

A new species in the subgenus *Tipula* (*Sivatipula*) (Diptera: Tipulidae) from Xizang, China

Qicheng YANG¹, Zhaohui PAN^{2①}, Ding YANG^{3①}

1. Food Science College, Tibet Agriculture & Animal Husbandry University, Linzhi, Xizang 860000, China

2. Institute of Plateau Ecology, Tibet Agriculture & Animal Husbandry University, Linzhi, Xizang 860000, China

3. Department of Entomology, China Agricultural University, Beijing 100193, China

Abstract: *Tipula* (*Sivatipula*) is a small subgenus of *Tipula* with only fourteen species described in the world, with eight species previously known to occur in China. Here one new species is added to the fauna of China. A key to the species (males) of *Tipula* (*Sivatipula*) from China is presented.

Key words: crane flies; taxonomy; key

西藏长角大蚊亚属一新种（双翅目：大蚊科）

杨棋程¹，潘朝晖^{2①}，杨定^{3①}

1. 西藏大学农牧学院食品科学学院，西藏 林芝 860000；2. 西藏大学农牧学院高原生态研究所，西藏 林芝 860000；3. 中国农业大学昆虫学系，北京 100193

摘要：长角大蚊亚属是大蚊属中的1个小类群，全世界共知14种，中国已记载8种。本文再记述1新种，并编制了中国长角大蚊亚属（雄性）检索表。

关键词：大蚊；分类；检索表

Introduction

Tipula (*Sivatipula*) is a small subgenus of *Tipula* with only fourteen species described in the world (Oosterbroek 2019). This subgenus is characterized by the following features: antennae of male very long, almost equal to body; flagellar segments very long, each with six to seven strong verticillate bristles and many short bristles besides usual basal verticils; legs with tibial spur formula 1-2-2, 1-1-2; claws of male with tooth; wings hyaline, not variegated; R_{1+2} entire, R_s longer than $m-cu$; lobe of gonostylus usually with small black spines (Alexander 1964). It is distributed in China, India and Southeast Asia (Xue & Men 2016). Eight species were previously known to occur in China.

Here we report a new species, *Tipula* (*Sivatipula*) *yigongensis* sp. nov., from Xizang, China. This is the first record of this subgenus in Xizang. A key to the species (males) of *Tipula* (*Sivatipula*) from China is presented.

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① Corresponding authors, E-mails: panzhaohui2005@163.com; yangding@cau.edu.cn

Material and methods

The specimen was studied and illustrated using a ZEISS Stemi 2000-c stereo microscope. Details of coloration correspond to a specimen immersed in 75% ethyl alcohol (C₂H₅OH). Genitalic preparations of males were made using a lactic acid solution (C₃H₆O₃ > 85%) heated in a water-bath to 95°C for 4–6 minutes. After examination, they were transferred to fresh glycerine (C₃H₈O₃) and stored in a microvial pinned below the specimen. Type specimens are deposited in the Entomological Museum of China Agricultural University (CAU), Beijing.

The morphological terminology mostly follows McAlpine (1981), Alexander & Byers (1981) and Tangelder (1983). The terminology applied to the wing veins follows the interpretations of Santos and Ribeiro (2018), Cumming & Wood (2017) and Theischinger et al. (2018). Terminology of the male hypopygium follows Ribeiro (2006) and Frommer (1963). The following abbreviations are used in figures: tg 9 — tergite nine, st 8 — sternite eight, st 9 — sternite nine, bk — beak, cg — clasper of gonostylus, and lg — lobe of gonostylus.

Taxonomy

Key to species (males) of *Tipula (Sivatipula)* from China

1. Lateral margin of tergite 9 with a pair of fleshy lobes; sternite 9 with a downy branched appendage (Figs. 4, 8) *T. (S.) yigongensis* **sp. nov.**
- . Lateral margin of tergite 9 without fleshy lobes; sternite 9 without a downy branched appendage 2
2. Posterior margin of tergite 9 with a pair of finger-like processes (not at a lower level) 3
- . Posterior margin of tergite 9 without finger-like processes or with two processes bearing spines at a lower level 4
3. Finger-like processes of tergite 9 apically with small spines (Xue & Men 2016, Fig. 18)
..... *T. (S.) biprocessa* Xue and Men
- . Finger-like processes of tergite 9 apically without small spines, only with short hairs (Men *et al.* 2016, Fig. 24) *T. (S.) similis* Men
4. Posterior margin of tergite 9 entirely with small spines 5
- . Posterior margin of tergite 9 without or only partly with small spines 6
5. Posterior margin of tergite 9 emarginated (Men *et al.* 2018, Fig. 8) *T. (S.) multidentata* Men
- . Posterior margin of tergite 9 truncated (Men *et al.* 2018, Fig. 19) *T. (S.) tergatruncata* Men
6. Posterior margin of tergite 9 forcipate; clasper and lobe of gonostylus small (Men *et al.* 2016, Figs. 6, 10) ...
..... *T. (S.) tongbiguanensis* Men
- . Posterior lateral margin of tergite 9 not forcipate; clasper and lobe of gonostylus normal or long 7
7. Lobe of gonostylus rather thick; base of clasper of gonostylus with a slender arm (Xue & Men 2016, Fig. 6)
..... *T. (S.) parvauricula* Alexander
- . Lobe of gonostylus slender; base of clasper of gonostylus with a hooked or oval arm 8
8. Gonocoxite apically hook-like with short hairs; lobe of gonostylus not black; base of clasper of gonostylus with an oval arm (Li *et al.* 2016, Figs. 1–24; Alexander 1940, plate 2, Fig. 11)
..... *T. (S.) suensoniana* Alexander
- . Gonocoxite apically not hook-like; lobe of gonostylus black; base of clasper of gonostylus with a hooked arm (Alexander 1928, plate 2, Fig. 5) *T. (S.) lackschewitziana* Alexander

***Tipula* (*Sivatipula*) *yigongensis* sp. nov.** (Figs. 1–8)

Description. ♂ ($n = 1$). Body length 16.0 mm, wing length 17.5 mm, antenna length 18.0 mm.

Head (Figs. 1, 2). Mainly brownish yellow. Occipital marking dark brown, extended to vertex. Rostrum and nasus dark yellow. Setae on head brown. Antennal scape dark yellow, pedicel pale yellow; basal flagellomeres yellow, apical flagellomeres yellowish brown, each flagellomere cylindrical, with abundant black verticils and yellow hairs. Labellum dark yellow and palpus brown with brown setae.

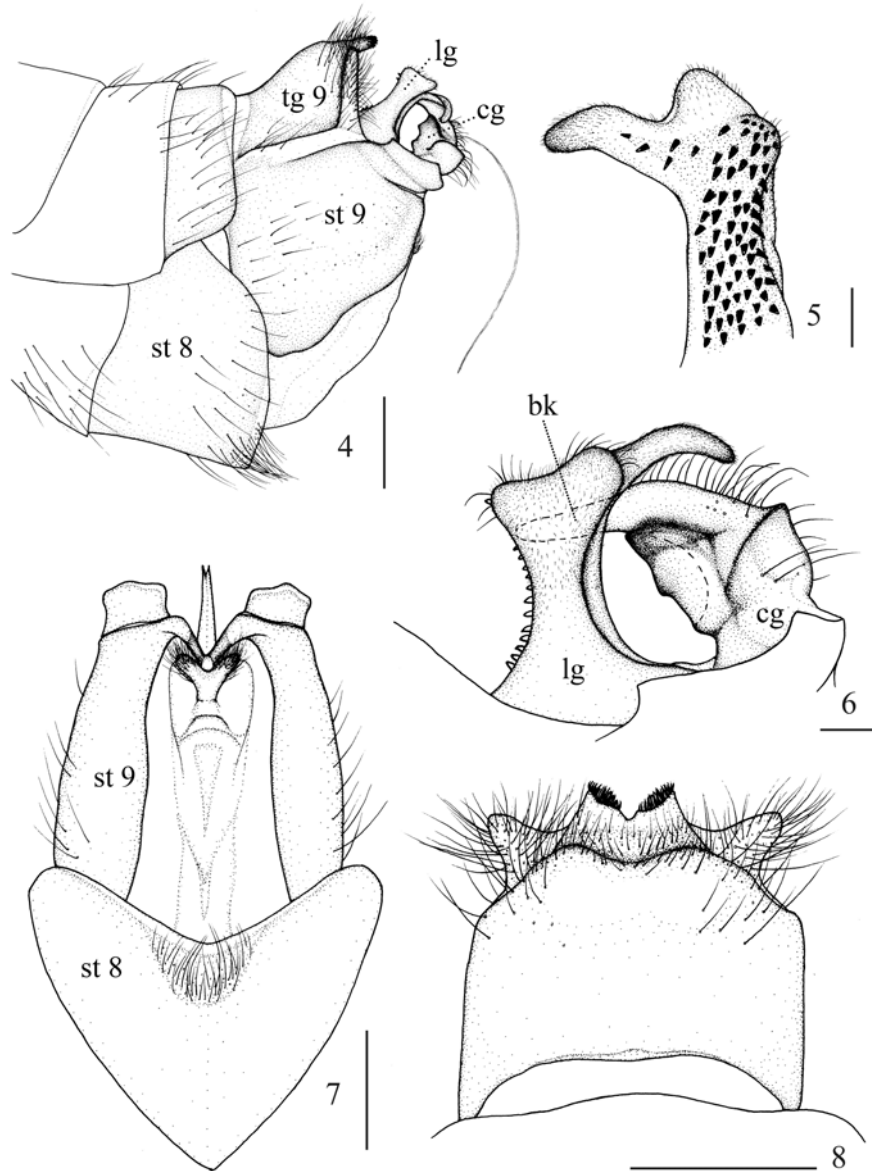


Figures 1–3. *Tipula* (*Sivatipula*) *yigongensis* sp. nov., holotype, ♂. 1. Male habitus, lateral view; 2. Head, thorax and abdomen, dorsal view; 3. Wing. Scale bars = 1.0 mm.

Abdomen (Figs. 1, 2). Mainly yellow. Tergites with pale brown lateral stripes; tergites 3–5 with brown middle stripes. Abdominal segments 6–9 brownish black. Setae on abdominal dark brown.

Hypopygium (Figs. 4–8). Posterior margin of tergite 9 with a V-shaped incision bearing short black bristles; lateral margin of tergite 9 with a pair of fleshy hairy lobes (Fig. 8); posterior margin of Sternite 8 with a small area with hairs; sternite 9 with a branched appendage (Fig. 7). Lobe of gonostylus with a slightly curly branch, mesal margin with

abundant black teeth (Figs. 5, 6). Clasper of gonostylus with long beak (Fig. 6).



Figures 4–8. *Tipula (Sivatipula) yigongensis* sp. nov., ♂. 4. Hypopygium, lateral view; 5. Lobe of gonostylus, mesal view; 6. Lobe and clasper of gonostylus, lateral view; 7. Hypopygium, ventral view; 8. Tergite nine, dorsal view. Scale bars = 0.5 mm (Figs. 4, 7, 8); 0.1 mm (Figs. 5, 6).

Holotype. ♂ (CAU), **China**, Xizang, Bomi, Yigong, 07-VI-2017, 2236 m, leg. Qicheng YANG (light trap).

Distribution. China (Xizang).

Remarks. This new species is similar to *T. (S.) parvaurecula* Alexander, 1941 from South China. In *T. (S.) parvaurecula*, the abdominal segments 8–9 are yellow; the lobe of gonostylus

has no teeth; and the clasper of gonostylus is complex with a weak appendage (Alexander 1941).

Diagnosis. Occipital marking dark brown, extended to vertex. Antennal scape dark yellow, pedicel pale yellow; basal flagellomeres yellow, apical flagellomeres yellowish brown, each flagellomere cylindrical, with abundant black verticils and yellow hairs. Abdominal segments 6–9 brownish black. Lateral margin of tergite 9 with a pair of fleshy hairy lobes. Lobe of gonostylus with a slightly curly branch, mesal margin with abundant teeth. Clasper of gonostylus with long beak.

Etymology. This species is named after the type locality Yigong.

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