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A checklist of Tetrigoidea (Orthoptera) from Zuojiang Area, southwestern Guangxi, China, with the description of two new species

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Abstract

In this paper we provide checklist of 26 species of Tetrigoidea ground grasshoppers (Scelimenidae, Metrodoridae and Tetrigidae) from the Zuojiang Area, a natural reserve located near Nanning City in the southwestern Guangxi Zhuang Autonomous Region of southwestern China. In addition, two new species: *Coptotettix zaujiangensis* sp. nov. and *Euparatettix obliquocosta* sp. nov. of Tetrigidae are described. Type specimens are deposited at the Institute of Zoology, Shaanxi Normal University, and College of Life Sciences, Nanjing Normal University.

Keywords: Orthoptera, Tetrigoidea, checklist, new species, China

Introduction

Zuojiang Area is a forested resort area (100–400 m elevation) near Nanning City, approximately 80 km west of Nanning in the southwestern Guangxi Zhuang Autonomous Region of southwestern China. The climate is subtropical, frosts are rare, and rainfall averages around 1070 mm annually. Average temperature is 22.7°C annually (Forestry Department of Guangxi 1993). The vegetation zone is subtropical mountain broadleaf evergreens (Forestry Department of Guangxi 1993). Vertical changes in the climate are unclear. The overstory vegetation in the upper region (over 1800 m) of the mountain, where the collections were made, consists largely of secondary growth trees, *Quercus nubium*, *Fagus lucida* (both Fagaceae), and *Liquidambar acalycina* (Hamamelidaceae). The vegetation on the lower side of the mountain is very complex, being composed of subtropical middle mountain mixed broadleaf evergreen and deciduous forest (Forestry Department of Guangxi 1993).

In August 2004, the second author made a study of the insects collected in the Chongzuo Nature Reservation of Guangxi, China. Among the specimens of Tetrigoidea identified,

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two new species of Tetrigidae were discovered, and these are described below (Hancock 1912; Zheng 1988; Shishodia 1991; Zheng 1992; Zheng and Jiang 1994, 2002a, 2002b; Yin et al. 1996; Jiang and Zheng 1998; Liang and Zheng 1998; Zheng and Wei 2000; Zheng and Xie 2000, 2001; Ingrisch 2001a, 2001b; Zheng and Li 2001; Zheng and Mao 2002; Zheng 2005). All types are deposited at the Institute of Zoology, Shaanxi Normal University and College of Life Sciences, Nanjing Normal University.

The taxonomic system of Liang and Zheng (1998) is adopted here. Measurements of specimens are in millimeters (mm).

Scelimenidae

1. *Loxilobus brunneri* Gunther, 1938: Bapeng, Fusui, 100~120 m.
2. *Eucriotettix dohertyi* (Hancock, 1915): Bapeng, Fusui, 100~120 m; Quli, Fusui, 110~120 m.
3. *Thoradonta spiculoba* Hancock, 1912: Banli, Chongzuo, 130 m.

Metrodoridae

4. *Macromotettix brachynota* Zheng and Jiang, 1998: Bapeng, Fusui, 105 m.
5. *Bolivaritettix sikkimensis* (Bolivar, 1909): Bapeng, Fusui, 105 m.

Tetrigidae

6. *Coptotettix huanjiangensis* Zheng and Jiang, 1994: Bapeng, Fusui, 105 m.
7. *Coptotettix fangchengensis* Zheng and Jiang, 2002: Bapeng, Fusui, 100~120 m.
8. *Coptotettix zaujiangensis* Zheng and Jiang sp. nov.: Banli, Chongzuo, 130 m.
9. *Coptotettix longtanensis* Zheng and Jiang, 2004: Banli, Chongzuo, 130 m.
10. *Hedotettix latifemuroides* Zheng and Jiang, 2004: Banli, Chongzuo, 130 m.
11. *Hedotettix gracilis* (De Haan, 1843): Banli, Chongzuo, 130~140 m; Bapeng, Fusui, 100~120 m.
12. *Tetrix bolivari* Saulcy, 1901: Bapeng, Fusui, 100~120 m.
13. *Tetrix simulans* (Bei-Bienko, 1929): Bapeng, Fusui, 105 m.
14. *Tetrix simulanooides* Zheng and Jiang, 1996: Bapeng, Fusui, 100~120 m; Banli, Chongzuo, 130 m.
15. *Tetrix japonica* (Bolivar, 1887): Bapeng, Fusui, 100~120 m; Quli, Fusui, 110~120 m; Banli, Chongzuo, 140 m.
16. *Tetrix beibuwanensis* Zheng and Jiang, 1994: Banli, Chongzuo, 130~140 m; Bapeng, Fusui, 105 m.
17. *Tetrix guinanensis* Zheng, 2002: Banli, Chongzuo, 130 m.
18. *Tetrix tianensis* Zheng, 2005: Bapeng, Fusui, 100~120 m; Banli, Chongzuo, 130 m.
19. *Tetrix ceperoides* Zheng and Jiang, 1998: Banli, Chongzuo, 130 m.
20. *Ergatettix dorsiferus* (Walker, 1871): Banli, Chongzuo, 130 m.
21. *Euparatettix variabilis* (Bolivar, 1887): Banli, Chongzuo, 130 m.
22. *Euparatettix spicuvertex* Zheng, 1998: Banli, Chongzuo, 130 m.
23. *Euparatettix fangchengensis* Zheng, 2005: Banli, Chongzuo, 130 m.



Figures 1, 2. *Coptotettix zaujiangensis* sp. nov. (1) Body, dorsal view. (2) Head and pronotum, lateral view.

24. *Euparatettix sinufemoralis* Zheng and Jiang, 2002, Bapeng, Fusui, 100~120 m.
 25. *Euparatettix obliquocosta* Zheng and Jiang sp. nov.: Banli, Chongzuo, 130 m.
 26. *Paratettix hirsutus* Brunner von Wattenwyl, 1893: Banli, Chongzuo, 130 m.

Descriptions of two new species of Tetrigidae (Orthoptera: Tetrigoidea) from Guangxi in China

Coptotettix zaujiangensis sp. nov. (Figures 1, 2)

Male

Body small, dark brown, with tubercles. Body length 7 mm; pronotum length 7.5 mm; hind femur length 5.5 mm.

Head not projecting above pronotum. The apex of vertex narrow, its width distinctly narrower than the width of an eye; anterior margin of vertex nearly straight, lateral ridge slightly parallel, median carina evident; in profile, vertex and frontal costa forming round shape, front costa slightly concave on median ocelli; width of longitudinal furrow of frontal costa between antennae distinctly wider than width of coxa of antennae. Antennae filiform, lying in the lower one-third part between eyes. Eyes globose. Lateral ocelli placed on the upper one-third part between eyes. Anterior margin of pronotum an obtuse angle; median carina present; upper margin of pronotum nearly straight; lateral carinae parallel on the prozona; hind process of pronotum cone-shaped, slightly reaching beyond the distal end of hind femur; humeral angles obtuse angular, part between humeral angles with a pair of parallel abbreviate carinae. Posterior margin of lateral lobes of pronotum with two concavities; posterior angles downward, apex of angles round. Elytra long, ovate. Wings close to the apex of pronotum. Upper margins of fore femur slightly bending, and lower margins straight; midfemur wider and flat, lower margins straight; width of midfemur

distinctly wider than the width of visible part. Hind femur short, sharper teeth at right angle. Outer side of hind tibia with 12 spines, inner sides with nine spines. Length of first article of hind tarsus two times longer than the third; the first and second pulvilli below the first tarsus small, tip sharp; the third pulvillus large, tip blunt. Subgenital plate flat cone-shaped.

Body dark brown. Two sides on median carina of pronotum with two bright longitudinal stripes, respectively. Elytra dark brown. Wings black. Outer and sides of hind femur brown, inner side black-brown. Hind tibia brown, apex of the second and third tarsi black.

Female

Unknown.

Material examined

Holotype: ♂, P. R. China, Guangxi: Banli, Chongzuo (22°15'N, 107°30'E), 130 m, coll. 20 August 2004 (G.-F. Jiang). Paratypes: 4♂♂, same data as holotype.

This new species is allied to *Coptotettix longjiangensis* Zheng and Wei (2000), but differs in: (1) upper margin of pronotum nearly straight in profile; (2) part between humeral angles with a pair of abbreviated carinae; (3) hind process of pronotum slightly reaching beyond the top of hind femur; and (4) wing not reaching the apex of hind process.

***Euparatettix obliquecosta* sp. nov.**

(Figures 3, 4)

Female

Body small, narrow, and slender. Head projecting above pronotum. Vertex narrower, its width narrower than the width of an eye; anterior margin of vertex nearly round, slightly protruding beyond eyes; median carina obvious; in profile, vertex and front costa forming



Figures 3, 4. *Euparatettix obliquecosta* sp. nov. (3) Body, dorsal view. (4) Body, lateral view.

obtuse-rounded shape. Front costa straight before eyes, not concave, protruding as an arch between antennae; width of longitudinal furrow between antennae as wide as width of the cox of antennae. Antennae filiform, located on the lower one-third part between eyes. Eyes globose and projecting. Lateral ocelli placed on the middle of anterior margins of eyes. Anterior margin of pronotum straight; disc of pronotum with thin larger tubercles; median carina evident along its entire length; in profile, upper margin of pronotum undulate before shoulders, and straight behind shoulders; lateral carinae parallel on the prozona; humeral angles round, lateral ridge slightly contracting behind shoulders; part between humeral angles with a pair of slanting abbreviated carinae; hind process of pronotum long, cone-shaped, reaching two-thirds the length of the hind femur. Humeral angle approximately arc-shaped. Posterior margin of lateral lobes of pronotum with two concavities; posterior angles slanting downward, apex of angles round. Elytra long ovate, apex round. Wings developed, reaching beyond the apex of pronotum. Fore- and mid-femora slender, their upper and lower margins straight; width of mid-femur distinctly wider than the width of visible part. Hind femur short and strong, antegenicular denticles and genicular denticles sharp. Outer side of hind tibia with eight spines, inner sides with seven spines. Length of first article of hind tarsus longer than the third; the first and second pulvilli below the first tarsus small, tip sharp; the third large, tip blunt. Length of upper valve of ovipositor three times the width, upper and lower ovipositors all with slender teeth. Length of subgenital plate larger than width, with triangle projecting in the middle.

Body dark brown. Wings black, hind tibia brown.

Male

Body smaller and more slender than the female. Subgenital plate short, cone-shaped, other structures and body color same as the female.

Body length 4.5~5 mm, 6~7.5 mm; pronotum length 9~10 mm, 11~12 mm; hind femur length 4~4.5 mm, 5.5~6 mm.

Material examined

Holotype: ♀, P. R. China, Guangxi: Banli, Chongzuo (22°15'N, 107°30'E), 130 m, coll. 21 August 2004 (G.-F. Jiang). Paratypes: 3♂♂, 4♀♀, same data as holotype.

This new species is similar to *Euparatettix xizangensis* Zheng (1992), but differs in: (1) front costa before eyes not concave in profile; (2) part between shoulders with a pair of slanting abbreviated carinae; (3) hind process of pronotum reaching two-thirds of hind tibiae; (4) wings reaching beyond apex of hind tibia; (5) length of upper valve of ovipositor three times its width; and (6) hind tibia brown.

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