



A taxonomic study of the genus *Svistella* Gorochov (Orthoptera, Gryllidae, Trigonidiinae)

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Abstract

A taxonomic study of the genus *Svistella* Gorochov, 1987 is presented. Six species are described, including three new species and a new combination. A key to species of the genus is given.

Key words: Orthoptera, Gryllidae, Trigonidiinae, *Svistella*, taxonomy, new species

Introduction

The genus *Svistella* was proposed by Gorochov (1987) with *Paratrigonidium bifasciatum* Shiraki, 1913 as its type species, and at the same time, *Anaxipha rufonotata* Chopard, 1932 transferred to the genus *Svistella*. In this paper, six species have been recognized, of which three species—*S. tympanalis* **sp. nov.**, *S. anhuiensis* **sp. nov.** and *S. fallax* **sp. nov.**—are described as new to science. *Anaxipha dubia* Liu et Yin (1993) was transferred to the genus *Svistella*. All type specimens are deposited in East China Normal University, Biology of History Museum, HSNU and Shanghai Entomological Museum, CAS (Shanghai, China).

Svistella Gorochov, 1987

Svistella Gorochov, 1987. In Medvedev, L.N. [Ed.]. Entomofauna of Vietnam. Nauka, Moscow: 13; Otte, 1994. Orthoptera Species File 1: 47.

Type species: *Paratrigonidium bifasciatum* Shiraki, 1913

Body small. Eyes vertically lengthened. Fifth joint of maxillary palpi long, triangular. Anterior margin of pronotum straight or a little convex. Male tegmina membranaceous, extending to apex of abdomen, presenting a large mirror contains false mirror; tegmina of female feebly convex, with regular veins. Anterior tibiae with tympanum; posterior tibiae with three pairs of dorsal spurs and five apical spurs, two internal apical spurs longer. Genitalia of male with long apical branches. Ovipositor short and curved, with apical valve occupying half the total length, finely denticulate.

Key to species of *Svistella*

- 1 Posterior femora without dark longitudinal band at the external side 2
- Posterior femora with two dark longitudinal bands at external side 3

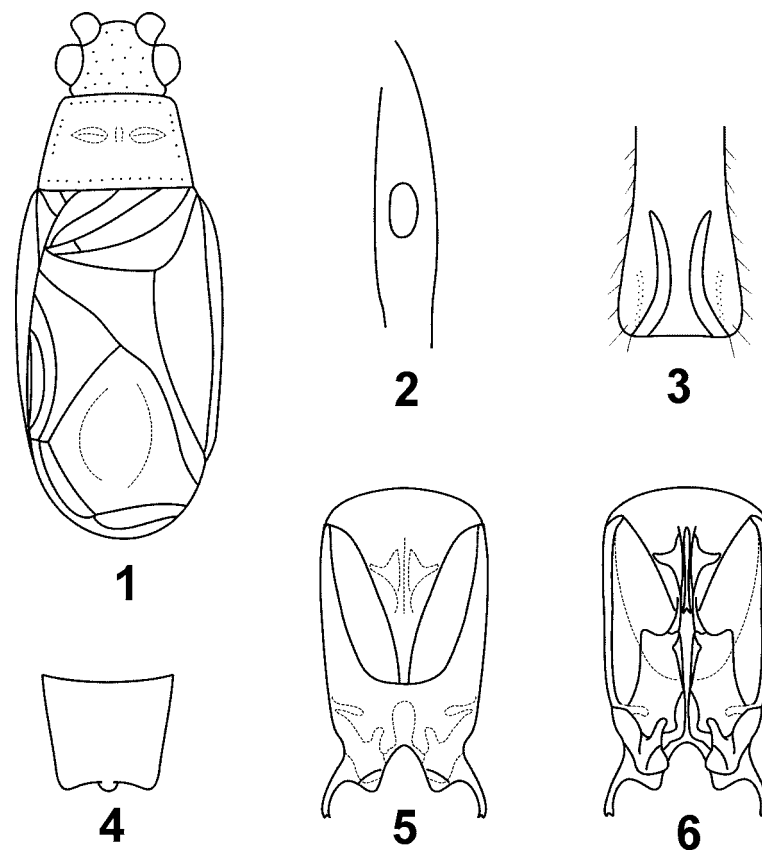
- 2 Inner tympanum smaller than outer one as in Fig. 2; wings wanting; genicular lobe of posterior femora with a short black line as in Fig. 3; male genitalia as in Figs. 5–6..... *Svistella tympanalis* **sp. nov.**
- Inner and outer tympana almost equal; wings caudate; genicular lobe of posterior femur without black line; male genitalia as in Figs. 9–10..... *Svistella rufonotata*
- 3 Head with a black transverse band between the eyes; tegmina with blackish lateral field, male genitalia as in Figs. 12–13..... *Svistella bifasciatum*
- Head without a blackish transverse band; tegmina with yellowish lateral field..... 4
- 4 Head and pronotum without reddish brown bands and spots; male genitalia as in Figs. 14–15..... *Svistella dubia*
- Head and pronotum with conspicuously reddish brown bands and spots 5
- 5 Posterior femora with two dark spots near apex; male genitalia as in Figs. 17–18.....
- *Svistella anhuiensis* **sp. nov.**
- Posterior femora without dark spots near apex; male genitalia as in Figs. 24–25.....
- *Svistella fallax* **sp. nov.**

1. *Svistella tympanalis* **sp. nov.**

(Figs. 1–6)

Holotype ♂, CHINA: Anhui prov., Xiuning county, Xikou, 2008.V.7, leg. Jin Xing-Bao.

Other material studied: Paratypes 1♂, 5♀♀, same data as holotype; 1♀, Zhejiang prov. Lin'an county, Tianmushan, 2008.VIII.4–5, leg. Yin Hai-Sheng; 1♀, Yunnan prov. Jiruo, 1995. VIII.5–9, leg. Liu Xian-Wei et al.; 1♀, Xizang, autonomous Reg., Motuo county, Beiben, alt. 1090m, 1979. VIII.12, leg. Jin Gen-Tao and Wu Jian-Yi; 1♀, Guangxi prov. Fangchenggang county, Shiwandashan, 2000. VIII.1, leg. Li Kai; 7♂♂, 1♀, purchased from Shanghai flower and bird fair.



FIGURES 1–6. *Svistella tympanalis* **sp. nov.** 1. body of male, dorsal view; 2. base of fore tibiae, lateral view; 3. apex of posterior femur; 4. subgenital plate of male, ventral view; 5. genitalia of male, dorsal view; 6. genitalia of male, ventral view.

Diagnosis. Male. Body small, pubescent. Head slightly narrower than pronotum; frontal rostrum as wide as the 1st antennal joint and with long bristles, eyes laterally projecting, ocellus not obvious; 3rd–5th joints of maxillary palpi elongate, 5th joint triangular. Pronotum transverse, narrowing in front, anterior and posterior margin straight. Inner tympanum of fore tibiae smaller than outer one. Posterior tibiae with three pairs of dorsal spurs and five apical spurs, two internal apical spurs longer. Tegmina extending to apex of abdomen, one oblique vein, mirror length less than twice mirror width with contains oval false mirror; lateral field with 5 complete veins. Wings completely absence. Male genitalia as in Figs. 5–6.

Female. Tegmina feebly convex, dorsal field with 4–5 regular veins, transverse vein scarcely visible; lateral field with 4 complete veins. Ovipositor short and slightly curved, with apical valves occupying half total length, finely denticulate.

Coloration. Body yellowish brown with black long bristles. Head with four distinctly reddish brown longitudinal bands, posterior femora with a short black line at genicular lobes, tarsus dark brown.

Measurements. (in mm) Body ♂5.5–6.0, ♀4.8–5.5; pronotum ♂1.0, ♀0.9; tegmina ♂4.0–4.5, ♀3.0–3.5; posterior tibiae ♂4.0, ♀4.0; ovipositor 1.5–2.0.

Distribution. China (Anhui, Guangxi, Yunnan, Xizang).

Discussion. Similar to *Svistella rufonotata*, but differs in the inner tympanum smaller than the outer one, genicular lobes of posterior femur with a short black line and shape of male genitalia.

Etymology. The species name refers to the morphology of tympana, meaning to the smaller inner tympanum.

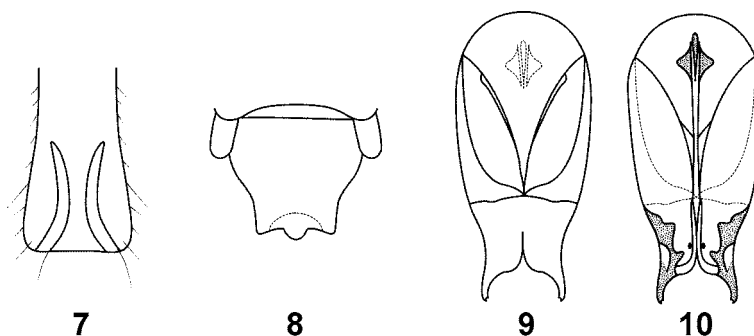
2. *Svistella rufonotata* (Chopard, 1932)

(Figs. 7–10)

Anaxipha rufonotata Chopard, 1932. Ark. Zool., 23A No. 9: 12; Chopard, 1968. In Beier [Ed.]. Orthopterorum Catalogus, 12: 317; Chopard, 1969. Orthoptera Vol. 2 Grylloidea; Yin & Liu, 1995. Synopsis on the classification of Grylloidea and Gryllotalpoidea from China: 35.

Svistella rufonotata Gorochov. 1987. In Medvedev, L.N. [Ed.]. Entomofauna V'etnama [Entomofauna of Vietnam]: 14.

Distribution. China (Hunan, Guangdong, Yunnan), Vietnam, Malaysia, India.



FIGURES 7–10. *Svistella rufonotata* (Chopard, 1932). 7. apex of posterior femur, dorsal view; 8. subgenital plate of male, ventral view; 9. genitalia of male, dorsal view; 10. genitalia of male, ventral view.

3. *Svistella bifasciata* (Shiraki, 1913)

(Figs. 11–13)

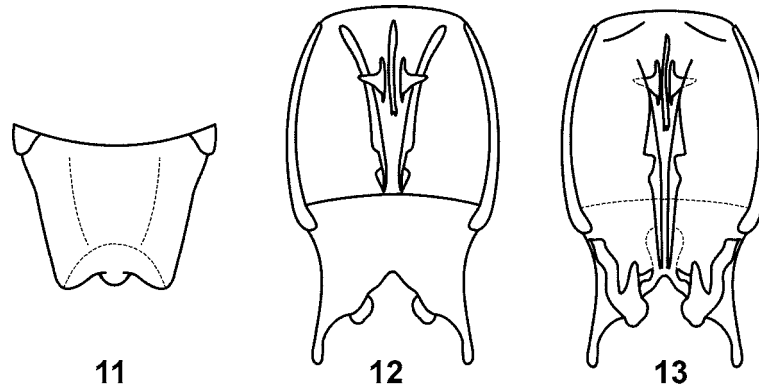
Paratrigonidium bifasciatum Shiraki, 1913. Monographie der Grylliden Formosa, mit der Uebersicht der Japanischen Arten: 108; Shiraki, 1930. Ins. Mats., 4(4): 330; Kato, 1932. Three Colour Illustrated Insects of Japan, 1: pl. 31, f.

1; Chopard, 1968. In Beier [Ed.]. Orthopterorum Catalogus, 12: 325; Yin & Liu, 1995. Synopsis on the classification of Grylloidea and Gryllotalpoidea from China: 37.

Paratrigonidium majusculum Karny, 1915. Suppl. Entomo., 4: 69. Synonymized by Shiraki, 1930: 330.

Svistella bifasciata Gorochov. 1987. In Medvedev, L.N. [Ed.]. Entomofauna V'etnama [Entomofauna of Vietnam]: 13.

Distribution. China (Jiangsu, Anhui, Shanghai, Zhejiang, Taiwan, Jiangxi, Hunan, Hainan, Guangxi), Japan.



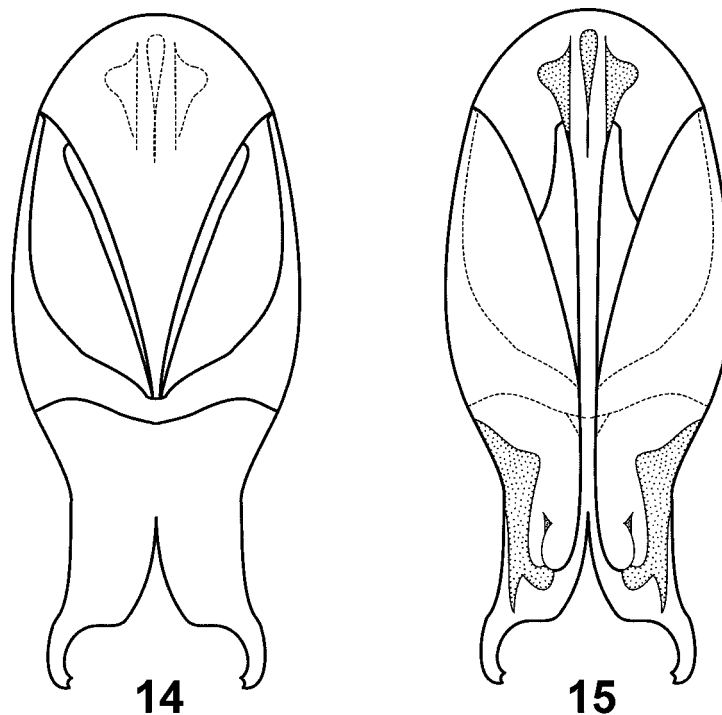
FIGURES 11–13. *Svistella bifasciata* (Shiraki, 1913). 11. subgenital plate of male, ventral view; 12. genitalia of male, dorsal view; 13. genitalia of male, ventral view.

4. *Svistella dubia* (Liu et Yin, 1994) comb. nov.

(Figs. 14–15)

Anaxipha dubia Liu & Yin, 1994[1992–1993]. Contrib. Shanghai Inst. Entomol., 11: 90[93]; Yin & Liu, 1995. Synopsis on the classification of Grylloidea and Gryllotalpoidea from China: 34.

Distribution. China (Yunnan).



FIGURES 14–15. *Svistella dubia* (Liu et Yin, 1994). 14. genitalia of male, dorsal view; 15. genitalia of male, ventral view.

5. *Svistella fallax* sp. nov.

(Figs. 16–18)

Holotype ♂, CHINA: Sichuan prov., Nanjiang county, 1999. VIII.20 leg. Li Kai.

Other material studied: Paratypes 5♂♂, 5♀♀, same data as holotype.

Diagnosis. Male. Body small, pubescent. Head wider than anterior margin of pronotum; frontal rostrum as wide as 1st antennal joint, with long bristles; eyes big, laterally projecting, ocellus not obvious; 3rd–5th joints of maxillary palpi elongate, the 5th joint long triangular. Pronotum transverse, narrowing in front, anterior and posterior margin straight. Inner and outer tympanum of fore tibiae almost equal. Posterior tibiae with three pairs of dorsal spurs and five apical spurs, two internal apical spurs longer. Tegmina extending to apex of abdomen, one oblique vein, mirror length less than twice mirror width with contains oval false mirror; lateral field with 5 complete veins. Wings absence. Male genitalia as in Figs. 17–18.

Female. Tegmina faintly convex, with 5 regular veins in the dorsal field; lateral field with 5 complete veins. Ovipositor short and slightly curved, with apical valves occupying half total length, finely denticulate.

Coloration. Body light yellowish brown. Head above with four reddish brown longitudinal bands, antennal fossa with reddish inferior margin. Pronotum with two light reddish brown longitudinal bands in middle, posterior femur with two dark longitudinal bands at the external side, abdomen black.

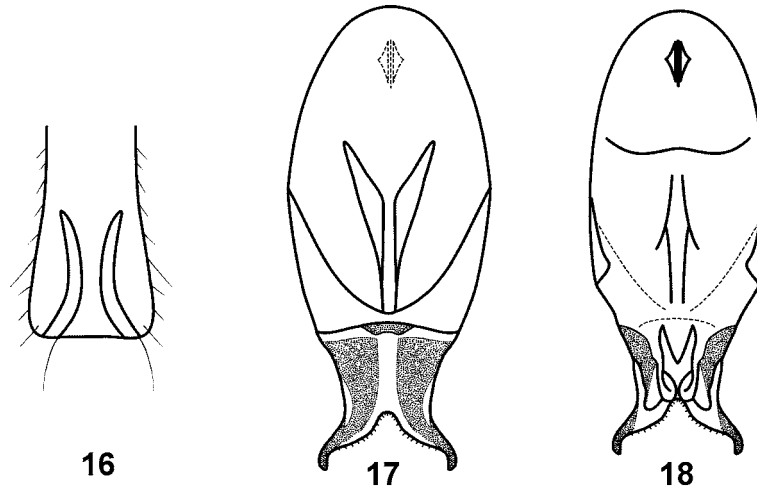
Measurements. (in mm)

Body ♂6.7, ♀6.3; pronotum ♂1.0, ♀1.1; tegmina ♂4.9, ♀4.2; posterior femora ♂5.5, ♀5.6; ovipositor 2.2.

Distribution. China (Sichuan).

Discussion. Similar to *Svistella dubia*, but the new species coloration lighter and has reddish brown bands and spots on head and pronotum, male genitalia is different.

Etymology. The new specific name is derived from Latin fallax, meaning very similar to *Svistella dubia*.



FIGURES 16–18. *Svistella fallax* sp. nov. 16. apex of posterior femur, dorsal view; 17. genitalia of male, dorsal view; 18. genitalia of male, ventral view.

6. *Svistella anhuiensis* sp. nov.

(Figs. 19–25)

Holotype ♂, CHINA: Anhui prov., Tunxi city, Baishan, 1990.X.21, leg. Liu Xian-Wei and Jin Xing-Bao.

Other material studied: Paratypes 5♂♂, same data as holotype; 6♂♂, purchased from Shanghai flower and bird fair, 2008. IX.

Diagnosis. Male. Body small, pubescent. Head little wider than anterior margin of pronotum; frontal rostrum as wide as 1st antennal joint, with long bristles; eyes big, laterally projecting, ocellus not obvious; 3rd–5th joints of maxillary palpi elongate, the 5th joint long triangular. Pronotum transverse, narrowing in front, anterior and posterior margin straight. Fore tibiae with tympana, the inner tympanum hardly smaller than outer one. Posterior tibiae with three pairs of dorsal spurs and five apical spurs, two internal apical spurs longer. Tegmina extending to apex of abdomen, one oblique vein, mirror length less than twice mirror width with oval false mirror; lateral field with 5 complete veins. Wings absence or caudate. Subgenital plate as in Fig. 23, genitalia as in Figs. 24–25.

Female unknown.

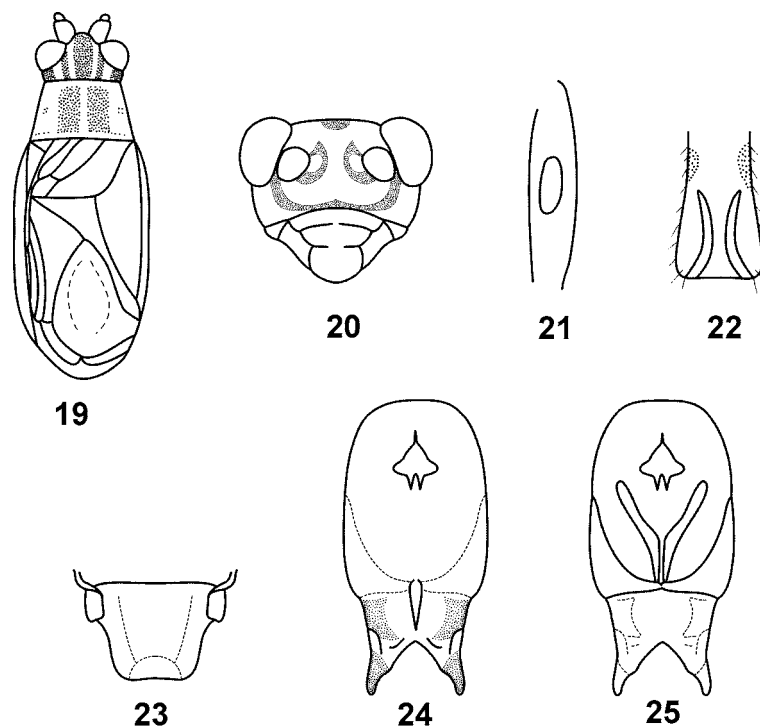
Coloration. Body yellowish. Head with four reddish brown longitudinal bands above, face with two reddish brown stripes between bases of antennae and with a reddish brown transverse band (Fig. 20). Pronotum with two light reddish brown longitudinal bands in middle, posterior femur with two dark longitudinal bands at the external side and two small dark spots near apex.

Measurements. (in mm) Body ♂6.0–6.5; pronotum ♂1.0; tegmina ♂4.5–5.5; posterior femora ♂5.0–5.5.

Distribution. China (Anhui).

Discussion. Similar to *Svistella dubia* and *Svistella fallax*, but the new species has two small black spots near apex of posterior femur and the male genitalia is different.

Etymology. The new species is named after its locality.



FIGURES 19–25. *Svistella anhuiensis* sp. nov. 19. Body of male, dorsal view; 20. head, frontal view; 21. base of fore tibiae, lateral view; 22. apex of posterior femur, dorsal view; 23. subgenital plate of male, ventral view; 24. genitalia of male, dorsal view; 25. genitalia of male, ventral view.

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