

A New Species of the Genus *Tetrix* Latreille and A Newly Reported Male of *Bolivaritettix luochengensis* Deng, Zheng et Wei, 2006 (Orthoptera: Tetrigoidea)

DENG Wei-an¹, ZHENG Zhe-min², WEI Shi-zhen¹

(1. Department of Chemistry and Life Science, Hechi University, Yizhou Guangxi 546300, China;
2. Institute of Zoology, Shaanxi Normal University, Xi'an Shaanxi 710062, China)

Abstract: One new species of the genus *Tetrix* Latreille, *Tetrix xiangzhouensis* sp. nov. is described, and the male of *Bolivaritettix luochengensis* Deng, Zheng et Wei is reported for the first time. New species is similar to *Tetri fuchuanensis* Zheng, 1998, but differs in a number of ways. Width of vertex equal to or slightly narrower than width of an eye, anterior margin of vertex not protruding beyond eyes, length of a segment in middle of antenna about 7-8 times longer than width, lateral keels of prozona constricted backward, hind process of pronotum reaching two thirds of hind tibia, lower margins of anterior and middle femora ornate with sparse hairs.

Key words: Orthoptera; Tetrigoidea; *Tetrix*; *Bolivaritettix*; New species; China

蚱属 (*Tetrix*) 一新种记述及罗城波蚱 (*Bolivaritettix luochengensis*) 雄性首次描记 (直翅目: 蚱总科)

邓维安¹, 郑哲民², 韦仕珍¹

(1. 河池学院 化学与生命科学系, 广西 宜州 546300; 2. 陕西师范大学 动物研究所, 陕西 西安 710062)

摘要: 记述采自广西东部地区蚱属(*Tetrix* Latreille) 1 新种: 象州蚱(*Tetrix xiangzhouensis* sp. nov.), 并首次报道罗城波蚱 (*Bolivaritettix luochengensis* Deng, Zheng et Wei) 的雄性个体。新种象州蚱(*Tetrix xiangzhouensis* sp. nov.) 近似于富川蚱 (*Tetri fuchuanensis* Zheng, 1998), 主要区别为: (1) 头顶与一眼等宽或略狭于一眼宽; (2) 头顶前缘不突出于复眼之前; (3) 触角中段一节长为宽的 7-8 倍; (4) 沟前区侧隆线略向后收缩; (5) 后突到达后足胫节的 2/3 处; (6) 前、中足股节下缘具细毛。

关键词: 直翅目; 蚱总科; 蚱属; 波蚱属; 新种; 中国

中图分类号: Q969.26 文献标识码: A 文章编号: 0254-5853-(2008)04-455-04

The genus *Tetrix* was established by Latreille in 1802 and currently includes 160 species (Deng et al, 2007a). The species type is *Gryllus subulatus* Linnaeus, 1761. They are mainly distributed in Asia, Europe, Africa, Australia and North America (Rehn, 1952; Harz, 1975; Shishodia, 1991; Zheng, 2005; Deng et al, 2007b). Among which 88 species are widely distributed in China.

Species of this genus *Tetrix* Latreille differ from

species in other genera in a number of ways: head not exerted; vertex generally as broad as or wider than an eye; frontal costa generally sinuated behind the antennae, moderately sulcate; antennae filiform, inserted between the lower margins of eyes; pronotum extends up to the apex of abdomen or beyond to the hind femora; posterior margins of lateral lobes of pronotum with two concavities, posterior angles of lateral lobes of pronotum

Received date: 2008-02-28; Accepted date: 2008-05-15

Foundation items: Guangxi Education Department Foundation of China (No.200607MS035) and Program for Excellent Talents in Guangxi Higher Education Institutions (RC2007034).

收稿日期: 2008-02-28; 接受日期: 2008-05-15

基金项目: 广西教育厅科研资助项目(No.200607MS035); 广西高校优秀人才资助计划项目(RC2007034)

第一作者简介: 邓维安(1969-), 男, 广西合浦人, 河池学院副教授, 主要从事蚱总科昆虫分类学研究。E-mail: dengweian5899@tom.com

turned downwards, generally round at apex; tegmina and wings normal; and first segment of posterior tarsi longer than the third.

During a field study in the summer of 2006, specimens belonging to *Tetrix* were collected by Wei-An DENG from Xiangzhou County, Guangxi Zhuangzu Autonomous Region, China. After comparing it with specimens of our collections and literatures of known species, this species differs from them greatly and we describe it as a new species. In 2006, the first author of the present paper briefly described *Bolivaritettix luochengensis* Deng, Zheng et Wei based on a single female specimen collected from Luocheng of Guangxi Zhuangzu Autonomous Region. On 23 April 2006, Wei-an DENG collected more specimens of this species from the locality. Detailed description of the male is given here.

1 Materials and Methods

Type specimen of *Tetrix xiangzhouensis* sp. nov. is deposited in the Institute of Zoology, Shaanxi Normal University, China (2♂4♀) and Department of Chemistry and Life Science, Hechi University, China (3♂6♀). The type specimens of *Bolivaritettix luochengensis* are deposited in Department of Chemistry and Life Science, Hechi University, China.

Specimens were examined and illustrated using an XTL-1 stereomicroscope. Morphological terminology and measurement method follows that of Zheng (2005) and Deng et al (2007). Their measurements are in millimeters (mm).

2 Results and Discussion

2.1 *Tetrix xiangzhouensis* sp. nov. (Fig.1)

Female. Body small, slender. Head not exerted above the pronotal surface. Anterior margin of vertex straight, not protruding beyond eyes, median carina conspicuous. Width of vertex equal to or slightly narrower than width of an eye, in profile, vertex and frontal ridge forming an obtuse round shape. In profile, vertex and frontal ridge form an obtuse angle, frontal costa slightly concave between lateral ocelli, frontal ridge slightly protruding, arching between antennae, width of longitudinal furrow narrower than width of first segment of antennae. Antenna filiform, 15-segments, length of a segment in middle about 7-8 times longer

than its width, inserted between lower margins of eyes. Eyes globose, lateral ocelli placed on middle of anterior margins of eyes. Pronotum tectiform slight, disc of pronotum with numerous small granule, anterior margin of pronotum straight, midkeel of pronotum completed. In profile, upper margin of pronotum high, lamellar, undulated anterior and flat behind. Lateral keels of prozona constricted backward, humeral angle arched, without a pair, abbreviated carinae between shoulders. Hind process of pronotum narrow, long cone-shaped, reaching two thirds of hind tibia. Posterior margins of lateral lobes of pronotum with two concavities, posterior angles of lateral lobes of pronotum turned downwards, apex of angles round. Tegmina long, ovate, apex rounded. Hind wings developed, surpassing the top of hind process. Lower margins of anterior and middle femora straight and ornate with sparse hairs, width of mid-femur slightly narrower than that of tegmina. Length of hind femur 3 times longer than width, pre-knee teeth and knee teeth right angles. Outer side of hind tibia with 7-8 spines, inner side with 5-6 spines. Length of first segment of hind tarsi longer than third, third pulvillus longer than first and second, apices of three pulvilli sharp. Ovipositor stout and short, length of dorsal ovipositor valves 2.6 times its width, dorsal and ventral valves with slender saw-like teeth. Length of subgenital plate slightly equal to its width, middle of posterior margin of subgenital plate with a triangular convex.

Body dark brown. Disc of pronotum with a black transverse spots behind shoulders. Wings black. Fore and middle femora and tibia each with two distinct dark transverse spots. Hind femur brown, outer side with two black spots. Hind tibia dark brown, with light ring at the base and middle.

Male: Body size smaller than female, feature of structure similar to female. Width of mid-femur wider than the width of tegmina. Subgenital plate brief coneshaped, apex sharp.

Measurements. Length of body: ♂6-6.5mm, ♀7.5-8mm; length of pronotum: ♂8.5-9mm, ♀9.5-10mm; length of hind femur: ♂4-4.2mm, ♀4.5-5mm.

Holotype: ♀. P.R.China, Guangxi, Xiangzhou (Dasuo), 23.8°N, 109.7°E, 400m alt, 23 August 2007, collected by Wei-an DENG. Paratypes. 4♂s and 10 ♀s, same data as for holotype.

Etymology. The new species name was from the

locality, Xiangzhou, Guangxi, China.

Remarks. This new species is similar to *Tetrix fuchuanensis* Zheng, 1998, but differs in: width of vertex equal to or slightly narrower than width of an eye, anterior margin of vertex not protruding beyond eyes, length of a segment in middle of antenna about 7-8 times

longer than width, lateral keels of prozona constricted backward, hind process of pronotum reaching two thirds of hind tibia, lower margins of anterior and middle femora ornate with sparse hairs.

Distribution. China (Guangxi).

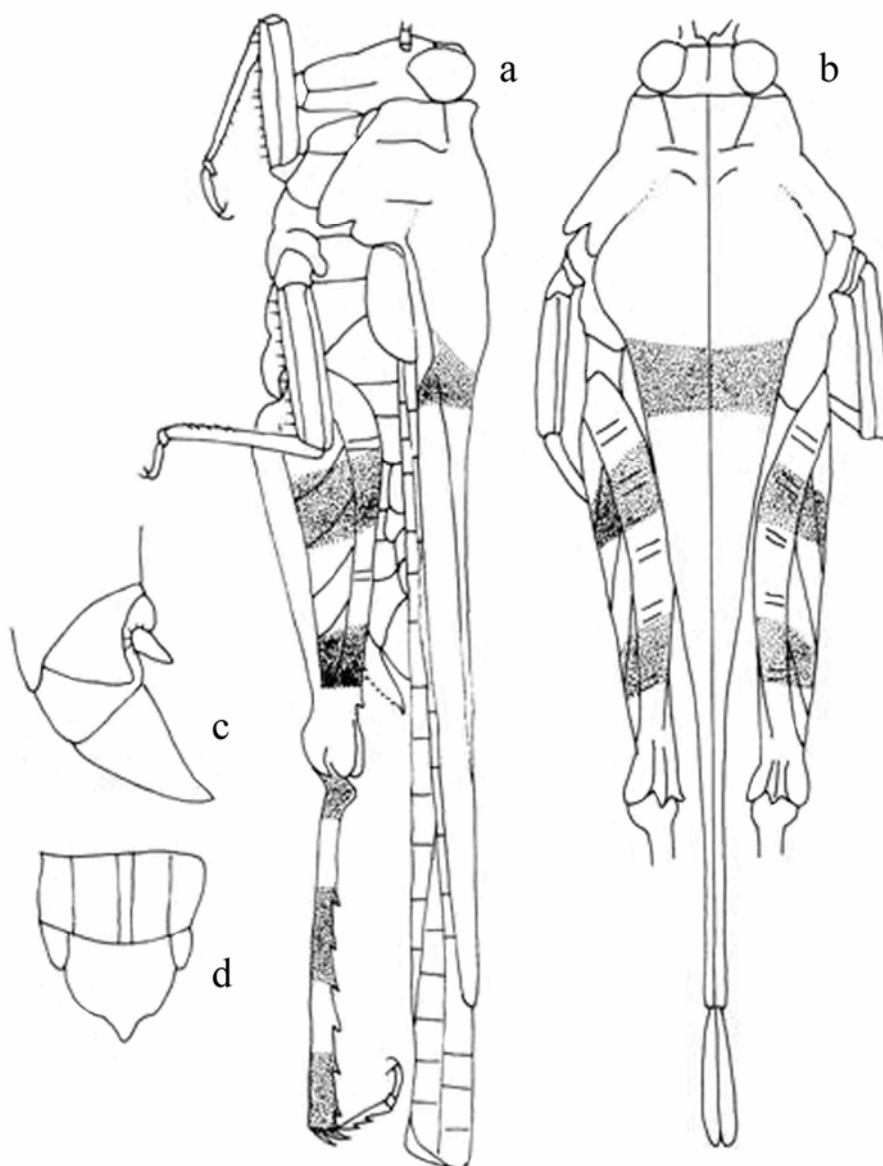


Fig. 1 *Tetrix xiangzhouensis* sp. nov.

a: body of female, dorsal view; b: body of female, lateral view; c: subgenital plate of male, lateral view; d: subgenital plate of female, ventral view.

2.2 A Newly Reported Male of *Bolivaritettix luochengensis* Deng, Zheng et Wei, 2006

Bolivaritettix luochengensis Deng, Zheng et Wei, 2006, Acta Zootaxonomica Sinica, 31 (2): 376.

Description of male. Size small. Head not exserted

above the pronotal surface. Anterior margin of vertex straight, not protruding beyond eyes, median carina conspicuous. Width of vertex equal to or slightly narrower than width of an eye. In profile, vertex and frontal ridge forming an obtuse round shape. Frontal

costa slightly concave between lateral ocelli, frontal ridge slightly protruding arching between antennae, width of longitudinal furrow narrower than width of first segment of antennae. Antenna filiform, 14-segmented, length of a segment in middle about 6-7 times longer than width, inserted between lower margin of eyes. Eyes globose, lateral ocelli placed on middle of anterior margins of eyes. Disc of pronotum coarse, with numerous coarse tubercles, anterior margin of pronotum straight and slightly concave in middle, mid-keel of pronotum interrupted, high and lamellar before shoulders, upper margin of pronotum undulated in profile. Lateral keels of prozona constricted backward, disc of pronotum largely convexed between shoulders, humeral angle rounded, lateral margins of pronotum distinctly constricted behind humeral angle, with abbreviated carinae in large convex between shoulders. Caudal end of pronotum narrow, long cone-shaped, surpassing the top of hind femora, reaching middle of hind tibia. Lateral lobes of pronotum protrude outwards, end of posterior angles truncate, posterior margins of lateral lobes of pronotum with two concavities. Tegmina long oval, apex

round. Hind wings developed, reaching the caudal end of pronotum. Upper and lower margins of middle femora slightly undulated, width of mid-femur wider than the width of tegmina. Hind femur 3 times longer than wide, margins of hind femur finely serrulate, antegenicular right angled and genicular denticles right angled. Outer side of hind tibia with 6-8 spines, inner side with 4-5 spines. Length of first segment of hind tarsi longer than third, third pulvillus longer than first and second, apices of first and second sharp, apices of third obtuse. Subgenital plate brief cone-shaped, apex sharp.

Body brown. Hind femur brown, lower outer side, black. Hind tibia dark brown, with light ring at the base and middle.

Measurements: Length of body ♂6-7.5 mm, length of pronotum: ♂8-9 mm, length of hind femur: ♂4.5-5.0 mm.

Material examined: 8♂♂6♀♀, Luocheng County, Guangxi Zhuangzu Autonomous Region, 24.8°N, 108.9°E, alt. 600 m, 23. iv.2006, collected by DENG Wei-an.

Distribution: China (Guangxi).

References:

- Bei B, Mishchenko LL. 1951. Locusts and Grasshoppers of the USSR and Adjacency countries, Fam. Tetrigidae[M]. Moscow and Leningrad, Akad. Nauk. SSSR Pt, 83-107.
- Blackith RE. 1992. The Tetrigidae (Insecta: Orthoptera) of South-East Asia[M]. Japaga, 'Rockbottom', Ashford Co. Wicklow, Ireland, 1-248.
- Bolivar I. 1887. Essai sur les Acridiens de la tribu des Tetrigidea[J]. *Annls Soc Ent Belg*, **31**: 175-313.
- Deng WA, Zheng ZM, Wei SZ. 2007a. Two new species of the genus *Tetrix* Latreille (Orthoptera: Tetrigoidea: Tetrigidae) from southern China[J]. *Acta Zootaxonomica Sinica*, **32**(2): 293-296.
- Deng WA, Zheng ZM, Wei SZ. 2007b. One New Species of Tetrigidea (Orthoptera: Tetrigoidea) from Guangxi[J]. *Sichuan Journal of Zoology*, **26**(1): 5-7. (in Chinese)
- Deng WA, Zheng ZM. 2006. One new species of Metrodoridea (Orthoptera: Tetrigoidea) from Guangxi[J]. *Acta Zootaxonomica Sinica*, **31**(2): 376-377. (in Chinese)
- Deng WA, Zheng ZM, Wei SZ. 2007. Fauna of the Tetrigoidea from Yunnan and Guangxi[M]. Nanning, China: Guangxi Science & Technology Press, 1-458. (in Chinese)
- Harz K. 1975. Die Orthopteren Europas II: The Orthoptera of Europe II series[J]. *Entomologica*, **11**: 1-939.
- Jiang GF, Zheng ZM. 1998. Grasshoppers and Locusts from Guangxi[M]. Guilin, China: Guangxi Normal University Press, 1-363. (in Chinese)
- Kirby WF. 1914. The Fauna of British India Including Ceylon and Burma[A]. Orthoptera (Acridiidae)[M]. London: Taylor & Francis, 1-276.
- Lateille PA. 1802. Histoire naturelle, générale et particulière, des Crustacés et des Insectes[J]. *Paris: Tome 12 Dufart*, **3**: 230-284, **12**: 70-164.
- Liang GQ, Zheng ZM. 1998. Fauna Sinica, Insecta, Vol 12, Orthoptera, Tetrigoidea[M]. Beijing: Science Press, 1-278. (in Chinese)
- Rehn JAG. 1952. The grasshoppers and locusts (Acridoidea) of Australia, 1. Tetrigidae and Eumastacidae[M], Melbourne, 1-326.
- Shishodia MS. 1991. Taxonomy and Zoogeography of the Tetrigoidea (Orthoptera: Tetrigoidea) of North Eastern India[R]. *Rec Zool Survey India, Occ. Papers*, 1-204.
- Zheng ZM, Lu W, Li TS. 2000. Two new species of Tetrigoidea from Guangxi (Orthoptera: Tetrigoidea) [J]. *Guangxi Sciences*, **7**(4): 313-315. (in Chinese)
- Zheng ZM, Deng WA. 2004. Seven new species of the north in Guangxi (Orthoptera) [J]. *Entomotaxonomia*, **26**(2): 91-103. (in Chinese)
- Zheng ZM. 2005. Fauna of the Tetrigoidea from Western China[M]. Beijing: Science Press, 1-501. (in Chinese)
- Zheng ZM, Jiang GF. 2006. Four new species of Tetrigoidea from Zuojiang, Guangxi (Orthoptera) [J]. *Acta Zootaxonomica Sinica*, **31**(1): 141-145. (in Chinese)