 后足跗节放大

13. 外生殖器腹面观

14. 阳茎背面观



腹部黄褐色，第7—10节深黄色，第1—9节背板后缘有一浅褐色横斑，侧缘具褐色纵纹和斑点，腹板黄褐色，无斑纹。外生殖器黄褐色，尾铗三节，第2节最长，约为端节的六倍，端节略长于基节。阳茎顶端分左右两叶，中间成“V”形缺刻，基部愈合，两叶阳茎顶端稍向内侧伸出，侧缘略圆，整个阳茎形似“老虎钳”，背腹面均有针状的刺，腹面具刺91根（其中大刺29根，小刺62根），背面着生较小的刺81根。尾须三根，呈黄色。

模式标本 正模♂，副模3♂♂，彭峰、李野于84年Ⅵ、18—25采自吉林省抚松县。  
全部模式标本均保存在南京师范大学生物系。

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## TWO NEW SPECIES OF GENUS EPHEMERELLA SUBGENUS EPHEMERELLA

(Ephemeroptera: Ephemerellidae)

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### Abstract

This paper describes two new species of mayflies of the genus *Ephemerella* subgenus *Ephemerella* from Jilin province, China. All the type specimens are deposited in the Department of Biology, Nanjing Normal University. Measurements are in mm.

*Ephemerella* (*Ephemerella*) *changbaishanensis* sp. nov. (fig 1—9)

Male imago (in alc): Length of body 7, fore wing 7.10. Head and Thorax deep yellow with dark brown marking. Compound eyes large and contiguous dorsally, upper portion of which orange, lower portion black. Wings hyaline, fore wing costal and subcostal area opaque, stigmatic cross-veins slightly anastomosed. Legs light yellow, fore legs about 9/10 as long as the body, length of segments of which: femur=1.62, tibia=2.91, tarsus=1.80, tarsus 5-segmented, tarsal joints in proportion rank 2, 3, 4, 5, 1. hind legs shorter and less than 1/2 as long as the fore leg, tarsal 4-segmented, joints in proportion rank 4, 1, 2, 3. Claws dissimilar in all tarsi.

Abdomen yellow with distinct dark brown markings. Forceps 3-segmented, 2nd the longest and not expanded at apex, the terminal segment longer than the base one. Penes with 17 ventral spines and

without dorsal spines, lateral margins of penial lobes rounded. Three caudal filaments light yellow with light brown annulations.

Holotype ♂, paratypes ♂ (imago), 24♂♂ 15♀♀ (subimago), All collected in 26, July, 1984 from Changbaishan of Jilin Province, by Pen Feng and Li Ye.

*Ephemerella* (*Ephemerella*) *fusongensis* sp. nov (fig 10—14)

Male imago (in alc): Length of body 7.8—8, fore wing 8—8.10. Head reddish brown, Compound eyes light yellow, its lower portion black. Thorax reddish brown. Wings almost colorless and hyaline, fore wing except costal and subcostal areas opaque, stigmatic crossveins anastomosed. Legs pale yellowish brown, fore legs about 8/10 as long as the body, femur=1.49, tibia=2.72, tarsus=2.18, tarsus 5-segmented, tarsal joints rank 2, 3, 4, 5, 1. hind legs more than 1/2 as long as the fore leg, tibia>femur>tarsus, tarsus 4-segmented and joints rank 4, 1, 2, 3. Claws dissimilar.

Abdomen yellowish brown except segments 7—10 yellow, with brown markings on terge and each side of 1—9 segments. Genitalia with forceps 3-segmented, enial lobes long with a V-shaped median notch, 93 dorsal spines (31 big and 62 small) and 81 ventral spines (small). Three caudal filaments subequal.

Holotype ♂, paratypes 3♂♂, all collected in 18—25, July, 1984 from Fusong Country in Jilin Province, by Pen Feng and Li Ye.

**Key words** order ephemeroptera, family ephemerellidae, genus ephemerella, subgenus ephemerella, New species.

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(上接93页)

clear that the earth's crust of Nanjing is stable comparatively. It suits for the Construction of the underground railway. But since in Nanjing it possesses a great variety of rocks and soils as well as complex hydrogeological and engineering geological environment, in different places the geological condition is different on the engineering of underground railway.

**Key words** nanjing, underground railway, stability of the earth's crust, basic earthquake intensity, hydrogeological environment, engineering geological environment.