

To Dr. W. L. Peters, with all best wishes

# 伊蜉属 Genus *Eatonigenia* Zhang, Jun

## 在中国的首次发现

(蜉蝣目 蜉蝣科)

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### 摘 要

本文描述了采自海南岛的蜉蝣目中国新纪录属伊蜉属 *Eatonigenia* 一种: 查氏伊蜉 *E. chaperi*。

**关键词** 伊蜉属 *Eatonigenia*, 查氏伊蜉 *E. chaperi*, 首次发现, 中国

蜉蝣科主要分布在古北区, 在亚洲种类尤为丰富, McCafferty (1973) 对亚洲蜉蝣科种类的分类学和动物地理学进行了详细讨论。蜉蝣科在中国以前只发现蜉蝣属 *Ephemera* 一属。作者在海南岛万泉河中采集到伊蜉属 *Eatonigenia* 一种: 查氏伊蜉 *E. chaperi* (Navas, 1935), 这是伊蜉属的种类在中国的第一次发现。

### 中国蜉蝣科成虫分属检索表

- 1 (2) 翅缘横脉特别多, 翅缘成网状; 雄虫抱握器三节.....伊蜉属
- 2 (1) 翅缘横脉不多, 翅缘不成网状; 雄虫抱握器四节.....蜉蝣属

## 伊蜉属 Genus *Eatonigenia* Ulmer

Navas (1935) 描述产于印度尼西亚婆罗洲蜉蝣科一新种, 放在 *Hexagenia* Walsh 属中, 命名为 *H. chaperi* Navas. Ulmer (1939) 在关于婆罗洲岛蜉蝣目昆虫区系的专著中, 认为这个种具有其独特的形态学特征, 与 *Hexagenia* 属显然不同, 因而以它为模式种, 命名一单种新属: 伊蜉属 *Eatonigenia* Ulmer。以后一直没有关于伊蜉属的报道, 直至 McCafferty (1973) 对采自印度和泰国的伊蜉属标本进行了研究, 他命名了一个新组合 *Eatonigenia indica* (Chopra) 和二个新种 *E. seca* McCafferty & *E. trirama*

\* 本文承尤大寿教授悉心指导, 余书生同学与作者一起在海南岛采集标本, 在此致谢。

McCafferty, 并且在泰国也发现了查氏伊蜂 *E. chaperi*。所以, 伊蜂属目前只在东洋界发现了4种。查氏伊蜂 *E. chaperi* 在中国海南岛万泉河中的发现, 是本属在中国的首次记录。

伊蜂属成虫的主要特征是: 雄虫复眼大型, 在背面近乎连续, 中胸小盾片后缘细尖成针状; 翅上横脉特别多, 尤其在翅缘, 因而翅缘成网状; 雄虫外生殖器如图6, 抱握器三节, 第二节最长, 内弯, 末节很短小, 阳茎叶愈合, 其腹面着生有4对生殖乳突; 尾须很发达, 中尾丝退化。

查氏伊蜂 *Eatonigenia chaperi* (Navas) (图1—6)

*Hexagenia chaperi* Navas, 1935, Broteria, 31: 99.

*Eatonigenia chaperi*: Ulmer, 1939, Arch. Hydrobiol. Suppl., 16: 479.

*Eatonigenia chaperi*: McCafferty, 1973, Ori. Ins., 7: 55—57.

下面的描述依据在海南岛采集的成虫标本, 稚虫未采集到。

**雄成虫** 体长20—23毫米; 前翅长14—16毫米; 后翅长6—7毫米。体色浅栗褐色。复眼大, 黑色, 在背面近乎连续; 单眼基半部黑色, 背半部白色。前胸背板中部透明, 中胸背板小盾片后缘向后形成一刺突。前足(图1)基节和转节深棕色, 腿节浅黄棕色, 胫节和跗节白色但胫节两端具棕色斑纹。中足基节和转节棕色, 其余白色, 但腿节基部三分之一的背面为棕色, 末端有棕色斑纹。后足(图2)基节和转节棕色, 腿节内面在基端三分之一处为棕色, 末端深棕色, 胫节和跗节白色。各足爪均不相似, 一钩状一钝状。前翅(图3)膜质透明, 纵横脉均为棕色, 脉弱点处为白色。后翅(图4)膜质透明, 脉颜色比前翅略浅。腹部背板栗褐色, 近亚中部有一对棕色斑纹, 第10节背板颜色加深。腹部腹板(图5): 第1节腹板上近中部有1对棕色圆点, 第2—8节腹板上前端近中部有1对棕色斜纹, 其后具1对棕色圆点, 第9节腹板上具1对略加宽的深棕色纵纹。外生殖器见图6, 抱握器第一节末端深棕色, 第二节最长, 内弯, 基部三分之一浅紫红色; 阳茎叶基部向腹面收缩, 其腹面中部有一对黄棕色斑纹, 侧缘和后缘也为黄棕色, 背侧角圆形, 生殖乳突显著突起, 黄棕色, 位于阳茎叶前缘。尾须浅紫色, 上有小刚毛, 在关节处具白环, 中尾丝退化。

**雄亚成虫** 体色比雄成虫浅, 带有白色, 头和中后胸黄棕色, 前足和尾须浅紫色; 抱握器第一节和第二节的基半部为紫色。翅半透明带白色。

**雌成虫** 体长22—24毫米; 前翅长16—18毫米, 后翅长7—9毫米。体色和斑纹与雄成虫相似, 但前足的胫节和跗节为紫色。

**雌亚成虫** 体色和斑纹与雄亚成虫相似, 但腹部为浅紫色。

检查所用的标本 4♀♀成虫, 1986.V.9, 海南岛琼海县加积万泉河边; 6♂♂12♀♀成虫, 28♂♂45♀♀亚成虫, 1986.V.12, 地点同前; 34♂♂61♀♀成虫, 31♂♂39♀♀亚成虫, 1986.V.22, 地点同前。所有标本均由余书生、张俊所采, 保存于70%酒精中, 藏南京师范大学生物系动物教研室。

## 讨 论

海南岛标本的特征与McCafferty(1973)对该种的详细描述基本相符, 尤其是第2—7节腹板上条纹形状及排列(图5), 惟第1节腹板上近中部有1对棕色圆点和第9节腹板

上具1对略加宽的深棕色条纹，未见于McCafferty (1973) 的描述，以及生殖乳突位于阳茎叶腹面的前缘，而非McCafferty (1973) 描述的位于阳茎叶腹面的中央。但这些不同点作者认为似不应视为种间差别，可能是由于气候环境的不同，同种不同种群之间的差别，故海南岛的标本仍归为查氏伊蜉。

查氏伊蜉在国外分布于印度尼西亚的爪哇岛及婆罗洲和泰国，在中国海南岛的发现，说明本种广泛分布于东南亚地区。

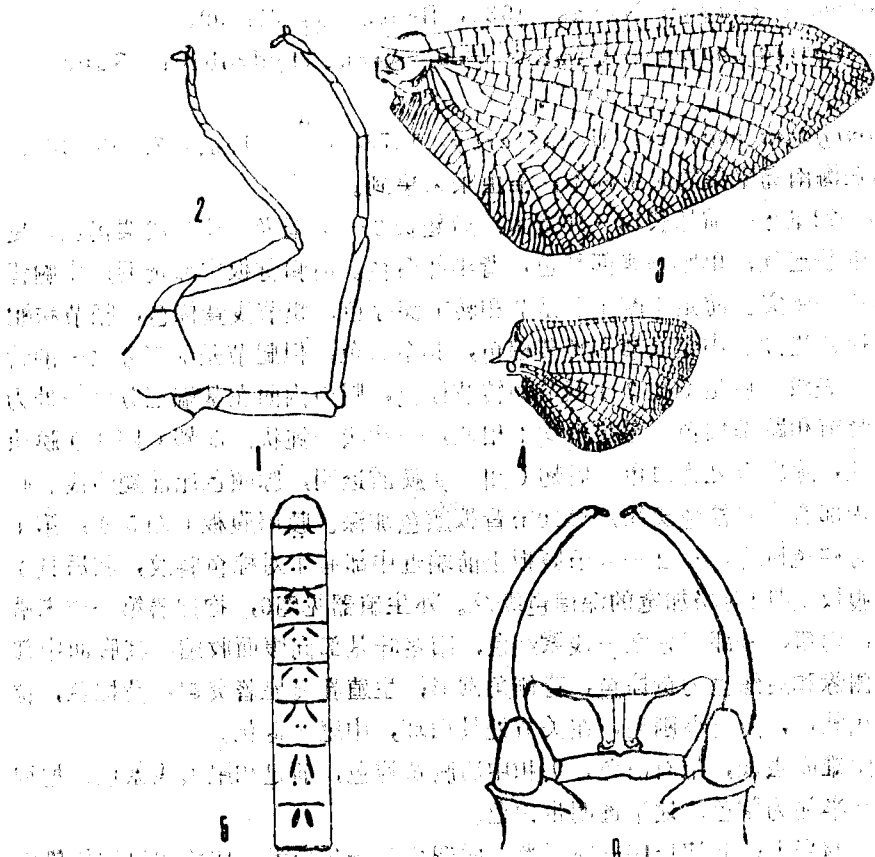


图1—6 查氏伊蜉 *Eatonigenia chaPeri* (Navas, 1935), 雄成虫 (male imago)

1. 前足 (fore leg)    2. 后足 (hind leg)    3. 前翅 (fore wing)    4. 后翅 (hind wing)  
5. 腹部, 腹面观 (abdomen, ventral view)    6. 外生殖器 (genitalia)

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## ON THE DISCOVERY OF GENUS EATONIGENIA (EPHEMEROPTERA: EPHEMERIDAE) IN CHINA

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### Abstract

*Eatonigenia chaperi* was known from Java, Borneo and Thailand. During an investigation on the Ephemeroptera of Hainan Island, China from April to June, 1986, *Eatonigenia chaperi* was found in the Wanquan River, Qionghai County. This is the first discovery of species of Genus *Eatonigenia* in China. Up to the present two Genera *Ephemer*a and *Eatonigenia* of Family Ephemeridae are known from China. The following descriptions is based on the specimens collected in Hainan Island.

*Eatonigenia chaperi* (Navas, 1935.)

**Male imago** Length: body 20—23 mm, fore wings 14—16 mm. Body chestnut. Eyes large, black and nearly contiguous dorsally; bases of ocelli black. Prothorax translucent in the middle part; mesonotum scutellum posterior formed a blunt spine. Fore legs (fig.1) coxae, trochanters and femurs brown; tibiae and tarsi whitish but basal and distal ends of tibiae with dark brown markings; middle legs and hind legs (fig.2) coxae and trochanters brown, the remainder whitish with brown markings. Fore wings (fig.3) and hind wing (fig.4) membrane hyaline, venation cinnamon brown; bullae white. Dorsum of abdomen brown chestnut with pair of brown submedian strips, tergite 10 darker. Abdomen sternum (fig.5): sternite 1 with one pair of submedian short dashes, sternites 2—8 with pair of brown submedian anterior oblique stripes and pair of short pale submedian posterior dashes, sternite 9 with pair of longitudinal dark brown widen stripes.

Genitalia as in figure 6, distal end of first segment of forceps marked with dark brown, second segment longest, curved inward,

basal third marked with light purplish red; penes with base constricted ventrally, ventral surface with one pair of brown markings in the middle part, distal-lateral angles rounded; nipples of gonopores yellowish brown, deeply emarginate and arising at posterior margin of penes. Cercis light purple with minute setae and with whitish annulations, caudal terminal filament vestigial.

*Male imago* General colour of body whitish brown, head and mesonotum yellowish brown. Fore legs and cercis light purple, first segment and basal half second segment of forceps marked with purple. Wings whitish translucent.

*Female imago* Length: body 22—24mm; fore wings 16—18mm. Coloration and markings similar to that of male imago, except the colour of tibiae and tarsi of fore legs purple.

*Female subimago* Coloration and markings similar to that of male subimago, but the abdomen light purple.

*Specimens examined* 4♀♀ imago, 1986.V.9, Wanquan River, Jiayi (19°12' N, 110°24' E), Qionghai County, Hainan Island, China; 6♂♂ 12♀♀ imago, 28♂♂ 45♀♀ subimago, 1986.V.12, location as above; 34♂♂ 61♀♀ imago, 31♂♂ 39♀♀ subimago, 1989.V.22, location as above. All specimens collected by Mr. She Shusheng and Zhang Jun, preserved in 70% alcohol, deposited in the Department of Biology, Nanjing Normal University, Nanjing, China.

The description of Hainan specimens is similar to that of *Eatonigenia chaperi* given by McCafferty (1973), but differs in the following two points: (1) sternite 1 with one pair of submedian short dashes and sternite 9 with pair of longitudinal dark brown wide stripes as in figure 5; (2) nipples of gonopores arising at the posterior margin of penes as in figure 6. This maybe the differences between the populations of *Eatonigenia chaperi*, because of the differences of climate of habitat where the specimens were collected.

**Key words:** Genus *Eatonigenia*, Ephemeroptera, Ephemeridae, discovery, China.