

河南省蜉蝣新种记述

(昆虫纲: 蜉蝣目)

周长发 归 鸿 苏翠荣

(南京师范大学生物系, 江苏省南京市 210097)

摘要 本文描述了采自河南省伏牛山地区的蜉蝣目3新种, 即河南刺翅蜉 *Centrop tilum henanensis* sp. nov., 长茎锯形蜉 *Serratella longipennis* sp. nov. 与黑铁细蜉 *Caenis nigrof orceps* sp. nov., 讨论了它们区别于近似种的特征。

关键词 蜉蝣目 新种 河南 中国
中图分类号 Q 969. 212

河南省蜉蝣过去无专门报道。作者之一在1996年由河南省昆虫学会组织的考察中, 共采得蜉蝣标本800号, 经初步鉴定共15种(全部是河南省新记录), 分别隶属于3亚目4总科6科12属, 其中发现新种3种, 中国新记录种4种。现将新种分别描述如下。新种模式标本保存在南京师范大学生物系。

1. 河南刺翅蜉 *Centrop tilum henanensis*, 新种(图1~ 5)

雄成虫(酒精保存): 体长7 mm。体呈洁白色, 胸部及腹部末端有红色斑纹。复眼大, 上半部桔红色, 锥状, 下半部黑色, 球形。前翅长6mm, 翅痣区半透明, 翅脉如(图1)所示, 缘闰脉单根。后翅小, 狭长, 前缘突位于前缘脉的基部, 呈弯钩状(图2)。前足腿节、胫节、跗节之比为1. 6·1·1. 2, 各跗节长度排列顺序为2, 3, 4, 5, 1(图3)。中、后足较短, 后足腿节、胫节、跗节之比为1·0 8·0 6, 各跗节长度排列顺序为1, 4, 2, 3(图4)。各足具爪一对, 1钝1尖。腹部除末端3节红色外, 其余白色透明。尾缺白色, 3节, 基节短, 第2节最长, 端部膨大, 第3节圆钝, 短小。阳茎叶退化成一膜质片状构造(图5)。尾丝2根, 白色, 长度为14 mm。

雌成虫(酒精保存): 体长7. 5 mm。复眼较小, 黑色。身体除前足较雄成虫前足短外, 其余部分与雄成虫相似。

正模 ; **配模** ; **副模**: 1 成虫, 4 成虫, 河南省栾川县龙峪湾, 1996- V II- 11, 周长发、王备新采; 4 亚成虫, 嵩县白云山, 1996- V II- 14~ 19, 周长发、王备新采。

刺翅蜉属 *Centrop tilum* 广布于全世界, 种类多, 但亚洲报道种类较少, 俄罗斯, 日本两国仅各报道2种, 印度报道1种。中国成虫已知1种, 即中国刺翅蜉 *Centrop tilum chinensis*

She, Gui et You 1995。本新种的后翅极狭长, 前缘突大且弯曲, 可与亚洲各种区别开来。

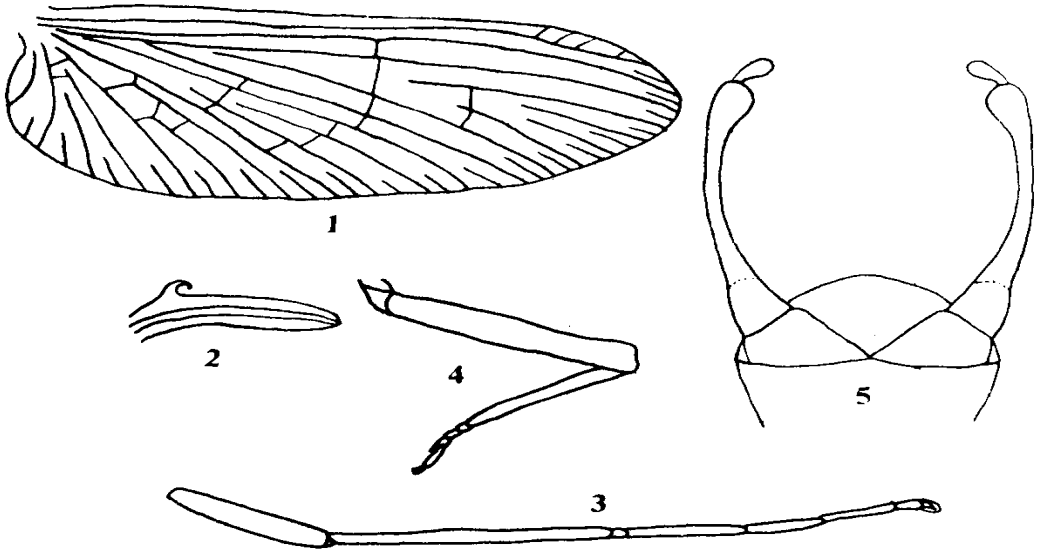


图1~ 5 河南刺翅蜉 *Centropetillum henanensis*, sp. nov.

雄成虫 (male imago): 1. 前翅 (fore wing); 2. 后翅 (hind wing); 3. 前足 (fore leg); 4. 后足 (hind leg); 5. 外生殖器腹面观 (genitalia, ventral view)

2. 长茎锯形蜉 *Serratella longipennis*, 新种 (图6~ 9)

雄成虫 (酒精保存): 体长7.5mm。体呈棕红色。复眼大, 在头顶相接触, 上半部桔红

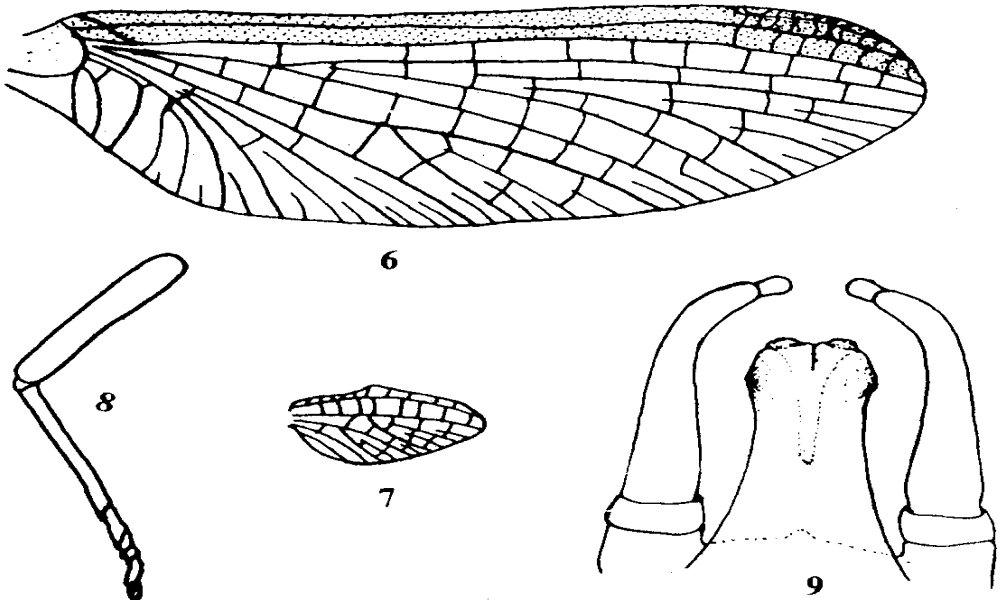


图6~ 9 长茎锯形蜉 *Serratella longipennis*, sp. nov.

雄成虫 (male imago): 6. 前翅 (fore wing); 7. 后翅 (hind wing); 8. 后足 (hind leg); 9. 外生殖器腹面观 (genitalia, ventral view)

色, 下半部黑色。前翅长6 mm, 翅脉弱, 翅痣区翅脉分叉, 前缘区和亚前缘区半透明, 横脉极弱, 翅缘具游离闰脉(图6)。后翅小, 在前缘中部具一小而钝的前缘突(图7)。后足腿节·胫节·跗节= 1·0 7·0 5, 跗节4节, 其长度排列为4, 1, 2, 3(图8)。外生殖器淡黄色, 尾铗略弯曲, 3节, 第2节最长, 第3节小, 长为宽的1.5倍, 阳茎略短于尾铗长度, 两阳茎叶大部分愈合, 只在端部分离, 两阳茎叶端部各具1小的向后突起, 每一阳茎叶背部又具1小的略向侧面的突起(图9)。尾须3根, 等长, 长度为7 mm, 基部节间具黑色横纹。

雌成虫(酒精保存): 体长较雄成虫稍大, 8 mm~ 8.5 mm。复眼小, 黑色。前、后翅的横脉弱。其余特征与雄成虫相似。

正模; 配模; 副模: 1, 3, 1 亚成虫, 嵩县白云山, 1996- V II- 16; 周长发、王备新采。

锯形蜉属 *Serratella* 广泛分布于亚洲和北美洲, 迄今为止全世界共有25种, 其中北美有14种, 亚洲11种。我国已报道6种。本新种成虫的阳茎形状与分布于北美洲的光滑锯形蜉 *Serratella levis* Day 相似, 但下列特征可将二者区别开来: 长茎锯形蜉成虫的阳茎叶较光滑锯形蜉长; 阳茎背部的侧突较小, 且每一阳茎端部具1小的向后的突起。

3 黑铗细蜉 *Caenis nigroorceps*, 新种(图10~ 14)

雄成虫(酒精保存): 体长2.2 mm。体呈黄白色。背面观, 复眼位于头部侧面, 单眼黑

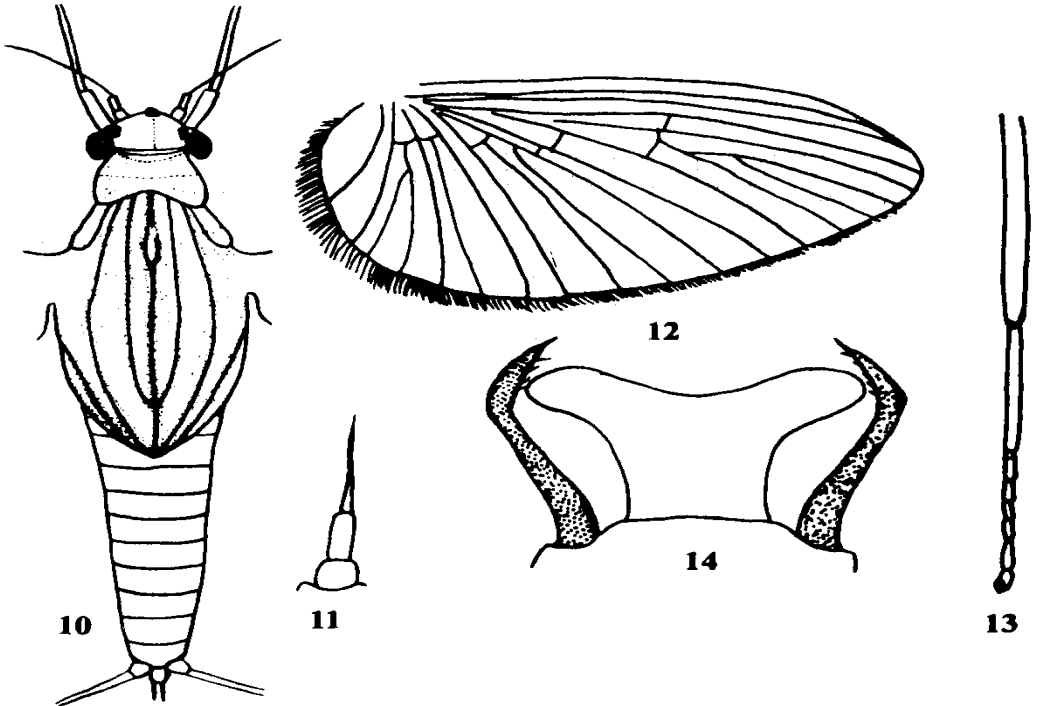


图10~ 14 黑铗细蜉 *Caenis nigroorceps*, sp. nov.

雄成虫(male imago): 10 身体背面观(body, dorsal view); 11 触角(antennae); 12 翅(wing); 13 前足(fore leg); 14 外生殖器腹面观(genitalia, ventral view)

色, 两侧单眼紧靠复眼(图10)。触角柄节长度是宽度的1.5倍左右, 梗节长度是宽度的3倍左右(图11)。前翅长2.2mm, 翅痣区半透明, 翅脉如(图12)所示。无后翅。前足长度为1.5mm, 腿节、胫节、跗节之比为1.0:6.0:4, 各跗节长度排列顺序为5, 1, 2, 3, 4(图13)。中、后足短, 各具爪一对, 1钝1尖。胸部背板中部具1条黑色纵纹。腹部黄白色。尾铗褐色, 针状, 骨化, 极度弯曲, 阳茎叶大部分愈合, 只在端部分开, 中间形成浅的凹陷(图14); 尾丝3根丝状, 长度为6.5mm。

雌成虫(酒精保存): 体长2.3mm~2.5mm。体色较雄成虫稍深。复眼小, 黑色。身体各部与雄成虫相似。

正模; 配模; 副模: 150, 100, 河南省栾川县龙峪湾, 1996-V II-12, 周长发、王备新采; 100, 120, 嵩县白云山, 1996-V II-14~19, 王备新、周长发采。

据初步统计, 细蜉属已知50种左右, 广布于全世界。我国以前只报道1种, 为黑点细蜉 *C. nigropunctata* Klapalek 1905。与黑点细蜉相比, 黑铗细蜉 *C. nigroforceps* sp. nov. 的个体较小, 只有前者一半左右; 阳茎侧叶向外伸展较长; 尾铗骨化成棕黑色, 且弯曲。

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THREE NEW SPECIES OF EPHEMEROPTERA (INSECTA) FROM HENAN PROVINCE OF CHINA

ZHOU Changfa, GU I Hong and SU Cuirong

Department of Biology, Nanjing Normal University, Nanjing, Jiangsu 210097, PRC

There is no special report on Ephemeroptera of Henan Province before. In 1996, 800 specimens were collected from Funiu Mountain in this Province. They are classified into 3 suborder, 4 superfamily, 6 family, 12 genera, total 15 species. The three new

species to science: *Centroptilum henanensis* sp. n., *Serratella longipennis* sp. n., *Caenis nigroforceps* sp. n. be described in details. All the holotypes are deposited in the Department of Biology, Nanjing Normal University.

1. *Centroptilum henanensis*, sp. nov. (Figs 1~ 5)

Male imago (In alc): Length of body 7.0 mm. General color whitish. Compound eyes large, upper portion reddish, lower portion dark-black. Fore wing 6 mm long, transparent. Hind wing very narrow, with hook-like costal projection. Ratio of femur-tibia-tarsus of fore leg and hind leg is 1.6:1.1:2 and 1.0:8.0:6 respectively. Fore tarsus joints in proportion rank: 2, 3, 4, 5, 1 and that of hind tarsus joints: 1, 4, 2, 3. Forceps three segmented; two cerci, 14.0 mm length.

Holotype, allotype, paratypes: 1, 4, Longyuwan, Luanchuan County, 11- V II- 1996, coll. by Zhou Changfa & Wang Beixing; 4 subimago, Mt Baiyunshan, Song County, 14~ 19- V II- 1996, coll. by Zhou Changfa & Wang Beixing.

The hind wing of this new species is narrower than that of other Asian species.

2. *Serratella longipennis*, sp. nov. (Figs 6~ 9)

Male imago (In alc): Length of body 7.5 mm. General color brown. Fore wing 6 mm long. Hind wing short. Ratio of femur-tibia-tarsus of hind leg is 1.0:0.7:0.5, hind tarsus joints in proportion rank = 4, 1, 2, 3. Three segments forceps, and 2nd longest. Most part of two pennis fused together, each pennis with a small dorsal projection and a posterior projection in the apical portion. Three caudal filaments, 7.0 mm length.

Holotype, allotype, paratypes: 1, 3, 1 subimago, Mt Baiyunshan, Song County, 16- V II- 1996, coll. by Zhou Changfa & Wang Beixing.

This new species is similar to *Serratella levis* Day, but the latter without posterior projection in the apical portion of the pennis.

3. *Caenis nigroforceps*, sp. nov. (Figs 10~ 14)

Male imago (In alc): body 2.2 mm long, whitish. Fore wing 2.2 mm long, transparent. Hind wings lack. Ratio of femur-tibia-tarsus of fore leg = 1.0:6.0:4. Fore tarsus joints in proportion rank = 5, 1, 2, 3, 4. Forceps not segmented, brown-black and curved. Two pennis fused together. Three caudal filaments, 6.5 mm long.

Holotype, allotype, paratypes: 150, 100, Longyuwan, Luanchuan County, 12~ 13- V II- 1996, coll. by Zhou Changfa & Wang Beixing; 100, 120, Mt Baiyunshan, Song County, 14~ 19- V II- 1996, coll. by Zhou Changfa & Wang Beixing.

New species is related to *C. nigropunctata* Klapalek 1905, but the forceps of *Caenis nigroforceps* sp. nov. is curved and longer than that of *C. nigropunctata*, color blacker, and the lateral margins of pennis expanded.

Key words: Ephemeroptera, new species, Henan Province, China