Zootaxa 3889 (2): 277–288
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3889.2.6
http://zoobank.org/urn:lsid:zoobank.org:pub:B1A5B72C-834C-4DF4-AA75-2E4CE1136730

Review of the species of the genus *Marthogryllacris* (Orthoptera, Gryllacrididae, Gryllacridinae)

MIAOMIAO LI [1, 2], YAN FANG[1], XIANWEI LIU [2, 3] & KAI LI[1, 3]

[1]*School of Life Science, East China Normal University, Shanghai 200241, China. Email: kaili@admin.ecnu.edu.cn*
[2]*Shanghai Entomology Museum, Chinese Academy of Sciences, Shanghai 200032, China. E-mail: liuxianwei2008@163.com*
[3]*Corresponding author*

Abstract

A review of the genus *Marthogryllacris* Karny, 1937 was presented. The genus *Borneogryllacris* should be regarded as a subgenus of *Marthogryllacris.* Five new species were described: *M.* (*M.*) *rufonotata* **sp. nov.**, *M.* (*B.*) *nanlingensis* **sp. nov.**, *M.* (*B.*) *bimaculata* **sp. nov.**, *M.* (*B.*) *spinosa* **sp. nov.** and *M.* (*B.*) *elongata* **sp. nov.**. A key to the species of *Marthogryllacris* and the distributional data were provided.

Key words: Gryllacrididae, Gryllacridinae, *Marthogryllacris*, *Borneogryllacris*, new species

Introduction

The genera *Marthogryllacris* and *Borneogryllacris* were proposed by Karny in 1937 with the type species *Gryllacris martha* Griffini, 1914 and *Gryllacris borneoensis* De Haan, 1842, respectively. Liu *et al.* (2010) thought that the characteristics of *Marthogryllacris* were similar to *Borneogryllacris*, except for fastigium of vertex with distinct lateral carinae. Therefore, they believed these two genera should be regarded as two subgenera of the genus *Marthogryllacris*. However, they did not agree with Gorochov (2003) that *Capnogryllacris* is the synonym of *Borneogryllacris* because of their obvious distinction in median ocellus and prosseses in subgenital plate.

Up to now, there are three species of *Marthogryllacris* and six species of *Borneogryllacris* in China. In this paper, five new species are identified and described under the name of *M.* (*M.*) *rufonotata* Li, Liu *et* Li **sp. nov.**, *M.* (*B.*) *nanlingensis* Li, Liu *et* Li **sp. nov.**, *M.* (*B.*) *bimaculata* Li, Liu *et* Li **sp. nov.**, *M.* (*B.*) *spinosa* Li, Liu *et* Li **sp. nov.**, *M.* (*B.*) *elongata* Li, Liu *et* Li **sp. nov.**. All type specimens are deposited in the Shanghai Entomology Museum, the Chinese Academy of Sciences, Shanghai, China.

Marthogryllacris Karny, 1937

Gryllacris (group of *martha*) Karny, 1929. *Proc. 4th. Pacif. Sci. Congr.*, 161, Fig 3.
Gryllacris (group of *borneoensis*) Karny, 1929. *Proc. 4th. Pacif. Sci. Congr.*, 162.
Marthogryllacris Karny, 1937. *Genera Insectorum*, 206: 104.
Borneogryllacris Karny, 1937. *Genera Insectorum*, 206: 105; Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Liu, 1999. *Fauna of Insect Fujian province of China*, 1: 175; Otte, 2002. *Orthoptera species file*, 8: 6.
Marthogryllacris (*Marthogryllacris*) & *Marthogryllacris* (*Borneogryllacris*) Liu *et al*., 2010. *Insects of Fengyangshan National Nature Reserve*, 58–59.

Type species. *Gryllacris martha* Griffini, 1914.

Generic diagnosis. Body medium or large sized of the subfamily, stout. Median ocellus almost as large as lateral ocelli. Tegmina and wings well-developed. M vein of tegmina not united with CuA vein. Mid tibia without interno-apical spur. Male 9th abdominal tergite divided into 2 lobes, with acute apical spines, processes of male subgenital plate longer than or as long as subgenital plate.

Accepted by D. Rentz: 30 Oct. 2014; published: 1 Dec. 2014

Key to subgenus of the genus *Marthogryllacris*

1. Fastigium of vertex with distinct lateral carinae . . . . . *M.* (*Marthogryllacris*) Karny, 1937
- Fastigium of vertex without distinct lateral carinae . . . . . *M.* (*Borneogryllacris*) Karny, 1937

Marthogryllacris (*Marthogryllacris*) Karny, 1937

Gryllacris (group of *martha*) Karny, 1929. *Proc. 4th. Pacif. Sci. Congr.*, 161, Fig 3.
Marthogryllacris Karny, 1937. *Genera Insectorum*, 206: 104. Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Otte, 2002. *Orthoptera species file*, 8: 6.
Marthogryllacris (*Marthogryllacris*) Liu *et al*., 2010. *Insects of Fengyangshan National Nature Reserve*, 58.

Type species. *Gryllacris martha* Griffini, 1914.

Diagnosis. Body medium sized or large of the subfamily, stout. Fastigium of vertex long-ovate, with lateral carinae, frons smooth, eyes long-oval, prominent. Fore margin of pronotum more or less projected, hind margin straight. Tegmina rather exceeding the apex of abdomen, half-transparent, base of M not united with R. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 5 pairs of spurs on ventral surface, but mid tibia without intero-apical spur. Hind femur with spines ventrally, each margin of hind tibia with 6–7 spines on dorsal surface. Male 9th abdominal tergite split into 2 lobes. Processes of subgenital plate long, almost as long as or long than subgenital plate. Ovipositor straight, with subacute apex.

Key to species of the subgenus *Marthogryllacris*

1. Genae and pronotum reddish brown . . . . . ***M.* (*M.*) *rufonotata* Li, Liu, Li sp. nov.**
- Genae blackish; pronotum with blackish transverse band 2
2. V-shaped transverse band of pronotum blackish; tegmina 28–34mm long. . . . . ***M.* (*M.*) *martha* (Grifini, 1914)**
- V-shaped transverse band of pronotum darkish; tegmina 39–43mm long . . . . . ***M.* (*M.*) *borealis* (Gorochov, 2003)**

1. *Marthogryllacris* (*Marthogryllacris*) *rufonotata* Li, Liu *et* Li sp. nov.

(Figs. 1–4)

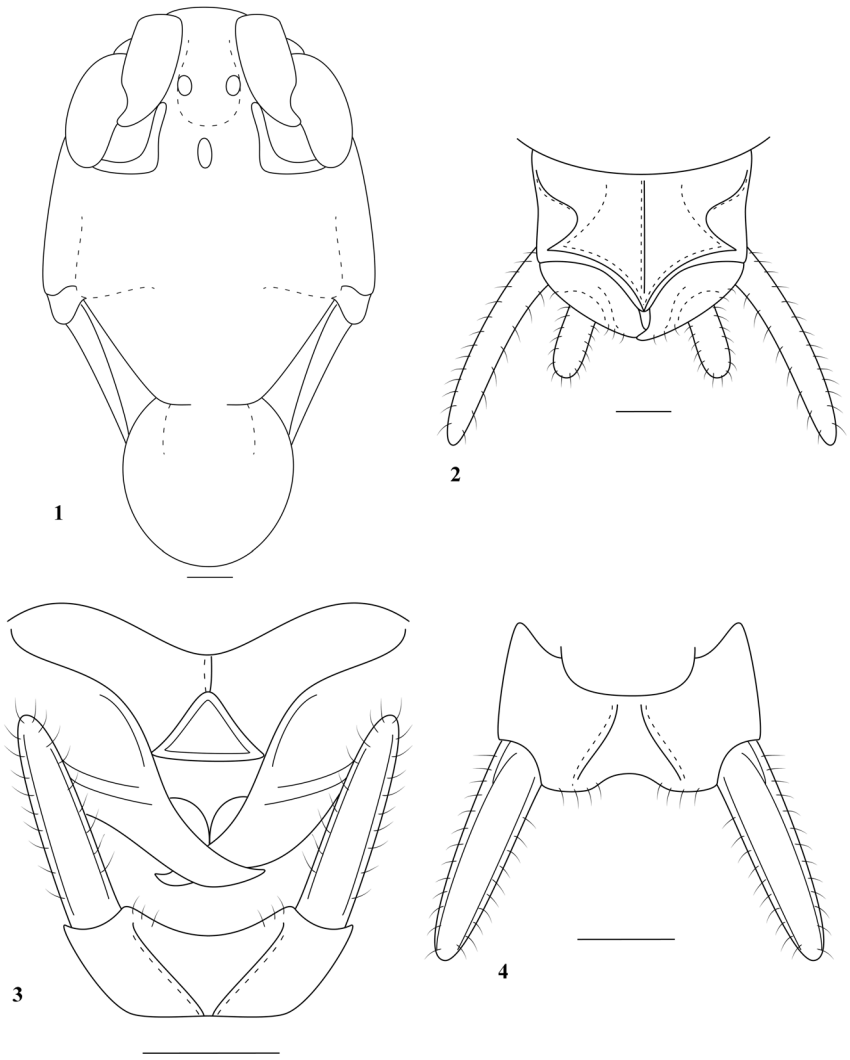
Description. Male. Body moderately large, stout. Fastigium of vertex truncate, about 1.5 times as wide as scape, with lateral carinae (Fig. 1); frons with distinctly setae; eyes long-oval, prominent. Fore margin of pronotum more or less projected, hind margin straight. Tegmina rather exceeding beyond the apex of abdomen, R of the left tegmen with 6 branches at apex; Rs occurred after the middle of R, apex of Rs with 2 branches; M united with CuA, also with 2 branches. Rs of right tegmen occurred before the middle of R; M independent, simple; A 4, the last of them united at base. Wings slightly extending beyond tegmina. Fore and mid tibiae with 5 pairs of spurs, but mid tibia without intero-apical spur. Hind femur armed 13–16 internal spines and 10–11 external spines on ventral surface, hind tibia dorsally bearing 6 internal spines and 6–7 external spines. Posterior margin of 8th abdominal tergite protruded in the middle, with 3 longitudinal keels; 9th abdominal tergite split in two acute lobes (Fig. 2). Subgenital plate short, posterior margin slightly concave, with 2 gradually diverged keels. Styli much longer than subgenital plate, slightly flattened (Fig. 3–4).

Female. Unknown.

Coloration. Body reddish brown, but with blackish eyes and maxillary palpus. Tegmina pale infuscate, transverse venations darkish; wings transparent, but with darkish stripes along the transverse venations, spines of hind femur and tibia darkish brown.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	26.0	8.0	37.0	20.0	/



FIGURES 1–4. *Marthogryllacris* (*Marthogryllacris*) *rufonotata* Li, Liu, Li sp. nov. 1. head of male, frontal view; 2. end of male abdomen, dorsal view; 3. end of male abdomen, caudal view; 4. subgenital plate of male, ventral view; scale bars=1 mm.

Material. Holotype ♂, Wangtian Tree, Mengla, Yunnan, China, Alt. 600m, 2009.VI.4–6, collected by Liu Xian-Wei *et al.*.

Distribution. China (Yunnan).

Diagnosis. This species differs from other species of the genus in the reddish brown head and pronotum, as well as the structure of the abdomen.

2. *Marthogryllacris* (*Marthogryllacris*) *martha* (Griffini, 1914)

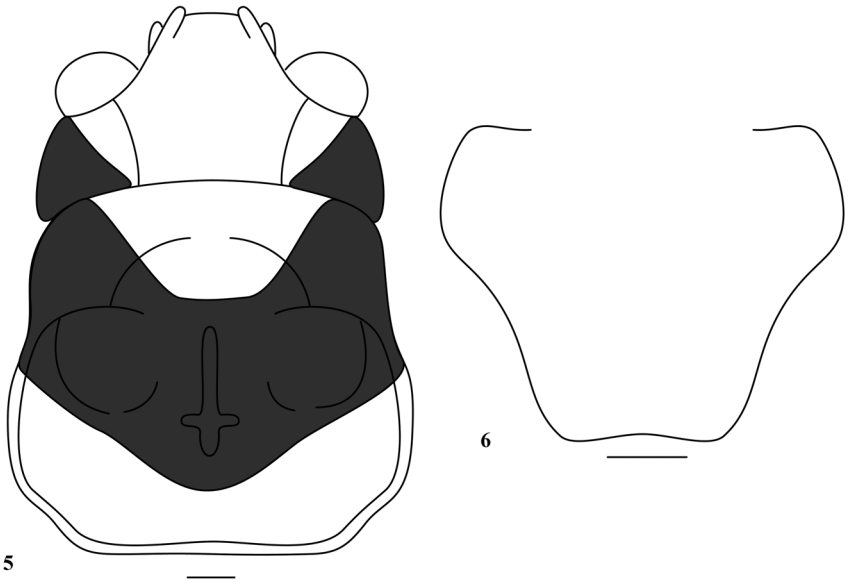
(Figs. 5–6)

Gryllacris martha Griffini, 1914. *Ann. Mus. Nat. Hung.*, 12: 252–259; Karny, 1928. *ibidem*, 25: 221–222, Fig. 2; Karny, 1935. *Eos*., 10: 340.

Marthogryllacris martha Karny, 1937. *Genera Insectorum*, 206: 105. Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Otte, 2002. *Orthoptera species file*, 8: 6.

Capnogryllacris erythrocephala Gorochov, 2003. *Ent. Obozr.*, 82(3): 636.

Marthogryllacris (*Marthogryllacris*) *martha* Liu *et al*., 2010. *Insects of Fengyangshan National Nature Reserve*, 58.



FIGURES 5–6. *Marthogryllacris* (*Marthogryllacris*) *martha* (Griffini, 1914). 5. head of female, dorsal view; 6. subgenital plate of female, ventral view; scale bars=1mm.

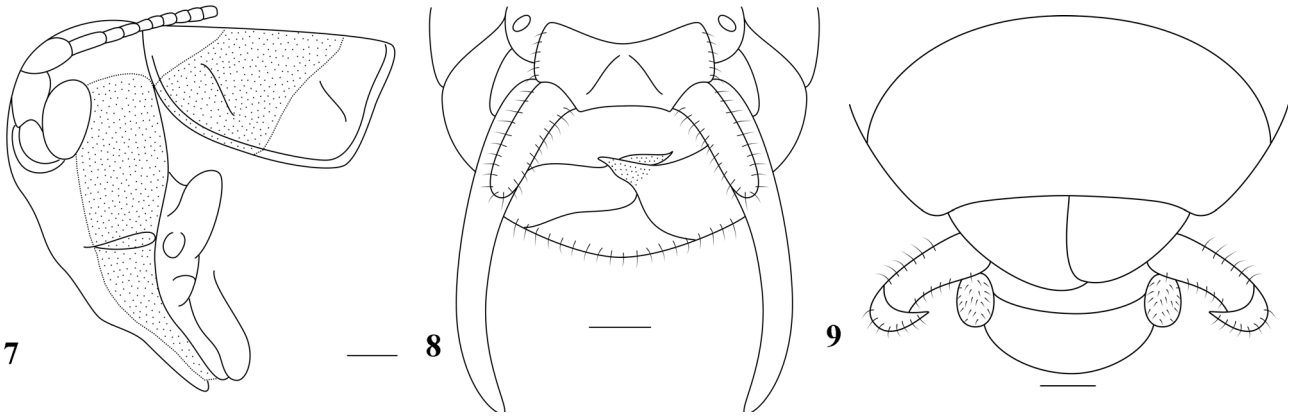
Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	22.0–28.0	5.9–6.8	28.0–32.0	15.0–17.0	/
♀	27.0–34.0	6.9–8.0	30.0–34.0	16.0–21.0	20.0–23.0

Material. 1♀, Mt. Bavi, Tonkin, Vietnam, Alt. 800–1000m, 1941.VII, collected by Cooman.
Distribution. Vietnam; Laos.

3. *Marthogryllacris* (*Marthogryllacris*) *borealis* (Gorochov, 2003)
(Figs. 7–9)

Capnogryllacris erythrocephala borealis Gorochov, 2003. *Ent. Obozr.*, 82(3): 636.
Marthogryllacris (*Marthogryllacris*) *borealis* Liu *et al*., 2010. *Insects of Fengyangshan National Nature Reserve*, 58.



FIGURES 7–9. *Marthogryllacris* (*Marthogryllacris*) *borealis* (Gorochov, 2003). 7. head and pronotum of male, lateral view; 8. end of male abdomen, ventral view; 9. end of male abdomen, caudal view; scale bars=1mm.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	28.0–34.0	8.5–9.0	39.0–43.0	21.0–24.0	/

Material. 1♂, Mengla, Jinping, Yunnan, China, Alt. 850m, 2009.V.26, collected by Liu Xian-Wei *et al.*.
Distribution. China (Yunnan).

Marthogryllacris (*Borneogryllacris*) Karny, 1937

Gryllacris (group of *borneoensis*) Karny, 1929. *Proc. 4th. Pacif. Sci. Congr.*, 162.
Borneogryllacris Karny, 1937. *Genera Insectorum*, 206: 105; Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Liu, 1999. *Fauna of Insect Fujian province of China*, 1: 175; Otte, 2002. *Orthoptera species file*, 8: 6.
Marthogryllacris (*Borneogryllacris*) Liu *et al*., 2010. *Insects of Fengyangshan National Nature Reserve*, 58.

Type species. *Gryllacris borneoensis* De Haan, 1842.

Diagnosis. Body medium sized or large of the subfamily, stout. Fastigium of vertex long-ovate, without lateral carinae, frons smooth; eyes long-oval, prominent; mandible well-developed. Fore margin of pronotum more or less projected, hind margin straight. Tegmina rather exceeding the apex of abdomen, half-transparent, base of M not united with R. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 5 pairs of spurs on ventral surface, but mid tibia without intero-apical spur. Hind femur with spines ventrally, hind tibia with 6–7 spines each margin on dorsal surface. Male 9th abdominal tergite split into two lobes. Processes of subgenital plate long, almost as long as or longer than subgenital plate. Ovipositor straight, with subacute apex.

Key to species of the subgenus *Borneogryllacris*

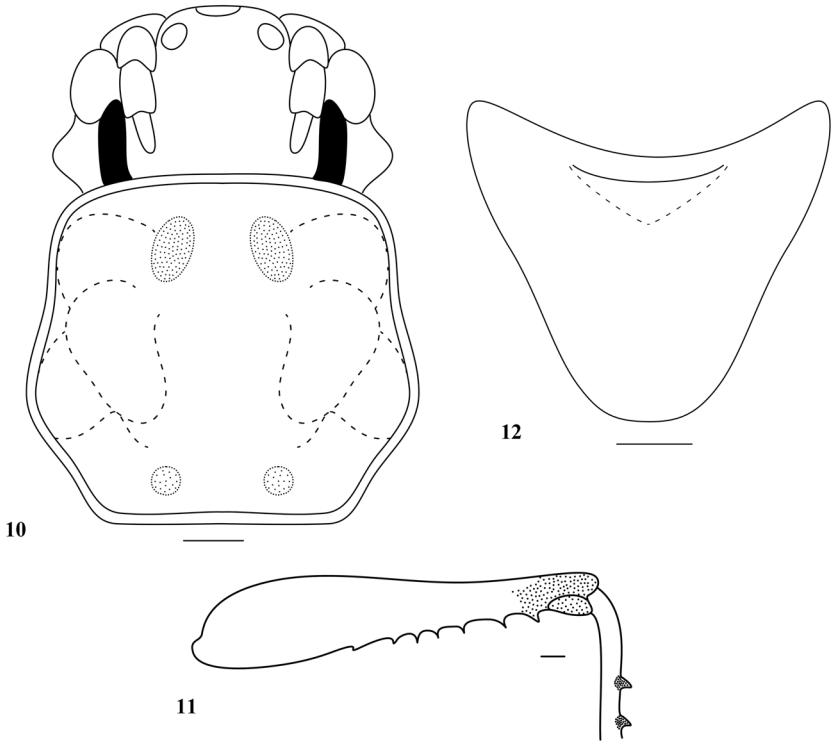
1. Apex of all femora black 2
- Apex of all femora not black 4
2. Pronotum with distinctly black margins 3
- Pronotum with 2 black spots in the front part only . . . . . ***M.* (*B.*) *bimaculata* Li, Liu, Li sp. nov.**
3. Occiput and genae pale . . . . . ***M.* (*B.*) *nigromarginata* (Karny, 1928)**
- Occiput and genae blackish . . . . . ***M.* (*B.*) *nanlingensis* Li, Liu, Li sp. nov.**
4. Occiput and genae darkish . . . . . ***M.* (*B.*) *melanocrania* (Karny, 1929)**
- Occiput and genae yellowish 5
5. Antennae yellowish; wings not infuscate; 9th abdominal tergite of male with lobes spine-like . . . . . ***M.* (*B.*) *spinosa* Li, Liu, Li sp. nov.**
- Antennae blackish; Wings infuscate; 9th abdominal tergite of male with lobes sickle-like ***M.* (*B.*) *elongata* Li, Liu, Li sp. nov.**

4. *Marthogryllacris (Borneogryllacris) bimaculata* Li, Liu *et* Li sp. nov.
(Figs. 10–12)

Description. Female. Body large, stout. Fastigium of vertex long-ovate, about 1.5 times as wide as scape, frons smooth; eyes long-oval, prominent; middle ocellus large, rounded. Fore margin of pronotum more or less projected, hind margin straight. Tegmina half-transparent, exceeded the apex of abdomen; R with 4 branches at apex, not united with M at base; Rs occurred after the middle of R, with 2 branches, CuA with a short oblique connecting with M. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 5 pairs of spurs, mid tibia without intero-apical spur. Hind femur armed 7 spines on each side ventrally, hind tibia with 6–7 internal spines and external spines on dorsal surface. Subgenital plate almost triangular, with rounded apex (Fig. 12). Ovipositor straight, slightly longer than hind femur, apex subacute.

Male. Unknown.

Coloration. Body yellowish brown, ocelli pale yellow, behind eyes with a short black stripe. Pronotum with 2 black spots in the front part (Fig. 10). Venations of tegmina paler than membranes. All femora with blackish apex (Fig. 11), spurs and spines of legs brownish.



FIGURES 10–12. *Marthogryllacris (Borneogryllacris) bimaculata* Li, Liu, Li sp. nov. 10. head and pronotum of female, dorsal view; 11. hind femur of female, lateral view; 12. subgenital plate of female, ventral view; scale bars=1mm.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♀	39.0	8.0	36.5	21.0	26.0

Material. Holotype ♀, Jinuo, Yunnan, China, 1991.VIII.8, collected by Liu Zu-Yao *et al*..

Distribution. China (Yunnan).

Diagnosis. This species is very similar to *M.* (*B.*) *nigromarginata* (Karny, 1928), but differs from the latter in stripes of pronotum.

5. *Marthogryllacris* (*Borneogryllacris*) *nigromarginata* (Karny, 1928)

(Figs. 13–16)

Gryllacris nigromarginata Karny, 1928. *Ent. Zeit.*, 89: 271–274; Wu, C.F. 1935. *Catalogus Insectorum Sinensium*, 1: 80.
Borneogryllacris nigromarginata Karny, 1937. *Genera Insectorum*, 206: 107; Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Liu, 1999. *Fauna of Insect Fujian province of China*, 1: 175; Otte, 2002. *Orthoptera species file*, 8: 6.
Marthogryllacris (*Borneogryllacris*) *nigromarginata* Liu *et al.*, 2010. Insects of Fengyangshan National Nature Reserve: 59.

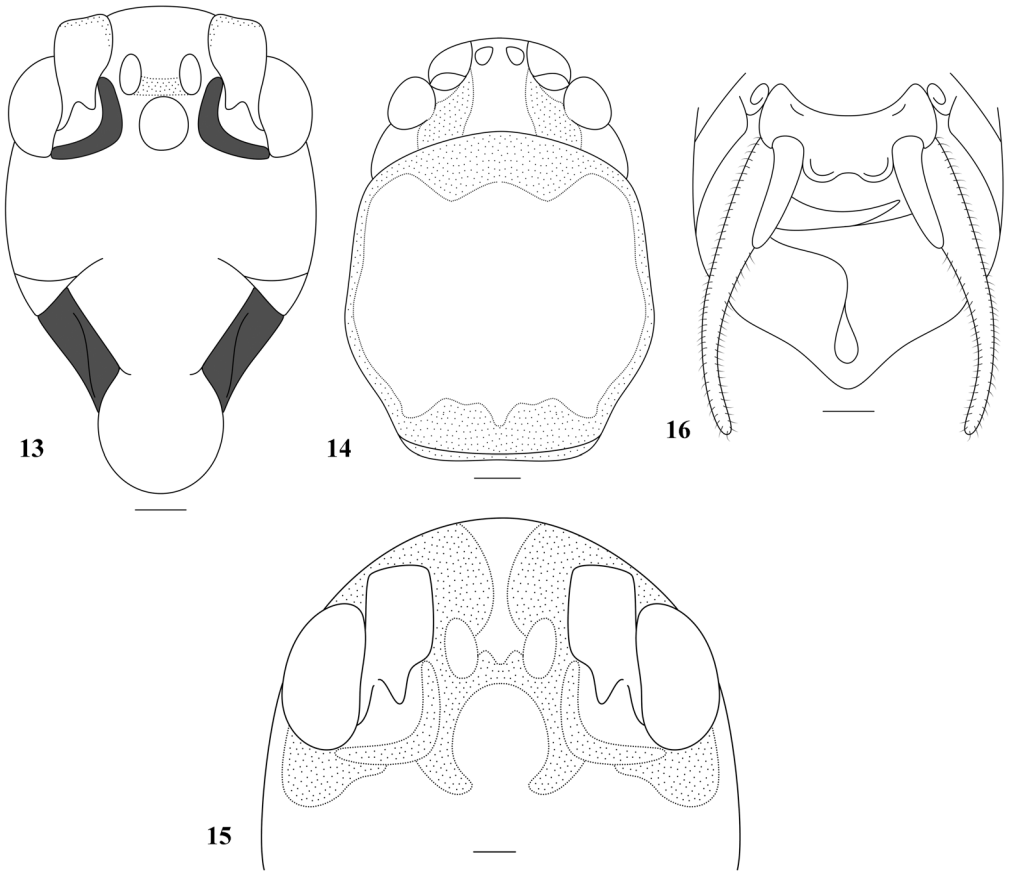
Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	22.2–28.0	6.1–7.0	29.5–31.1	16.5–18.0	/
♀	31.0	7.0	33.2	16.3	17.5

Material. 1♂, Tianping Mountain, Longsheng, Guangxi, China, 1982.VI.23, collector unkown; 1♂, Liluo, Longsheng, Guangxi, China, Alt. 1000m, 1984.VI.20, collected by Li Jun; 1♀, Nankun Mountain, Longmen, Guangdong, China, 1987.VI.9–14, collected by Zhang Gao-Zi; 1♀, Wuyanling, Zhejiang, China, Alt. 800m, 2005, collected by Wang Yi-Ping; 2♂♂, Leigongshan, Guizhou, China, Alt. 1000–1100m, 2005.VI.2–3, collected by

Song Qiong-Zhang; 1♀, Fengyangshan, Longquan, Zhejiang, China, 2007.VII.27, collected by Fu Qiang; 1♀, Limushan, Hainan, China, Alt. 900m, 2008.V.27, collected by Fu Qiang; 1♂, Jianfengling, Hainan, China, Alt. 1000m, 2011.IV.11–22, collected by Bi Wen-Xuan; 1♂, Diaoluoshan, Lingshui, Hainan, China, 2011.IX.16–18, collected by Liu Xian-Wei; 1♂, Maoer Mountain, Xing'an, Guangxi, China, Alt. 800–1100m, 2012.VII.23–24, collected by Bi Wen-Xuan; 1♀, Maoer Mountain, Xing'an, Guangxi, China, Alt. 500–1100m, 2013.VII.30–VIII.6, collected by Liu Xian-Wei *et al*..

Distribution. China (Zhejiang, Hainan, Guangdong, Guangxi, Guizhou).



FIGURES 13–16. *Marthogryllacris (Borneogryllacris) nigromarginata* (Karny, 1928). 13. head of male, frontal view; 14. head and pronotum of male, dorsal view; 15. frons of male, frontal view; 16. end of male abdomen, ventral view; scale bars=1 mm.

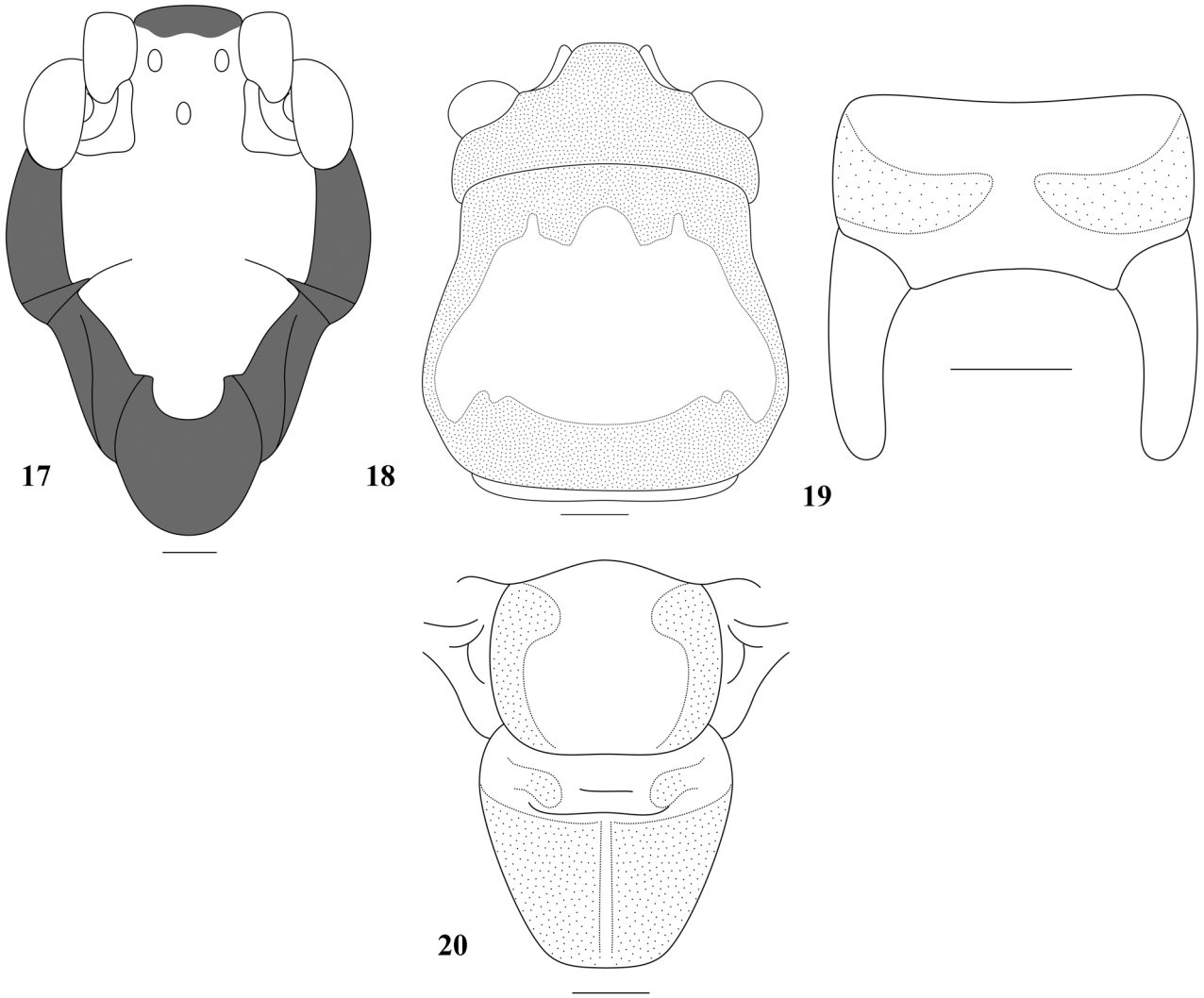
6. *Marthogryllacris (Borneogryllacris) nanlingensis* Li, Liu *et* Li sp. nov.
(Figs. 17–20)

Description. Male. Body smaller than female. Fastigium of vertex long-ovate, about 2 times as wide as scape, Frons smooth, with pale lateral carinae; eyes long-oval, prominent. Fore margin of pronotum projected, hind margin straight. Tegmina rather extending beyond the apex of abdomen, half-transparent; R with 3 branches at apex; Rs occurred before the middle of R, with 2 branches; CuA with 2 branches. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 4 pairs of spurs, mid tibia without intero-apical spur. Hind femur armed 1–2 internal spines and 5 external spines on ventral surface; hind tibia with 6 spines on each side of dorsal surface. 9th abdominal tergite split into two long and broad lobes; subgenital plate short, broader than long, posterior margin nearly truncate (Fig. 19). Styli slightly longer than subgenital plate, cylindrical.

Female. R of tegmina with 4 branches at apex; Rs occurred at the middle of R, with 3 branches; M united with R on base; CuA with 3 branches, CuP furcation, the upper branch connecting with CuA, A with 4. Wings not reaching to tegmina. Hind femur armed 6–7 internal spines and 6 external spines on ventral surface; hind tibia with

6–7 spines on each side of dorsal surface. Subgenital plate slightly narrowed and with apex roundly truncated (Fig. 20).

Coloration. Body pale yellowish brown, occiput, apex of labrum, mandible and segments of antenna at base blackish. Venation of wings darkened. Apex of all femora, spurs and spines of hind femur black. Each side of all abdominal tergites with a blackish longitudinal stripe.



FIGURES 17–20. *Marthogryllacris (Borneogryllacris) nanlingensis* Li, Liu, Li sp. nov. 17. Head of male, frontal view; 18. head and pronotum of male, dorsal view; 19. subgenital of male, ventral view; 20. 7th abdominal sternum and subgenital plate of female, ventral view; scale bars=1mm.

Material. Holotype ♂, Nanling, Guangdong, China, Alt. 1000m, 2008.VII.6, collected by Huang Bao-Ping & Yan Ying; paratype 1♀, Nanling, Guangdong, China, Alt. 1000m, 2007.VI.20, collected by Huang Hao.

Measurements. (length in mm)

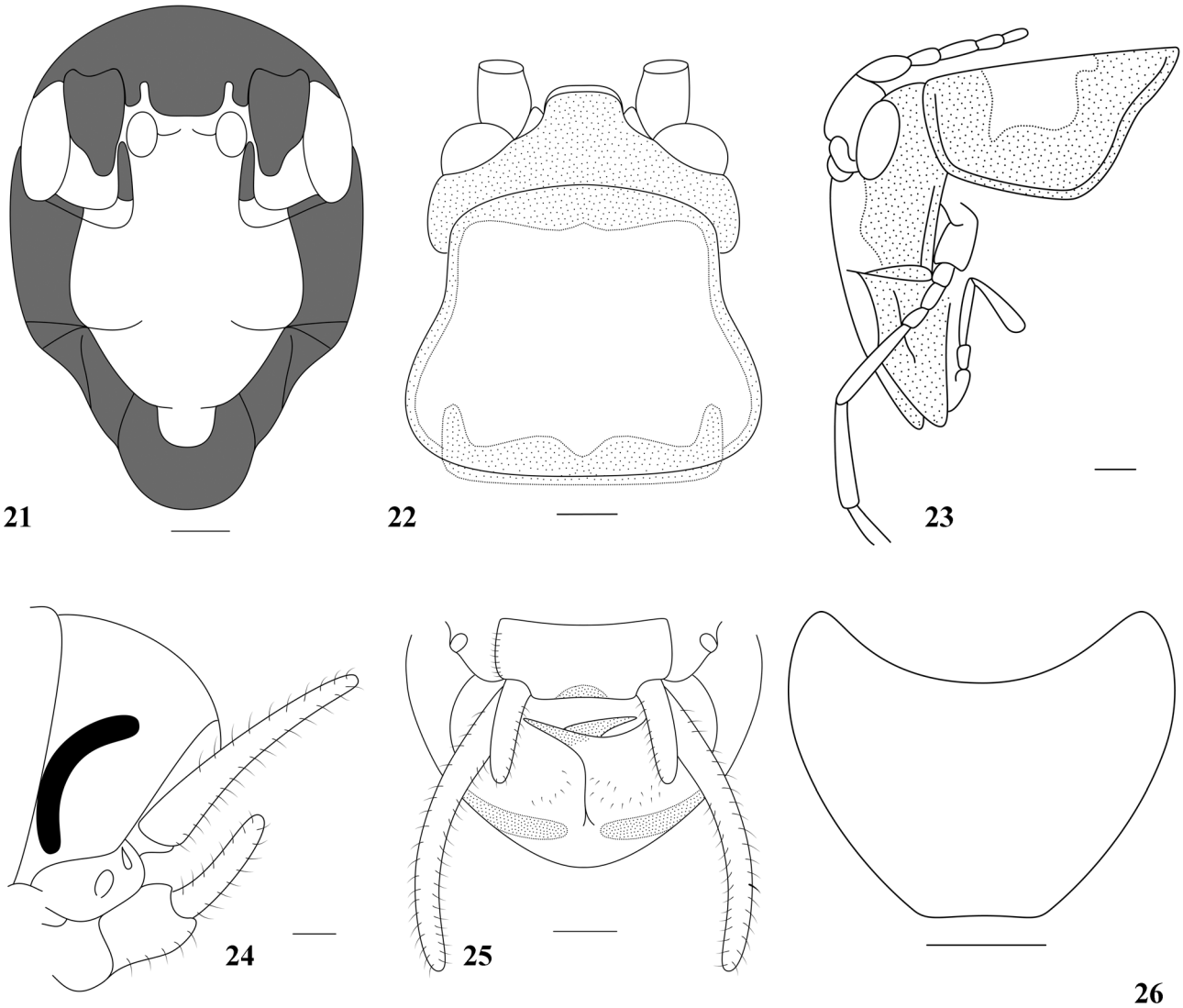
	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	20.0	6.0	25.5	10.5	/
♀	34.0	6.0	26.0	18.0	20.0

Distribution. China (Guangdong).

Diagnosis. This new species resembles to *M.* (*B.*) *nigromarginata* (Karny, 1928), but differs from the latter in: the occiput and genae blackish.

7. *Marthogryllacris (Borneogryllacris) melanocrania* (Karny, 1929)
(Figs. 21–26)

Gryllacris melanocrania Karny, 1929. *Ann. Ent. Soc. Amer.* 22: 177.
Borneogryllacris melanocrania Karny, 1937. *Genera Insectorum*, 206: 106; Jin & Xia, 1994. *J. Orth. Res.*, 3: 16; Liu, 1999. *Fauna of Insect Fujian province of China*, 1: 175; Otte, 2002. *Orthoptera species file*, 8: 6.
Marthogryllacris (*Borneogryllacris*) *melanocrania* Liu *et al*., 2010. Insects of Fengyangshan National Nature Reserve: 59.



FIGURES 21–26. *Marthogryllacris (Borneogryllacris) melanocrania* (Karny, 1929) 21. head of male, frontal view; 22. head and pronotum of male, dorsal view; 23. head and pronotum of male, lateral view; 24. end of male abdomen, lateral view; 25. end of male abdomen, ventral view; 26. subgenital of female, ventral view; scale bars=1mm.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	24.5	6.5	29.0	17.0	/
♀	25.0–27.0	6.5–7.3	23.0–30.0	16.0–19.5	20.0–25.0

Material. 1♂, Wuyanling, Taishun, Zhejiang, China, Alt. 800m, 2005, collected by Wang Yi-Ping; 1♀, Fengyangshan, Longquan, Zhejiang, China, Alt. 1200m, 2005.VIII.1–3, collector unknown; 1♂, Guihecun, Meihuashan, Fujian, China, Alt. 1200m, 2007.VI.1, collected by Huang Hao; 1♀, Baishanzu, Qinyuan, Zhejiang, China, Alt. 1000m, 2007.VII.20–23, collected by Xu Zhi-Zhou; 1♂, Xitanmu Mountain, Zhejiang, China, Alt.

800m, 2008.VI.8, collected by Bi Wen-Xuan; 1♂, Qingliangfeng, Lin'an, Zhejiang, China, Alt. 1100m, 2008.VIII.5–7, collected by Liu Xian-Wei and Bi Wen-Xuan; 1♂, Qingliangfeng, Lin'an, Zhejiang, China, Alt. 950m, 2009.VII.14, collected by Yin Zi-Wei and Zhong Ting; 1♂, Mangdangshan, Nanping, Fujian, China, Alt. 800m, 2009.VII.18, collected by Tang Xiao-Bing; 1♂, Maoer Mountain, Xing'an, China, 2009.VIII.10, collected by Huang Bao-Ping and Yan ying; 1♂, Maoer Mountain, Xing'an, China, 2012.VII.23–24, collected by Bi Wen-Xuan; 2♂♂3♀♀, Maoer Mountain, Xing'an, China, Alt. 500-1100m, 2013.VII.30–VIII.6, collected by Liu Xian-Wei *et al*..

Distribution. China (Jiangsu, Zhejiang, Fujian, Guangxi).

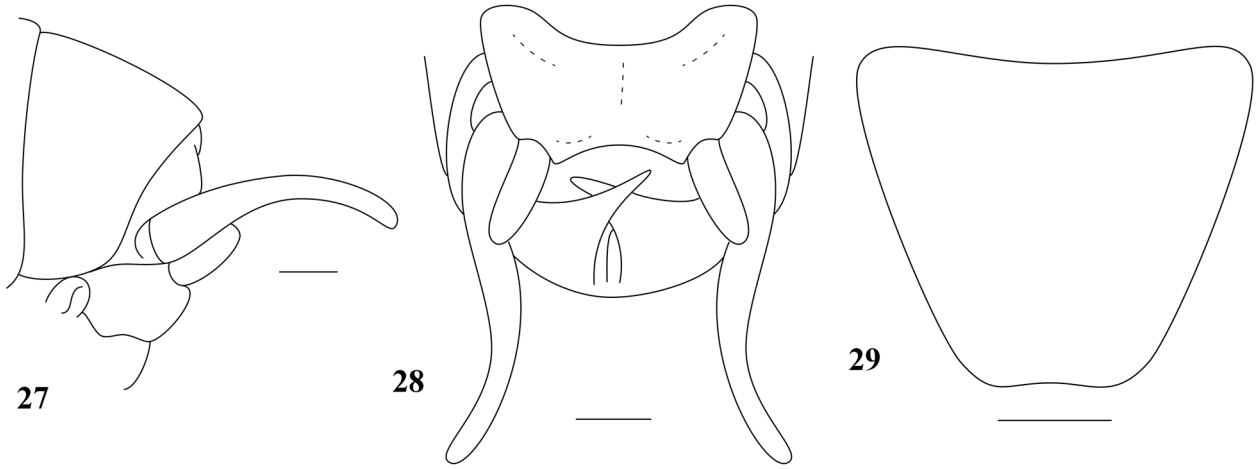
8. *Marthogryllacris (Borneogryllacris) spinosa* Li, Liu *et* Li sp. nov.

(Figs. 27–29)

Description. Male. Body median sized. Fastigium of vertex long-ovate, about 2 times as wide as scape. Frons smooth; eyes long-oval, prominent. Fore margin of pronotum projected, hind margin straight. Tegmina rather extending beyond the apex of abdomen, half-transparent; R with 4 branches at apex, not united with M at base; Rs occurred at the middle of R, with 3 branches. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 5 pairs of spurs, mid tibia without intero-apical spur above. Hind femur armed with 7–8 spines on each side of ventral surface, hind tibia with 6–7 internal and 6-7 external spines on dorsal surface. 9th abdominal tergite split into two spine-like lobes (Fig. 28); subgenital plate short, broader than long; styli almost as long as subgenital plate, cylindrical.

Female. Subgenital plate narrower at apex, with slightly truncate posterior margin (Fig. 29). Ovipositor straight, slightly longer than hind femur, apex blunt.

Coloration. Body yellowish brown, ocelli and antennae yellowish. Lateral and hind margins of pronotum, spurs and spines of all legs blackish.



FIGURES 27–29. *Marthogryllacris (Borneogryllacris) spinosa* Li, Liu, Li sp. nov. 27. end of male abdomen, lateral view; 28. end of male abdomen, ventral view; 29. subgenital plate of female, ventral view; scale bars=1mm.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	27.0–32.0	6.0–8.0	30.0–34.0	16.2–18.5	/
♀	25.0	7.0	28.0	17.0	18.5

Material. Holotype ♂, Zhushitoulinchang, Dayong, Hunan, China, 1988.VI.15, collected by Liu Zu-Yao; paratype 1♂, Hongtan, Guangxi, China, 1979.VII.28, collector unknown; 1♂, Liluo, Longsheng, Guangxi, China, Alt. 1000m, 1984.VI.20, collected by Li Jun; 1♀, Fanjingshan, Guizhou, China, 2001.VII.28, collected by Shi Fu-Ming; 1♂, Fanjingshan, Guizhou, China, 2001.VII.30, collected by Shi Fu-Ming; 1♂, Huayanding, Emei

Mountain, Sichuan, China, Alt. 1900m, 2011.VII.20, collected by Huang Hao; 1♂, Maoer Mountain, Xing'an, Guangxi, China, 2012.VII.23–24, collected by Bi Wen-Xuan; 1♂♀, Maoer Mountain, Xing'an, Guangxi, China, 2012.VII.30–VIII.2, collected by Liu Xian-Wei *et al*..

Distribution. China (Hunan, Sichuan, Guangxi, Guizhou).

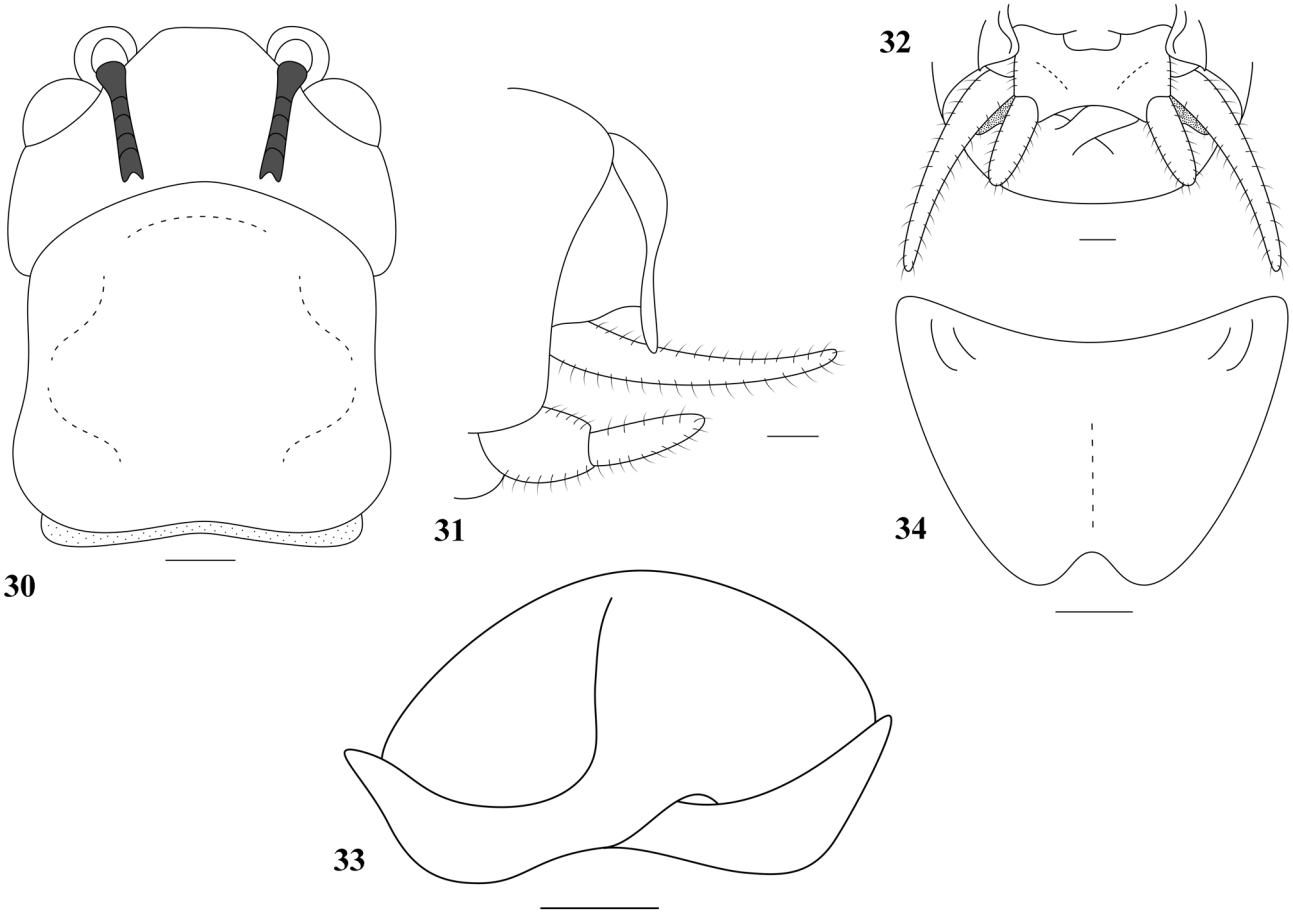
Diagnosis. This new species appears to be closely related to *M.* (*B.*) *elongata* Li, Liu *et* Li sp. nov., but its antenna is absolutely infuscate; also the apex of lobes of 9th abdominal tergite spine-like are not paralleled in it.

9. *Marthogryllacris (Borneogryllacris) elongata* Li, Liu *et* Li sp. nov.

(Figs. 30–34)

Description. Male. Body large, stout. Fastigium of vertex long-ovate, about 2 times as wide as scape, Frons smooth; eyes long-oval, prominent. Fore margin of pronotum projected, hind margin straight. Tegmina rather extending beyond the apex of abdomen, half-transparent; R with 5–6 branches at apex; Rs occurred at the middle of R, with 2–3 branches; CuA with 2 branches. Wings transparent, slightly longer than tegmina. Fore and mid tibiae with 5 pairs of spurs, mid tibia without intero-apical spur. Hind femur armed 1–2 internal spines and 7–8 external spines on ventral surface; each margin of hind tibia with 7 spines on dorsal surface. 9th abdominal tergite split into two long, broad and sickle-like lobes (Fig. 33); subgenital plate short, broader than long, with posterior margin emarginated. Styli as long as subgenital plate, cylindrical.

Female. R of tegmina with 7 branches at apex; Rs occurred after the middle of R, with 2 branches; CuA with 3 branches. Subgenital plate almost rounded, apex with shallow incision (Fig. 34). Ovipositor straight, rather longer than hind femur, with blunt apex.



FIGURES 30–34. *Marthogryllacris (Borneogryllacris) elongata* Li, Liu, Li sp. nov. 30. head and pronotum of male, dorsal view; 31. end of male abdomen, lateral view; 32. end of male abdomen, ventral view; 33. end of 9th abdominal tergite, caudal view; 34. subgenital plate of female, ventral view; scale bars=1 mm.

Coloration. Body yellowish brown, antennae except two basal segments, apex of labrum, mandible and spurs and spines of legs black. Wings infuscate, sometimes hind margin of pronotum and tibiae suffused with darkish.

Measurements. (length in mm)

	Body	Pronotum	Tegmina	Hind femur	Ovipositor
♂	32.0–33.0	8.0	40.0–41.0	20.0–21.0	/
♀	40.0–51.0	9.0–9.5	40.0–46.0	22.0–23.0	26.0–31.0

Material. Holotype ♀, Lanpingfeng, Yuanbaoshan, Guangxi, China, Alt. 1300–1700m, 1992.IX.23, collected by Lu Wen; paratype 1♀, Chenzhou, Hunan, China, 1985.VII.31, collected by Zhang Ya-Lin and Chai Yong-Hui; 1♂, Suoluo, Chishui, Guizhou, China, 1994.VIII.10, collected by Du Yu-Zhou; 1♀, Taipingshan, Liping, Guizhou, China, Alt. 520–860m, 2006.VII.15–18, collected by Song Qiong-Zhang; 2♂♂, Nanling, Guangdong, China, Alt. 1000m, 2008.VII.6, collected by Huang Bao-Ping *&* Yan Ying; 1♂♀, Maoer Mountain, Xing'an, Guangxi, China, 2009.VIII.10, collected by Huang Bao-Ping *&* Yan Ying; 2♀♀, Daming Mountain, Wuming, Guangxi, Alt. 1200m, 2012.VII.28–31, collected by Bi Wen-Xuan.

Distribution. China (Hunan, Guangxi, Guizhou).

Diagnosis. This new species, with wings infuscate and 9th abdominal tergite of male with lobes sickle-like, is distinguishable from *M.* (*B.*) *spinosa* Li, Liu *et* Li sp. nov..

Acknowledgements

We thank Wang Han-Qiang *&* Dai Li for their help on the manuscript; we are grateful to all collectors of the specimens recorded in this paper.

This research was supported by the Natural Science Foundation of Shanghai, China (14ZR1413000); the Scientific Research Innovation Foundation of East China Normal University (78210268); the Science-technology basic condition platform from The Ministry of Science and Technology of the People's Republic of China (2005DKA21402).

References

Gorochov, A.V. (2003) Contribution to the knowledge of the fauna and systematics of the Stenopelmatoidea (Orthoptera) of Indochina and some other territories: IV. *Entomologicheskoe Obozrenie*, 84, 900–921.

Griffini, A. (1914) Note sopra dicesi Grillacridi appartenenti al K. Naturhistor. Hofmuseum di Vienna ed al K. Zoolog. Museum di Berlino. *Atti Sociedad Italiana Scienze Naturali*, 53, 1–335.

Jin, X.B. & Xia, K.L. (1994) An Index-Catalogue of Chinese Tettigonioidea (Orthopteroidea: Grylloptera). *Journal of Orthoptera Research*, 3, 1–17.

Karny, H.H. (1928) Gryllacridaen aus verschiedenen deutschen und osterreichischen Sammlungen. Stettiner Ent. *Zeit*, 89, 247–312.

Karny, H.H. (1937) Orthoptera Fam. Gryllacrididae. *Genera Insectorum*, 206, 151–152.

Liu, X.W. & Jin, X.B. (1994) List of Chinese Stemopelmatoidea and Tettigonioidea (Grylloptera). *Contributions from Shanghai Institute of Entomology*, 11, 1–100.

Liu, X.W. (1999) Stenopelmatoidea. *In*: Huang, B.K. (Ed.), *Fauna of Insects Fujian Province of China*. Fuzhou: Fujian science and technology press, pp. 175–179.

Liu, X.W., Bi, W.X. & Zhang, F. (2010) Orthptera: Stenopelmatoidea. *In:* Xu, H-C (ed.), *Insects of Fengyangshan National Nature Reserve.* Beijing: China Forest University Press. pp. 59–61.