

Taxonomic study of the genus *Longzhouacris* (Orthoptera: Catantopidae) with description of a new species

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Abstract: The systematics of the genus *Longzhouacris* is reviewed. Ten species in this genus are recorded, including one new species, *Longzhouacris guizhouensis* sp. nov. This new species is allied to *Longzhouacris annulicornis* Lu, Li & You, 2000 but differs in: 1) length of prozona in pronotum 2.16 times as metazona; 2) tegmina reaching middle of 3rd abdominal tergum; 3) arolium of hind tarsi 1.5 times as long as the claw; 4) caudae in male triangular, apex acute; 5) basal half of antennae yellowish brown, terminal half dark brown; 6) anterior half of tegmina black brown, posterior half light brown; 7) hind tibia yellowish green. A key to the species in this genus is provided along with distribution information. Type specimens of this new species are deposited in the Institute of Zoology, Shaanxi Normal University.

Key words: Caelifera; Acridoidea; taxonomy; key

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龙州蝗属分类研究及一新种记述（直翅目：斑腿蝗科）

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摘要: 系统研究了龙州蝗属, 共记述 10 种, 其中包括 1 新种, 即贵州龙州蝗 *Longzhouacris guizhouensis* sp. nov., 该新种近似于斑角龙州蝗 *L. annulicornis* Lu, Li & You, 2000, 主要区别为: 1) 前胸背板沟前区长为沟后区长长的 2.16 倍; 2) 前翅到达第 3 腹节背板中部; 3) 后足跗节爪间中垫长为爪长的 1.5 倍; 4) 雄性尾片三角形, 顶尖; 5) 触角基半黄褐色, 端半暗褐色; 6) 前翅前半黑褐色, 后半淡褐色; 7) 后足胫节黄绿色。文中附有分种检索表。新种的模式标本保存于陕西师范大学动物研究所昆虫标本室。

关键词: 蝗亚目; 蝗总科; 分类; 检索表

Introduction

The genus *Longzhouacris* was erected by You & Bi in You *et al.* (1983) with *L. rufipennis* You & Bi, 1983 as the type species. Zheng and Liang (1984) reported *L. hainanensis* Zheng & Liang, 1984. Li and Jin (1984) reported *L. jinxiuensis* Li & Jin, 1984. Huang and Xia (1984) described *L. longipennis* Huang & Xia, 1984. Liang (1985) reported *L. nankunshanensis*

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Liang, 1985. Jiang and Zheng (1994) reported *L. huanjiangensis* Jiang & Zheng, 1994. Li *et al.* (1996) reported *L. brevipennis* Li, Lu & You, 1996. Liang (1996) treated *L. nankunshanensis* Liang, 1985 as synonymous to *L. jinxiuensis* Li & Jin, 1984; Liu and Li (1995) reported *L. mirabilis* Liu & Li, 1995. Lu, Li and You (2000) described *L. annulicornis* Lu, Li & You, 2000. Fu *et al.* (2002) reported *L. miaoershanensis* Fu, Zheng & Huang, 2002. At this point, the genus *Longzhouacris* included 9 species distributed in Guangdong, Guangxi, Hainan, Hunan and Yunnan Provinces.

When identifying Acridoidea specimens provided by Hechi College, one new species on the genus *Longzhouacris* was found. This new species is described and type specimens are deposited in the Institute of Zoology, Shaanxi Normal University.

Taxonomy

Longzhouacris You & Bi, 1983

Longzhouacris You & Bi in You *et al.*, 1983. *Entomotaxonomia*, 5(2): 167.

Type species: *Longzhouacris rufipennis* You & Bi, 1983.

Body small to median. Frons oblique, frontal ridge extremely inconspicuous, disappearing below median ocellus; disc of pronotum with numerous wrinkles and punctures; posterior margin broadly rounded; mid and lateral carinae absent; prozona longer than metazona. Prosternal spine short conical, apex acute. Tegmina long ovate, laterally located, divided on the back, sometimes adjoined in the middle. Median carina of upper side of hind femur with fine denticles, apex of kneelobe rounded. Tergum of last abdominal segment with or without small caudae in male. Epiproct inverted trapezoidal in shape, terminal triangular and protuberant in the middle. Subgenital plate in female long and narrow, posterior margin triangular and protuberant in the middle, with one small tooth on each side or posterior margin with three teeth.

Key to species of *Longzhouacris*

- 1(2) Tegmina longe, apex surpassing posterior margin of the 4th abdominal tergum; tergum of last abdominal segment in male without caudae; lateral margin of epiproct straight; posterior margin of subgenital plate obtuse rounded in dorsal view; hind tibia violet-blue. China (Yunnan) *L. longipennis* Huang & Xia
- 2(1) Tegmina shorte, apex not reaching posterior margin of the 4th abdominal tergum; tergum of last abdominal segment in male with caudae
- 3(4) Each side of abdomen with more or less continuous dark blue band; tegmina reaching middle of the 2nd abdominal tergum; subgenital plate in male truncated in dorsal view. China (Hunan)
..... *L. mirabilis* Liu & Li
- 4(3) abdomen without distinctive longitudinal band on its side
- 5(10) tegmina longer, apex reaching middle or posterior margin of 3rd abdominal tergum
- 6(7) Apex of subgenital plate in male truncated or concaved in dorsal view. China (Hainan)
..... *L. hainanensis* Zheng & Liang
- 7(6) Apex of subgenital plate in male conical or obtusely rounded in dorsal view
- 8(9) Prozona in pronotum 1.74 times as long as metazona; tegmina reaching posterior margin of 3rd abdominal tergum; apex of caudae in male obtuse; arolium of hind tarsi slightly longer than the claw; middle segments of antennae yellow and black respectively; hind tibia light blue; tegmina light reddish brown, with a yellowish green stripe in the middle. China (Guangxi) *L. annulicornis* Lu, Li & You

- 9(8) Prozona in pronotum 2.16 times as long as metazona; tegmina reaching middle of 3rd abdominal tergum; apex of caudae in male acute; arolium of hind tarsi 1.5 times as long as the claw; basal half of antennae yellowish brown, terminal half dark brown; hind tibia yellowish green; anterior half of tegmina black brown, posterior half light brown. China (Guizhou) *L. guizhouensis* sp. nov.
- 10(5) Tegmina short, apex not reaching middle of 3rd abdominal tergum
- 11(16) Apex of subgenital plate in male conical or obtusely rounded in dorsal view.
- 12(13) Body large; arolium between claws of hind tarsus developed, with length about 2 times the claw. China (Guangxi) *L. rufipennis* You & Bi
- 13(12) Body smaller; length of arolium between claws of hind tarsus equal to or slightly greater than the claw
- 14(15) Antennae golden yellow; caudae on posterior margin of last abdominal tergum triangular; posterior margin of subgenital plate in female triangular and protuberant in the middle, each side with a small tooth. China (Guangxi, Guangdong) *L. jinxiuensis* Li & Jin
- 15(14) Antennae light yellowish brown, caudae on posterior margin of last abdominal tergum obtusely rounded; posterior margin of subgenital plate in female with three teeth. China (Guangxi) *L. brevipennis* Li, Lu & You
- 16(11) Apex of subgenital plate in male truncated or concave in dorsal view
- 17(18) Prozona in pronotum 1.57 times as long as metazona in male; apex of subgenital plate in male truncated in dorsal view; apex of lower kneelobe of hind femur obtusely rounded. China (Guangxi) *L. huanjiangensis* Jiang & Zheng
- 18(17) Prozona in pronotum 2.2 times as long as metazona in male; apex of subgenital plate in male truncated in dorsal view, slightly concave in the middle; apex of lower kneelobe of hind femur rectangular. China (Guangxi) *L. miaoershanensis* Fu, Zheng & Huang

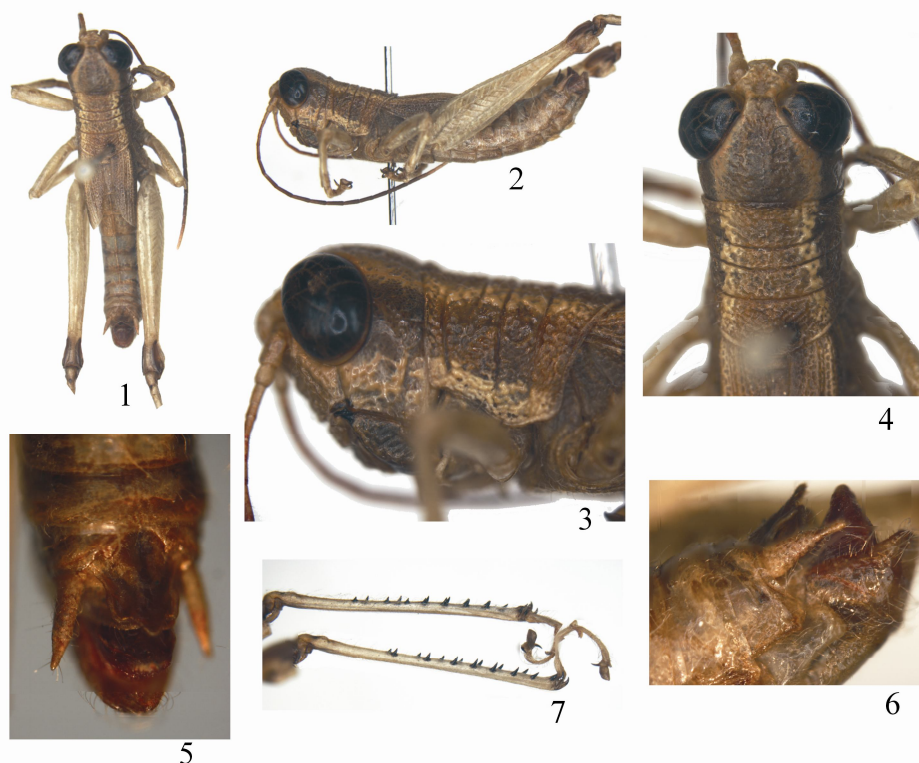
***Longzhouacris guizhouensis* sp. nov.** (Figs. 1–7)

Male. Body small to median, stubby. Head large but short, vertex trapezoidal shaped, concave in the middle, slightly oblique forward, forming round shape with frontal ridge in lateral view; frontal ridge obvious between antennae, disappearing below median ocellus. Eyes short ovate, longitudinal diameter of eyes 1.5 times horizontal diameter, 2.4 times length of subocular furrow. Antennae filiform, slender, reaching middle of hind femur, length of middle segments about 4–5 times its width.

Pronotum cylindrical, disc with numerous large punctures and wrinkles; anterior margin slightly arched, posterior margin broadly rounded; lacking mid and lateral carinae; three sulci obvious, length of prozona 2.16 times metazona; length of lateral lobe of pronotum greater than height, anterior lower angle obtuse, posterior lower angle rounded. Prosternal spine short, conical. Length of mesosternal lobe slightly greater than width, interspace trapezoidally shaped; metasternal lobes almost connected to each other. Tegmina long ovate, apex narrowly rounded, divided on the back, reaching middle of 3rd abdominal tergum; wings extremely small, only reaching half of tegmina.

Median carina on upper side of hind femur with fine denticles, apex of lower kneelobe almost rectangular; outer side of hind tibia with 7 spines, inner side with 8 spines, lack of outer apical spine; 3rd segment of hind tarsus slightly longer than 1st segment, arolium large, with length 1.5 times the claw. Posterior margin of last abdominal tergum with triangular caudae, apex acute; epiproct inverted and trapezoidal in shape, lateral margin slightly curved inward, terminal triangular and protuberant. Cercus long conical, apex acute. Subgenital plate short conical in lateral view, apex rounded in dorsal view.

Body light yellowish green; basal half of antennae yellowish brown, terminal half dark brown; eyes dark brown; anterior half of tegmina black brown, posterior half light brown; hind tibia yellowish green.



Figures 1–7. *Longzhouacris guizhouensis* sp. nov. ♂. 1. Body, dorsal view; 2. Body, lateral view; 3. Head and pronotum, lateral view; 4. Head and pronotum, dorsal view; 5. Terminalia, dorsal view; 6. Terminalia, lateral view. 7. Hind tarsi.

Female. Unknown.

Measurements. Length of body: ♂ 11.0–11.2 mm; Length of pronotum: ♂ 4.0–4.5 mm; Length of tegmina: ♂ 5.0–5.1 mm; Length of hind femur: ♂ 9.0–9.2 mm.

Holotype. ♂, **China**, Guizhou, Libo, 01-X-2013, collected by Weian DENG. **Paratype.** 1♂, same data as holotype.

Remarks. This new species is allied to *Longzhouacris annulicornis* Lu, Li & You, 2000. The main differences are listed in Table 1.

Etymology. The specific epithet is derived from the type locality “Guizhou”.

Table 1. Differences between *L. guizhouensis* sp. nov. and *L. annulicornis* (male)

	<i>L. annulicornis</i>	<i>L. guizhouensis</i> sp. nov.
Length of prozona in pronotum	1.74 times the length of metazona	2.16 times the length of metazona
Tegmina reaching 3rd abdominal tergum	Posterior margin	Middle
Caudae in male	Apex obtuse	Apex acute

Table 1. (Continued)

	<i>L. annulicornis</i>	<i>L. guizhouensis</i> sp. nov.
Length of arolium between claws on hind tarsus	Slightly greater than length of claw	1.5 times the length of claw
Antennae	Middle segments yellow and black respectively	Basal half yellowish brown, terminal half dark brown
Hind tibia	Light blue	Yellowish green
Tegmina	Light reddish brown, with a yellowish green stripe in the middle	Anterior half black brown, posterior half light brown

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