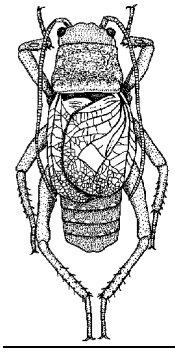

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# REVIEW OF THE GENUS *FURCILARNACA* GOROCHOV, 2004 (ORTHOPTERA: GRYLLACRIDIDAE, GRYLLACRIDINAE) FROM CHINA

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The review of the Chinese species of the genus *Furcilarnaca* Gorochov, 2004 is given. *F. wufengensis* Bian, Shi et Guo, **sp. n.** is described from the Wufeng (Hubei province, China). *F. superfurca* Gorochov, 2004 is firstly recorded from China (Yunnan province) and *F. huangi* Gorochov, 2004 is firstly found in the Guizhou and Guangxi provinces. A key to the species of *Furcilarnaca* from China is provided.

KEY WORDS: Orthoptera, Gryllacrididae, Gryllacridinae, *Furcilarnaca*, new species, new records, key, China.

**Ц. Бянь, Ф.-М. Ши, Л.-Я. Гоу. Обзор рода *Furcilarnaca* Gorochov, 2004 (Orthoptera: Gryllacrididae, Gryllacridinae) Китая // Дальневосточный энтомолог. 2013. N 268. С. 1-8.**

Приведен обзор китайских видов рода *Furcilarnaca* Gorochov, 2004. Описан новый для науки *F. wufengensis* Bian, Shi et Guo, **sp. n.** из Вуфенга (КНР: провинция Хубэй). Впервые для Китая (провинция Юньнань) указывается *F. superfurca* Gorochov, 2004, а *F. huangi* Gorochov, 2004 впервые приводится из провинций Гуйчжоу и Гуанси.

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## INTRODUCTION

Gorochov (2004) erected the genus *Furcilarnaca* and described four new species from Vietnam and China: *F. superfurca* Gorochov, 2004 (Vietnam), *F. belokobylskyi* Gorochov, 2004 (Vietnam), *F. beybienkoi* Gorochov, 2004 (China) and *F. huangi* Gorochov, 2004 (China). He (Gorochov, 2004) is also transferred three Chinese species of the genus *Metriogryllacris* Karny, 1937 (Bey-Bienko, 1957, 1962; Jin & Xia, 1994; Liu & Jin, 1994) to the genus *Furcilarnaca*, namely: *F. armata* (Bey-Bienko, 1957), *F. chirurga* (Bey-Bienko, 1962) and *F. forceps* (Bey-Bienko, 1962). Thus, the genus *Furcilarnaca* includes seven species, five of which are distributed in China.

Herein *F. wufengensis* **sp. n.** is described. *F. superfurca* is firstly recorded from China and *F. huangi* Gorochov, 2004 is firstly recorded from the Guizhou and Guangxi provinces. The distribution-map and a key to the species from China are provided. All materials studied including holotype and paratypes of new species are deposited in the Museum of Hebei University, China.

## METHODS

Morphological structures were examined and measured using Leica M205A stereomicroscope. Leica DFC 450 digital imaging system was used to obtain morphological images. The following abbreviations were used for the specimen measurements:

body w/wings – the distance from the apex of the fastigium verticis to the apex of the tegmina;

body w/o wings – in the male, the distance from the apex of fastigium verticis to the posterior margin of tenth tergite; in the female, the distance from the apex of the fastigium verticis to the apex of the epiproct;

tegmen – the distance from the base of tegmen to the apex;

postfemur – the distance from the base of postfemur to the apex of genicular lobe;

ovipositor – the distance from the base of seventh sternite to the apex of the ovipositor.

## TAXONOMY

### Family Gryllacrididae Blanchard, 1845
### Subfamily Gryllacridinae Blanchard, 1845

### Genus *Furcilarnaca* Gorochov, 2004

*Furicilarnaca* Gorochov, 2004: 907.

Type species: *Furicilarnaca superfurca* Gorochov, 2004, by original designation.

DIAGNOSIS. Body small. Fastigium verticis wider than scape. Eyes kidney-shaped, prominent; ocelli small, inconspicuous. Anterior margin of pronotum faintly prominent, posterior margin faintly straight, humeral sinus inconspicuous. Tegmina

and hind wings developed; *M* vein of tegmina simple, free, not united with *R* vein. Pro- and mesotibiae with 4 pairs of movable long spines and a pair of short apical spurs on ventral margins separately; mesotibiae with an inner upper apical spur on dorsal margin; postfemora with 2 rows of small spines on ventral margin; posttibiae with 2 rows of spines on dorsal margin and 4 pairs of apical spurs. Second and third tergites with stridulatory teeth on lateral margins. MALE: ninth tergite enlarged, strongly projecting backwards, centre of posterior margin with one or two pairs of small apical hooks or processes; tenth tergite narrow ribbon, centre of posterior margin with one pair of processes, which basal half swelling, apical half hook-shaped, pointing downwards or forwards, sometimes backwards; posterior margin of subgenital plate strongly concave in middle, the lateral lobes tapering, apices strongly sclerotized, acute; near basal area of subgenital plate with comparatively long and well developed styli; genitalia entirely membranous. FEMALE: seventh sternite semi-membranous, with numerous rugulae, near basal area with one central soft tubercle; posterior margin of subgenital plate strongly concave in middle; ovipositor straight, tapering, apex obtuse.

COMPOSITION. The genus includes eight species from Vietnam and China (Fig. 1).

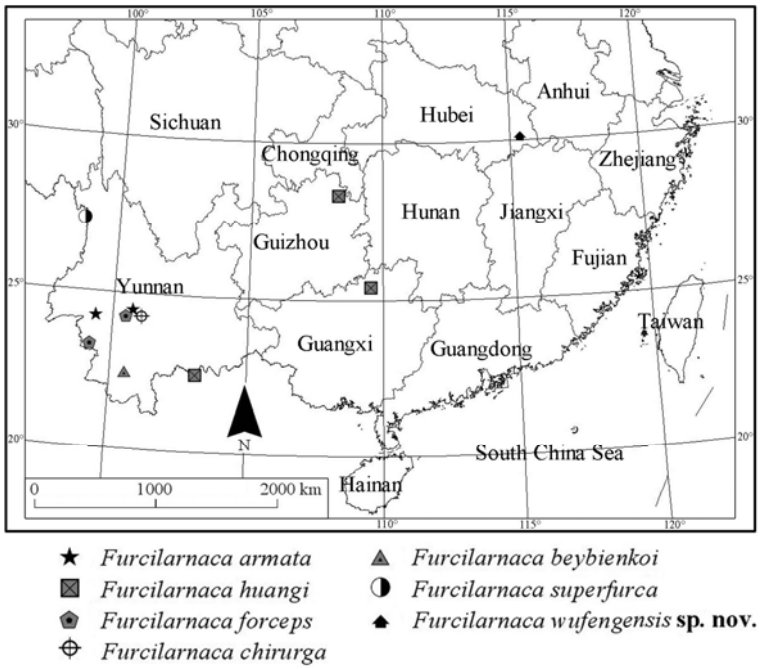



Fig. 1. Distribution of *Furcilarnaca* species in China.

## Key to the species of *Furcilarnaca* from China (males)

1 Apical half of lateral lobes of subgenital plate obviously curved upwards … ……...…….…. ***F. superfurca***
– Apical half of lateral lobes of subgenital plate curved inwards …….. 2
2 Posterior margin of ninth tergite obviously projecting backwards, the interspace between processes of ninth tergite broader …… 3
– Posterior margin of ninth tergite projecting backwards, the interspace between processes of ninth tergite narrower ……..……... 4
3 Ninth tergite with one pair of digitate apical processes ….…… ***F. beybienkoi***
– Ninth tergite with two pairs of processes ……..…… ***F. armata***
4 Subgenital plate longer than wide, its posterior margin with shallow concavity; the membranous area between lateral lobes almost absent ……...…. ***F. forceps***
– Subgenital plate slighty wider than long, its posterior margin with deeper concavity; lateral lobes sclerotized with distinct membranous area between them ..... 5
5 The base of lateral lobes of subgenital plate wider than its apex, membranous area reaching 1/3 of lateral lobes lenght ..... ***F. chirurga***
– The base of lateral lobes of subgenital plate as wide as its apical part, membranous area reaching mid of lateral lobes ..... 6
6 Processes of ninth tergite pointing downwards and forwards; processes of tenth tergite pointing downwards; posterior margin of subgenital plate with cup-shaped concavity, apices of lateral lobes of subgenital plate slightly curved downwards; styli shorter than lateral lobes ..... ***F. huangi***
– Processes of ninth tergite pointing downwards; processes of tenth tergite pointing inwards; posterior margin of subgenital plate with U-shaped concavity, apices of lateral lobes of subgenital plate slightly curved inwards; styli as long as lateral lobes ..... ***F. wufengensis* sp. n.**

## List of Chinese species with description of a new species

***Furcilarnaca armata* (Bey-Bienko, 1957)**

*Metriogryllacris armata*: Bey-Bienko, 1957: 402 (holotype – ♂, China: Yunnan province, Jingdong; in the Institute of Zoology, the Chinese Academy of Sciences, Beijing, China [IZAS]); Jin & Xia, 1994: 17; Liu & Jin, 1994: 100.

*Furcilarnaca armata*: Gorochov, 2004: 826, figs 72, 73.

MATERIAL EXAMINED. **China**: Yunnan province, Yongde, Daxueshan, 20 VII 2007, 1♂, coll. Rui-Lian Li.

DISTRIBUTION. China (Yunnan province).

***Furcilarnaca beybienkoi* Gorochov, 2004**

*Furcilarnaca beybienkoi* Gorochov, 2004: 829, figs 70, 71 (holotype – ♂, China: Yunnan province, Simao; in the Zoological Institute, Russian Academy of Sciences, St. Petersburg [ZIN]).

DISTRIBUTION. China (Yunnan province).

### *Furcilarnaca chirurga* (Bey-Bienko, 1962)

*Metriogryllacris chirurga* Bey-Bienko, 1962: 111 (holotype – ♂, China: Yunnan province, Jingping; in the Institute of Zoology, the Chinese Academy of Sciences, Beijing, China [IZAS]); Jin & Xia, 1994: 17; Liu & Jin, 1994; 100.
*Furcilarnaca chirurga*: Gorochov, 2004: 826, figs 66, 67.

DISTRIBUTION. China (Yunnan province).

### *Furcilarnaca forceps* (Bey-Bienko, 1962)

*Metriogryllacris forceps* Bey-Bienko, 1962: 113 (holotype – ♂, China: Yunnan province, Jingping; in the Institute of Zoology, the Chinese Academy of Sciences, Beijing, China [IZAS]); Jin & Xia, 1994: 17; Liu & Jin, 1994: 100.
*Furcilarnaca forceps*: Gorochov, 2004: 826.

MATERIAL EXAMINED. **China**: Yunnan province, Gengma, 6 VIII 2004, 1♂, coll. Ben-Yong Mao.
DISTRIBUTION. China (Yunnan Province).

### *Furcilarnaca huangi* Gorochov, 2004

*Furcilarnaca huangi* Gorochov, 2004: 828, figs 53, 68, 69, 85, 86 (holotype – ♂, China: Yunnan province, Jinpin; in the Zoological Institute, Russian Academy of Sciences, St. Petersburg [ZIN]).

MATERIAL EXAMINED. **China**: Guizhou province, Yanhe, 6 VI 2007, 5♂, 3 ♀, coll. Shao-Li Mao; Guangxi province, Longsheng, Huaping, 8 VI 2011, 1 ♂, 1♀, coll. Hao-Yu Liu.
DISTRIBUTION. China. Herein this species is firstly recorded from Guangxi and Guizhou provinces.

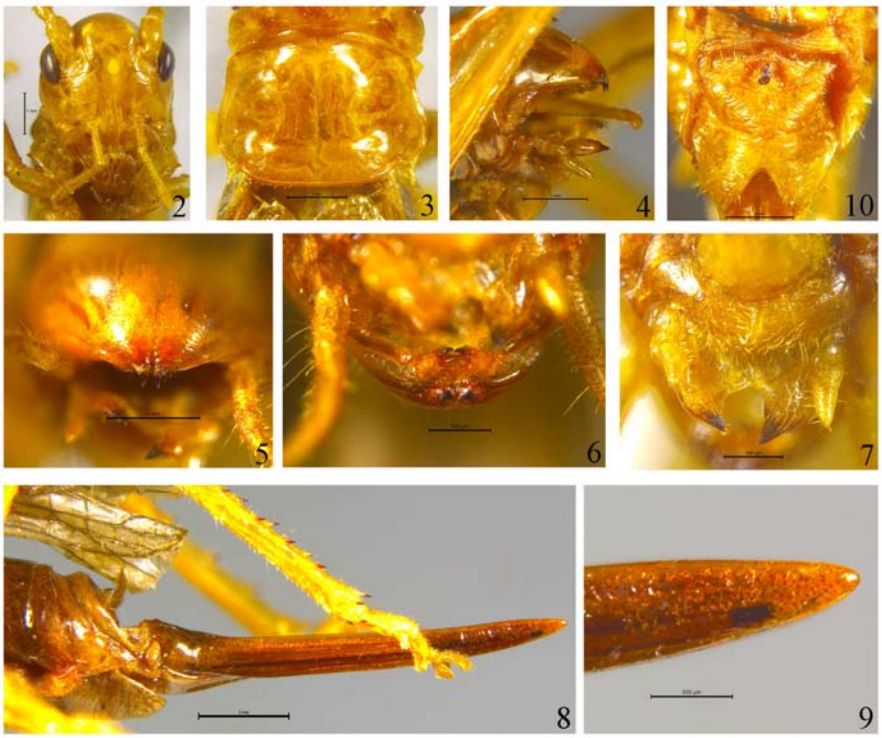
### *Furcilarnaca superfurca* Gorochov, 2004

*Furcilarnaca superfurca* Gorochov,2004: 826, figs 54, 62, 63, 83, 84 (holotype – ♂, Vietnam: Son La province, near Song Ma village: in the Zoological Institute, Russian Academy of Sciences, St. Petersburg [ZIN]).

MATERIAL EXAMINED**. China**: Yunnan province, Gaoligongshan, Baihualing, 1800–2400m, 28 V 2009, 1 ♂, coll. Zai-Hua Yang.
DISTRIBUTION**.** Vietnam, China (Yunnan province). Herein this species is firstly recorded from China.

### *Furcilarnaca wufengensis* Bian, Shi et Guo, sp. n.
Figs 2–10

MATERIAL EXAMINED. Holotype – ♂, **China**: Hubei province, Renheping, Wufeng, 600 m, 11 VI 2011, coll. Yang-Chun Wu. Paratypes: 3 ♀, the same locality and date, but collected by Jun-Yu Li.




Figs 2–10. *Furcilarnaca wufengensis* **sp. n.**, male (2–7) and female (8–11). 2 –head in frontal view; 3 – pronotum in dorsal view; 4–6 – apex of abdomen: 4 – in lateral view, 5 – in dorsal and slightly posterior view, 6 – in ventral and slightly posterior view; 7 – subgenital plate in ventral view; 8 – apex of abdomen in lateral view; 9 – apex of ovipositor in lateral view; 10 – subgenital plate in ventral view.

DESCRIPTION. MALE. Body medium sized for genus. Fastigium verticis nearly rounded, about 2 times as broad as scape. Eyes kidney-shaped, protruding outwards; ocelli small, inconspicuous. Anterior margin of pronotum faintly prominent, posterior margin almost straight; humeral sinus inconspicuous. Tegmina surpassing apices of postfemora; base of M vein not united with R vein. Hind wings slightly longer than tegmina. Procoxae with 1 small spine; pro- and mesotibiae with 4 pairs of movable long spines and one pair of apical spurs on ventral margins separately; mesotibiae with an inner apical spur on dorsal margin. Postfemora with 8–9 pairs of spines on ventral margin; posttibiae with 5 inner spines and 6 outer spines on dorsal margin, one pair of ventral spurs near apex, one pair of dorsal apical spurs and two pairs of ventral apical spurs. Posterior margin of ninth abdominal tergite projecting backwards, triangular, the centre with one pair of spine-shaped, compressed, pointing

downwards hooks, the subapices of hooks slightly pointing outwards, apices acute. Tenth tergite narrow, zonal, with one pair of processes in middle, which basal half swelling, apical half spine-shaped, compressed, pointing inwards. Cerci long, sub-cylindrical, apical half curved outwards. Subgenital plate short, basal half of lateral carinae sclerotized with narrow membranous area between them; posterior margin with nearly U-shaped concavity in the middle, the lateral lobes nearly triangular, the apical half narrowing and slightly curved inwards, apices entirely sclerotized and covered with dense hairs. Styli as long as the lateral lobes of subgenital plate, conical, inserted on both sides of middle area of subgenital plate.

FEMALE. Body slightly large, appearance is similar to male. Cerci slender, conical, apices acute. Seventh sternite semi-membranous, with numerous rugulae, centre of near basal area with central soft tubercle. Posterior margin of subgenital plate with nearly triangular concavity, lateral lobes almost triangular and lateral margin slightly longer than median margin, the apices of lateral lobes acute. Ovipositor long, almost straight, faintly tapering, dorsal and ventral margins smooth, apex narrowly rounded.

COLORATION. Body yellowish brown. Eyes brown, ocelli pale. Female occiput black. Veins on tegmina and hind wings dark brown, cells hyaline. Whole claws, tibiae spines and apical spurs black. Apices of processes of male ninth and tenth tergites black; apices of lateral lobes of subgenital plate black. Process of female seventh sternite black brown.

MEASUREMENTS. Length in mm: body w/wings: ♂ 17.0, ♀14.8–16.9; body w/o wings: ♂ 12.9, ♀13.7–14.2; tegmen: ♂ 11.5, ♀ 9.9–11.6; postfemur: ♂ 7.1, ♀ 7.7–7.7; ovipositor: 10.0–11.8.

DIAGNOSIS. The new species is very similar to *F. huangi* and *F. chirurga*, but differs from both by the apical half of processes of male tenth tergite pointing inwards, by subgenital plate short, by basal half of lateral carinae sclerotized with narrow membranous area between them, by posterior margin with nearly U-shaped concavity in middle, by the apical half of lateral lobes narrowing and slightly curved inwards and apices entirely sclerotized, and by styli as long as the lateral lobes. In *F. huangi* and *F. chirurga* the apical half of processes of male tenth tergite pointing downwards; in *F. chirurga* the male subgenital plate with a wider base of membranous area, the apices of lateral lobes inconspicuous incurved; in *F. huangi* the posterior margin of male subgenital plate of with cup-shaped concavity in middle, the apical half of lateral lobes slightly curved inwards, and styli shorter than lateral lobes.

DISTRIBUTION. China (Hubei province).

ETYMOLOGY. The name is derived from Wufeng, the type locality of the new species.

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