A new species of *Confusacris* (Orthoptera: Acrididae), with a key to the known species

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The genus *Confusacris* Yin & Li, 1987 belongs to Acrididae: Chrysochraontinae with 4 described species. It is readily distinguished from the related genera as follows: the antennae sharply ensiform, especially in the female; elytra of male with irregular quadrilateral cell, and the apex of the elytra being concave; lateral carinae of pronotum distinct or more distinct; first segment of hind tarsus longer than third one distinctly. All species of the genus are distributed in northern China. A new species, *Confusacris xinjiangensis* Wang & Zheng sp. n. is described in this paper. A key to the known species of the genus is given.

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1. Introduction

The genus *Confusacris* was erected by Yin & Li (1987) with *Confusacris brachypterus* as the type species. The genus is very closely related to *Euthystira* Fieber, *Euthystiroides* Zhang, Zheng & Ren, 1995 and *Mongolotettix* Rehn, 1928. The genus *Confusacris* is readily distinguished from the genus *Euthystira* and *Euthystiroides* by the following characters: the antennae sharply ensiform, especially in the female; and the apex of the elytra being concave in the male (Bei-Bienko & Mistshenko 1951, Yin & Xia 2003).

It differs from the genus *Mongolotettix* in: lateral carinae of pronotum distinct or more distinct; elytra of male with irregular quadrilateral cell; first segment of hind tarsus distinctly longer than third one (Yin & Li 1987, Yin & Xia 2003). The genus with four descripbed species affiliates to Chrysochraontinae, Acrididae (Yin & Xia 2003). Otte & Naskrecki (2006) grouped it in Gomphocerinae as a member of the trobe Chrysochraontini.

The four described species of *Confusacris* are *C. brachypterus* Yin & Li, 1987 from Jingyuan, Ningxia; *C. unicolor* Yin & Li, 1987 from Eyouqi, Inner Mongolia; *C. xinganensis* Li & Zheng, 1993 from Jingpohu, Heilongjiang; *C. liminophila* Liang & Jia, 1994 from Alihe and Deerbuer, Inner Mongolia (Yin & Li 1987, Li & Zheng 1993, Zheng 1993, Liang & Jia 1994, Yin *et al*. 1996, Yin & Xia 2003). All species of the genus are distributed in northern China (Fig. 1).

In this paper, a new species of the genus *Confusacris* is described from the Xinjiang Uigur Autonomous Region of China. A key to the known species of the genus *Confusacris* is presented.

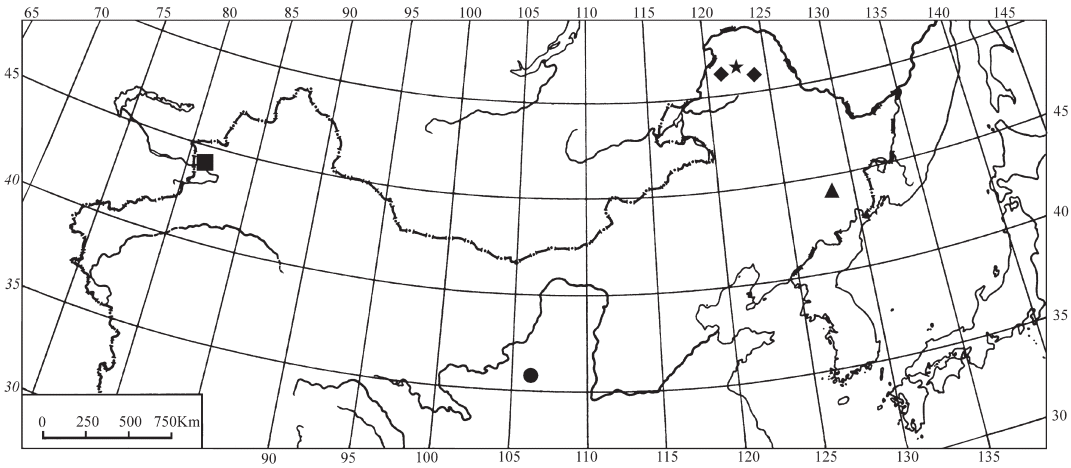

Fig. 1. Distribution of the species of the genus *Confusacris* Yin & Li, 1987 in northern China. ■ = *C. brachypterus* Yin & Li, 1987. ▲ = *C. xinganensis* Li & Zheng, 1993. ✶ = *C. unicolor* Yin & Li, 1987. ● = *C. xinjiangensis* Wang & Zheng sp. n. ◆ = *C. liminophila* Liang & Jia, 1994.

2. Material and methods

Morphological techniques and terminology follow Xia *et al*. (1994). Specimens examined are deposited in the Institute of Zoology, Shaanxi Normal University (IZSNU), Xi'an. The phallic complex and epiphallus were stored in 70% alcohol. Photographs of specimens were taken with a Nikon Coolpix995. Digital images were imported into Adobe Photoshop 5.0 for labeling and plate composition.

3. Key to the known species of the genus *Confusacris* Yin & Li, 1987

1. Prozona of male pronotum longer, 1.6 times as long as metazona 2
   Prozona of male pronotum shorter, 1.2–1.35 times as long as metazona 3
2. Eyes 1.2–1.3 times as long as subocular furrow in male, or slightly shorter than subocular furrow in female. Epiphallus with two pairs of lophi, outer lophi large and bulging, inner lophi small, pointedly trapezoidal; anterior projection bulging, apex rounded. Arolium slightly surpassing apex of claws. Body olive green. (China: Xinjiang)
   xinjiangensis Wang & Zheng sp. n.
   Eyes 1.75 times as long as subocular furrow in male, or 1.3 times as long as subocular furrow in female. Epiphallus with two pairs of lophi, outer lophi U-shaped, inner lophi small, ball-shaped; anterior projection triangularly projected. Arolium reaching the middle of claws. Body yellow-brown (China: Ningxia)
   brachypterus Yin & Li, 1987
3. Terminal tergum of male abdomen with cauda. (China: Inner Mongolia)
   limnophila Liang & Jia, 1994
   Terminal tergum of male abdomen without cauda 4
4. Prozona 1.3–1.35 times as long as metazona in male. Elytra of male extending beyond middle of hind femur. Hind margin of tergum of male periproct concave near the base. Body larger, robust. (China: Heilongjiang)
   xinganensis Li & Zheng, 1993
   Prozona 1.2 times as long as metazona in male. Elytra of male not quite reaching or reaching the middle of hind femur. Hind margin of tergum of male periproct striaght near the base. Body small. (China: Inner Mongolia) *unicolor* Yin & Li, 1987

Table 1. Comparison of *Confusacris xinjiangensis* sp. n. with two related species of the genus.

Characters	*C. brachypterus* Yin & Li	*C. xinjiangensis* Wang & Zheng sp. n.	*C. unicolor* Yin & Li
Prozona of male pronotum	1.6 times as long as metazona	1.6 times as long as metazona	1.2 times as long as metazona
Longitudinal diameter of eyes	1.75 times as long as subocular furrow (male) or 1.3 times as long as subocular	1.2–1.3 times as long as subocular furrow (male), or slightly shorter (female)	1.41 times as long as subocular furrow (male), or slightly shorter than subocular furrow (female)
Coloration of body	Yellow-brown	Olive green	Olive green
Elytra of male	Not extending to one-third of hind femur	Extending to one-third of hind femur	Not quite reaching or reaching the middle of hind femur
Hind margin of tergum of male periproct	Straight near the base, with two small rounded cauda	Concave near the base, without cauda	Straight near the base, without cauda
Arolium	Reaching the middle of claws	Slightly surpassing apex of claws	Slightly surpassing apex of claws
Epiphallus	Outer lophi U-shaped, inner lophi ball-shaped; anterior projection triangularly projected	Outer lophi large and bulging, inner lophi pointedly trapezoidal; anterior projection bulging, apex rounded	Outer lophi U-shaped, inner lophi ball-shaped; anterior projection bulging, apex pointed

4. Description of the new species, *Confusacris xinjiangensis* Wang & Zheng sp. n. (Figs. 2–3)

Diagnosis. The new species is allied to *C. brachypterus* and *C. unicolor*. The major differences are listed in Table 1.

Type materials. Holotypes: 1 ♂, 1 ♀, China: Huocheng County, Xinjiang Uigur Autonomous Region (44°11'N, 80°54'4"E), 1,000–1,400 m a.s.l., 26.VII.2004 (Yanfeng Wang, Liang Yang and Ling Zhang, coll.); Paratypes: 1 ♂, 4 ♀♀, same data as holotype.

Descriptions. Male (Fig. 2c, d). Body slender, small. Head slightly shorter than pronotum. Frons oblique in profile, frontal ridge with longitudinal groove; lateral margins of frontal ridge nearly parallel before median ocellus and gradually widened toward clypeus. Apex of vertex rounded and blunt with distinct median carina. Fastigial foveolae absent. Antennae ensiform, longer than head and pronotum together, middle segments about 1.7 times as long as wide. Eyes oval, longitudinal diameter about 1.6–1.75 times as its horizontal diameter and 1.2–1.3 times as long as subocular furrow. Pronotum tectiform, its anterior margin straight, anterior margin and posterior margin of pronotum straight. Median carina and lateral carinae of pronotum distinct, lateral carinae thicker and nearly parallel; posterior transverse sulcus situated behind the middle part of pronotum, length of prozona 1.6 times as long as metazona; anterior transverse and median transverse sulcus faint in dorsal view, posterior transverse sulcus distinct, slightly curved and crossing median carina. Width of mesosternal interspace slightly larger than its length; metasternum lobes separated. Elytra short with irregular quadrilateral cell in apical part, extending to one-third of hind femur; apex of elytra concave medially (Fig. 2b); medial area slightly wider than cubital area; hind wings reduced, concaved and fused to the thorax. Basal part of femoral stridulatory file forms double lines, teeth cone-

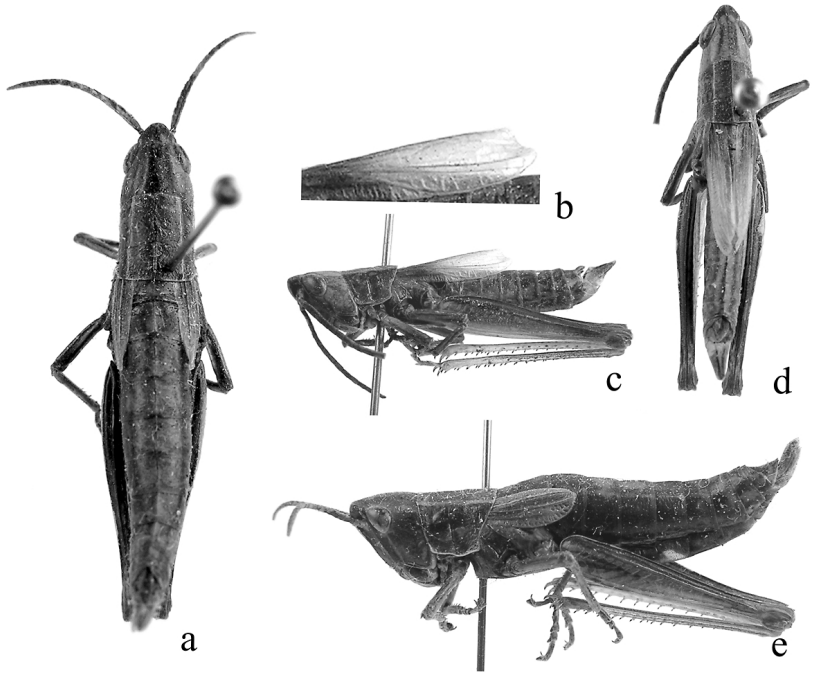

Fig. 2. Photographs of *C. xinjiangensis* sp. n. – a. Body of female, dorsal view. – b. Elytron of male, lateral view. – c. Body of male, lateral view. – d. Body of male, dorsal view. – e. Body of female, dorsal view.

shaped. Apex of lower kneelobe sharp and rounded. Hind tibia with 15–16 spines on outer side and 14 spines on inner side, without outer apical spine, first segment of hind tarsus distinctly longer than third segment. Arolium wide, slightly surpassing apex of claws. Tympanal organ present, oblong, oval. Terminal tergum of abdomen deeply incised and divided medially. Hind margin of tergum of periproct with concave near the base, without cauda (Fig. 3b). Epiproct triangular, basal part with median longitudinal groove. Cercus long, conical, 2.7 times as long as its basal part, apex extending to apex of epiproct. Subgenital plate long and conical, slightly narrowed toward apex. Epiphallus bridge-shaped (Fig. 3c); anchorae flexed, pointed; with two pairs of lophi; outer lophi large and bulging, inner lophi small, pointedly trapezoidal; anterior projection bulging, apex rounded; phallic complex is very similar to that of C. brachypterus as illustrated in Fig. 3a.

Female (Fig. 2a, e). Body more robust than that of male, medium size. Frontal ridge with longitudinal shallow groove; lateral margins of frontal ridge nearly parallel before median ocellus and gradually widened bellow median ocellus. Antennae sharply ensiform, not reaching posterior margin of pronotum, basal segment slightly widened, middle segments about 1.3 times as long as wide. Eyes small, longitudinal diameter slightly shorter than subocular furrow. Prozona of pronotum about 1.4 times longer than metazona. Mesosternal interspace 1.1 times as long as wide. Elytra squamiform, widely separated in dorsal view, apex acute, reaching or slightly extending beyond second abdominal tergum; medial area without intercalary vein, its width slightly larger than cubital area's. Hind wings absent. Apex of lower kneelobe sharp, basal part of femoral stridulatory file not forming double lines. Hind tibia with 13 spines on outer side, without outer apical spine. Abdominal terga with median longitudinal carina. Cercus short, twice as long as wide, extending not to apex of epiproct. Ovipositor slender, its apical parts acute, outer margins of dorsal valves and ventral valves with fine denticles, upper margins of dorsal valves without concave. Posterior margin of subgenital plate with angularly projection in middle part.

Coloration. Male. Body olive green. Antennae green-brown. Vertex with dark stripe running from eyes to joint between vertex and lateral carinae of pronotum. Elytra brown-green at basal half, rest green-yellow. Hind femur dark, olive

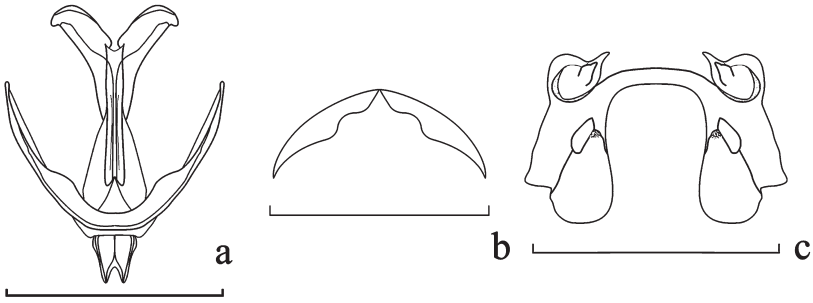

Fig. 3. Genitalia and tergum of periproct of *C.* xinjiangensis sp. n., male. – a. Phallic complex, dorsal view. – b. Tergum of periproct, dorsal view. – c. Epiphallus, dorsal view. Scale bars 1 mm.

green on outer side, genicular lobe dark, yellow-brown. Hind tibia green basally. Subgenital plate yellow-brown.

Female. Precostal area of elytra with black-brown line; otherwise coloration as male.

Measurement. Body: male 12.1–14.4 mm, female 23.0–25.9 mm; pronotum: male 3.0–3.1 mm, female 3.8–4.3 mm; elytron: male 5.8–7.0 mm, female 3.9–4.8 mm; hind femur: male 10.1–11 mm, female 12.2–14.1 mm.

Habitat. *C. xinjiangensis* sp. n. occurs in watershed landscapes of Guozigou Mountain Area, Huocheng county (1,100–1,400 m a.s.l.). Its habitats are dominated by grasses, predominantly *Aneurolepidium chinesis* (Trin.) Kitag. and *Potentilla bifurca* L. which cover up to 60% of the ground.

Etymology. The specific name is a noun in apposition, based on the type locality.

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