



## A new genus and some new descriptions of the tribe Aemodogryllini (Orthoptera, Rhaphidophoridae, Aemodogryllinae; Aemodogryllini) from China

YANYAN QIN<sup>1</sup>, XIANWEI LIU<sup>2,3</sup> & KAI LI<sup>1,3</sup>

<sup>1</sup>School of Life Science, East China Normal University, Shanghai 200241, China. Email: [kaili@admin.ecnu.edu.cn](mailto:kaili@admin.ecnu.edu.cn)

<sup>2</sup>Shanghai Entomology Museum, Chinese Academy of Sciences, Shanghai 200032, China. E-mail: [liuxianwei2008@163.com](mailto:liuxianwei2008@163.com)

<sup>3</sup>Corresponding author

### Abstract

In the present paper, a new genus *Pseudotachycines* **gen. nov.** and five new species are identified and described: *Pseudotachycines deformis* **sp. nov.**, *Pseudotachycines inermis* **sp. nov.**, *Pseudotachycines yueyangensis* **sp. nov.**, *Pseudotachycines volutus* **sp. nov.**, *Pseudotachycines trapezialis* **sp. nov.**, *Pseudotachycines ovalilobatus* (Gorochov, 2010) **comb. nov.** a new combination is mentioned. A key to the species of *Pseudotachycines* **gen. nov.** is provided.

**Key words:** Orthoptera, Rhaphidophoridae, Aemodogryllinae, Aemodogryllini, new genus, new species, China

### Introduction

*Pseudotachycines* **gen. nov.** is proposed for the new species *Pseudotachycines deformis* **sp. nov.** from Zhejiang. It has shared characters of Aemodogryllini, but its distinctive distinguishing features are the specialized paraprocts of the male which are distinctly longer than epiproct. In addition, the sclerotized lateral lobes of male genitalia are distinctive. Also the characters of *Diestrammena* (*Gymnaeta*) *ovalilobata* (Gorochov, 2010) are almost co-incide with the generic diagnosis. Therefore, we consider it as a new combination in *Pseudotachycines* **gen. nov.**

In this article, *Pseudotachycines* **gen. nov.**, and a new combination *Pseudotachycines ovalilobatus* (Gorochov, 2010) **comb. nov.** and five new species are proposed and described: *Pseudotachycines deformis* **sp. nov.**, *Pseudotachycines inermis* **sp. nov.**, *Pseudotachycines yueyangensis* **sp. nov.**, *Pseudotachycines volutus* **sp. nov.**, *Pseudotachycines trapezialis* **sp. nov.**. All the type specimens are deposited in the Shanghai Entomology Museum, Chinese Academy of Sciences.

### *Pseudotachycines* **gen. nov.**

Type species. *Pseudotachycines deformis* **sp. nov.**, here designated.

**Description.** Body medium-sized. Vertex of head divided into conical tubercles, distinctly separated. Legs elongate and slender, fore femora about 1.3–1.8 times as long as the pronotum. Paraproct of male specialized, distinctly longer than epiproct. Dorsolateral lobes of male genitalia with a distinctly sclerotized apex.

This new genus is distinguished from *Diestrammena* (*Tachycines*) Adelung, 1902 by its specialized structure of male paraproct which distinctly longer than male epiproct and its dorsolateral lobes of male genitalia with apex being sclerotized.

## Key to the species of the genus *Pseudotachycines* gen. nov.

1	Hind femora without spines ventrally . . . . .	2
-	Hind femora with spines ventrally . . . . .	3
2	Epiphallus of male genitalia with upper apex incised. . . . .	<i>P. yueyangensis</i> sp.nov.
-	Epiphallus of male genitalia with upper apex transverse . . . . .	<i>P. inermis</i> sp. nov.
3	Inner subapical spur of hind tibiae shorter than hind metatarsus . . . . .	<i>P. deformis</i> sp. nov.
-	Inner subapical spur of hind tibiae longer than hind metatarsus. . . . .	4
4	Mid tibiae with 3 external spurs and 3 internal spurs beneath . . . . .	<i>P. volutus</i> sp. nov.
-	Mid tibiae with 2 external spurs and 1–2 internal spur(s) beneath . . . . .	5
5	Hind tibiae armed with 45–48 spines each side above . . . . .	<i>P. ovalilobatus</i> (Gorochov, 2010) comb. nov.
-	Hind tibiae armed with 64–69 spines each side above . . . . .	<i>P. trapezialis</i> sp. nov.

### *Pseudotachycines deformis* sp. nov.

(Figs. 1–6)

**Description.** Male. Body rather small. Vertex of head divided into conical tubercles, slightly separated (Fig. 1). Legs elongate and slender; fore femora about 1.6–1.8 times as long as the pronotum, beneath unarmed, internal knee lobe with a small spine, genicular lobe with 1 elongate movable spur; fore tibiae beneath with 2 external and 1 internal spur(s). Mid femora with an elongate movable spur on the internal and genicular lobe, beneath unarmed; mid tibiae beneath with 1 external spur and 1 internal spur. Hind femora beneath with 1–3 inter spines and without outer spines; hind tibiae above with 44–47 outer and inter spines respectively, arrange in groups, inner subapical spur of hind tibiae shorter than hind metatarsus (Fig. 2). Hind metatarsus with bristles beneath and an apical spine above. Male paraproct specialized, distinctly longer than epiproct (Fig. 3). Dorsolateral lobes of male genitalia with apex distinctly sclerotized and epiphallus inverted-trapezoid (Figs. 4–5).

Female. Subgenital plate nearly triangular and apically acutely pointed (Fig. 6). Ovipositor longer than the half of hind femora.

**Coloration.** Body yellowish brown with dark streaks. Face yellowish with 4 dark longitudinal bands. Legs with dark annular stripes.

**Measurements.** (length in mm) Body ♂7.0–11.0, ♀7.5–12.0; pronotum ♂3.0–5.0, ♀4.5–5.5; fore femora ♂5.5–8.0, ♀6.5–8.0; hind femora ♂11.5–12.5, ♀12.0–18.0; ovipositor 7.5–11.0.

**Material examined.** Holotype, 1♂, Xitianmu Mountain, Zhejiang, alt. 350m, 2009.X.14–15, collected by Liu Xian-Wei *et al.*; paratype, 9♂♂, same data as holotype; 16♀♀, same data as holotype.

**Distribution.** China (Zhejiang).

**Diagnosis.** This species is rather similar to *Pseudotachycines inermis* sp. nov., but differences from the latter in that: hind femora beneath armed with spines.

### *Pseudotachycines inermis* sp. nov.

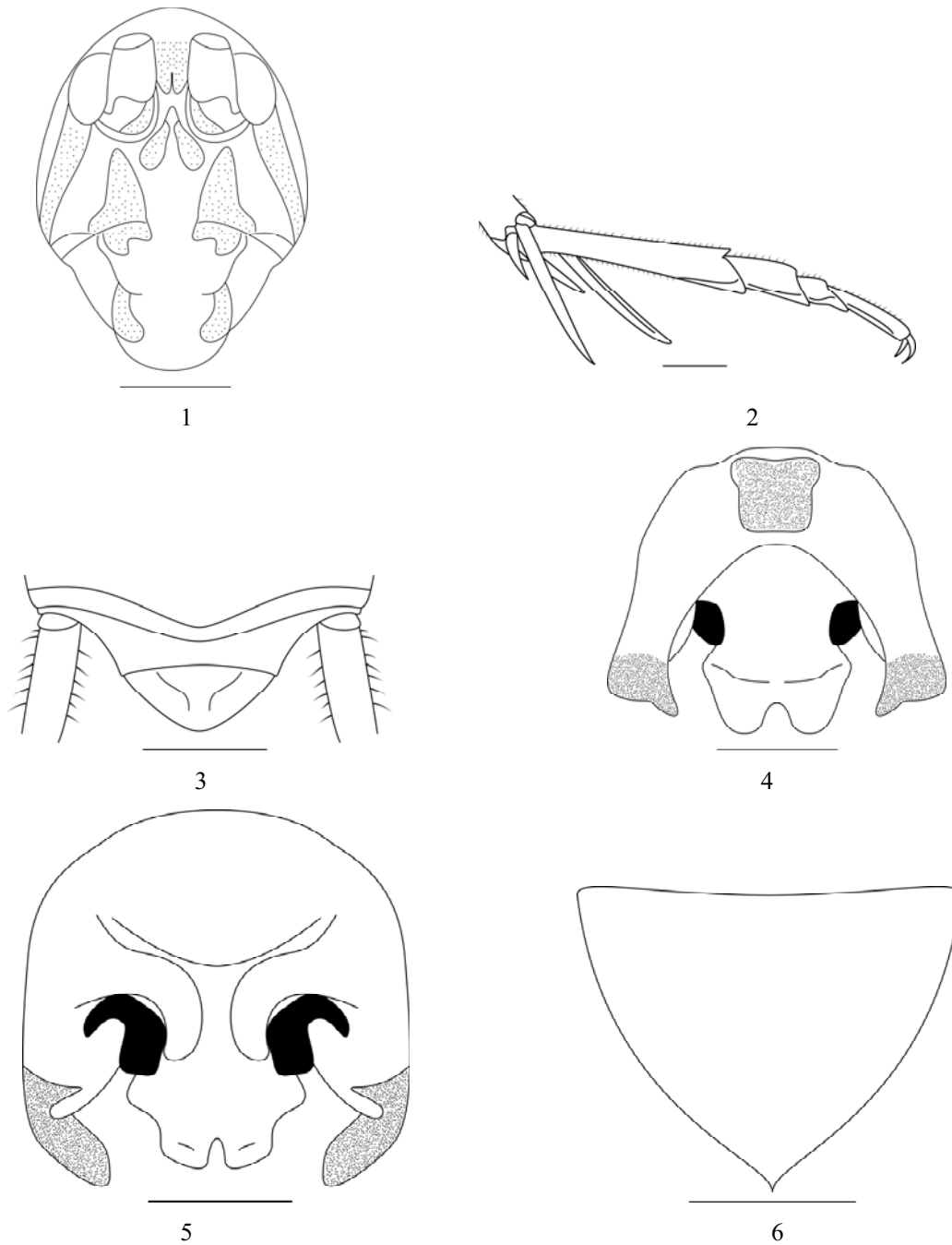
(Figs. 7–9)

**Description.** Male. Body rather small. Vertex of head divided into conical tubercles. Legs elongate and slender; fore femora about 1.6 times as long as the pronotum, beneath unarmed, internal knee lobe with a small spine, genicular lobe with 1 elongate movable spur; fore tibiae beneath with 1 external spur, without internal spur. Mid femora with an elongate movable spur on the internal and genicular lobe, beneath unarmed; mid tibiae beneath with 1 internal spur and 1 external spur. Hind femora without spines beneath; hind tibiae above with 65–70 spines both side respectively, arrange in groups, inner subapical spur of hind tibiae almost equal to the length of hind metatarsus. Hind metatarsus keeled beneath. Male paraproct longer than epiproct (Fig. 7). Male genitalia with an acute apex of dorsolateral lobes and distinctly sclerotized, lateral corium of middle lobes of male genitalia rather small, the epiphallus nearly rectangular (Figs. 8–9).

Female. Unknown.

**Coloration.** Body black. Face light with 4 black longitudinal bands. Legs with distinct darkish stripes.

**Measurements.** (length in mm) Body ♂7.0; pronotum ♂4.0; fore femora ♂6.5; hind femora ♂13.5.

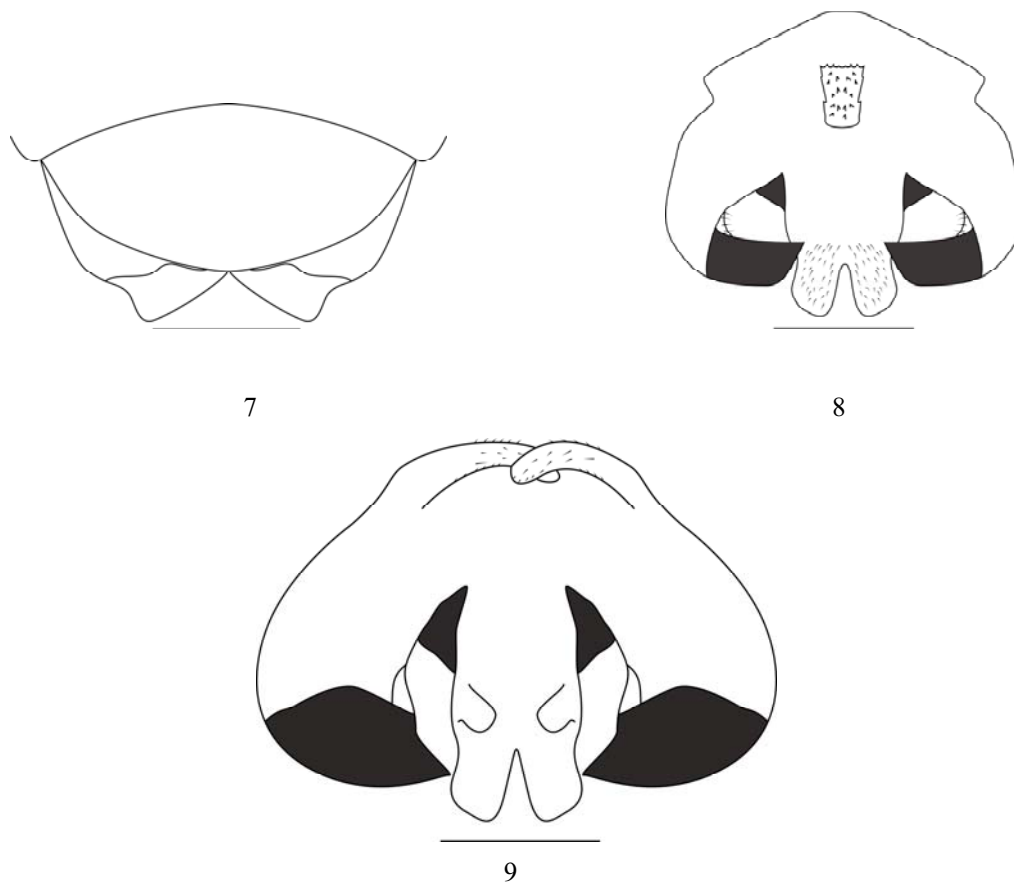


**FIGURES 1–6.** *Pseudotachycines deformis* sp. nov.. 1. Head of male, frontal view; 2. Hind metatarsus, lateral view; 3. Abdominal apex, dorsal view; 4. Male genitalia, dorsal view; 5. Male genitalia, ventral view; 6. Female subgenital plate, ventral view; scale bars=1mm.

**Material examined.** Holotype, 1♂, Jiugongshan, Xianning, Hubei, alt. 1200–1250m, 2016.VII.30, collected by Hu & Liu leg..

**Distribution.** China (Hubei).

**Diagnosis.** This species distinguishes from *Pseudotachycines yueyangensis* sp. nov. in the epiphallus of male genitalia with upper apex transverse.



**FIGURES 7–9.** *Pseudotachycines ineremis* sp. nov.. 7. Abdominal apex, dorsal view; 8. Male genitalia, dorsal view; 9. Male genitalia, ventral view; scale bars=1mm.

***Pseudotachycines yueyangensis* sp. nov.**  
(Figs.10–12)

**Description.** Male. Body small to medium sized. Vertex of head divided into conical tubercles. Legs elongate and slender; fore femora about 1.6 times as long as the pronotum, beneath unarmed, internal knee lobe with a small spine, genicular lobe with 1 elongate movable spur; fore tibiae beneath with 2 external spurs and 1 internal spur. Mid femora with an elongate movable spur on the internal and genicular lobe, beneath unarmed; mid tibiae beneath with 1 internal spur and 1 external spur. Hind femora without spines beneath; hind tibiae above with 61–65 inter and outer spines respectively, arrange in groups, inner subapical spur of hind tibiae slightly shorter than hind metatarsus. Hind metatarsus keeled beneath. Male paraproct longer than epiproct. Male genitalia with dorsolateral lobes almost completely sclerotized (Figs. 10–11). Epiphallus nearly triangular and the upper apex with a shallow incision (Fig. 10).

Female. Subgenital plate nearly triangular with slightly transversed apex (Fig. 12). Ovipositor almost longer than the half of hind femora.

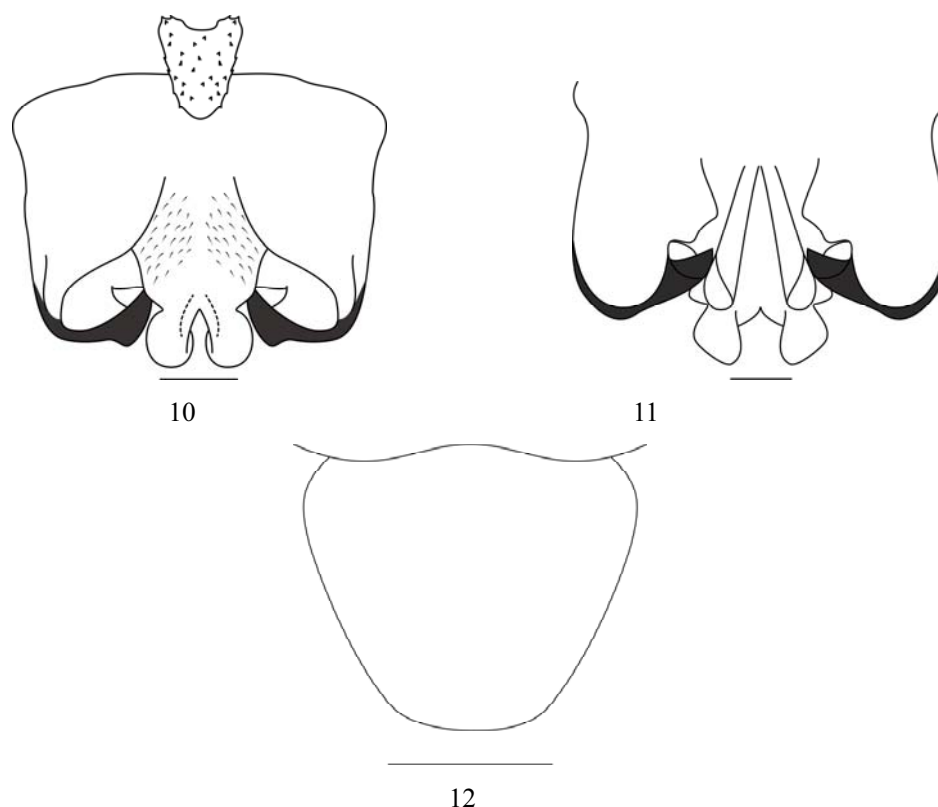
**Coloration.** Body brownish. Tergum dark brown, legs light brown. Hind femora with annular dark stripes.

**Measurements.** (length in mm) Body ♂8.0–10.0, ♀8.0–10.0; pronotum ♂4.5–5.5, ♀4.0–5.5; fore femora ♂7.0–7.5, ♀6.0–10.0; hind femora ♂13.0–15.0, ♀13.5–19.5; ovipositor 7.0–9.0.

**Material examined.** Holotype, 1♂, Forest park of Fushou Mountain, Yueyang, Hunan, alt. 1079m, 2016-X-18-26, collected by Jiang *et al.*; paratype, 6♂♂, 6♀♀, Forest park of Fushou Mountain, Yueyang, Hunan, alt. 1079m, 2016-X-18-26, collected by Jiang *et al.*.

**Distribution.** China (Hunan).

**Diagnosis.** This species distinguishes from *Pseudotachycines inermis* **sp. nov.** in the epiphallus of male genitalia with upper apex being incised.



**FIGURES 10–12.** *Pseudotachycines yueyangensis* **sp. nov.**. 10. Male genitalia, dorsal view; 11. Male genitalia, ventral view; 12. Female subgenital plate, ventral view; scale bars=1mm.

***Pseudotachycines volutus* sp. nov.**

(Figs. 13–17)

**Description.** Male. Body medium sized. Vertex of head divided into conical tubercles, distinctly separated. Legs elongate and slender; fore femora about 1.3 times as long as the pronotum, beneath unarmed, internal knee lobe with a small spine, genicular lobe with 1 elongate movable spur; fore tibiae beneath with 3 external and 3 internal spurs. Mid femora with an elongate movable spur on the internal and genicular lobe, beneath unarmed; mid tibiae beneath with 2 external spurs and 1 internal spur. Hind femora beneath with 1–4 inter spines and without outer spines; hind tibiae above with 55–58 outer and inter spines respectively, arrange in groups, inner subapical spur of hind tibiae slightly longer than hind metatarsus. Hind metatarsus keeled beneath and with an apical spine above (Fig. 13). Male paraproct distinctly longer than epiproct (Fig. 14). Dorsolateral lobes of male genitalia sclerotized and elongate (Figs. 15). Epiphallus of male genitalia strap-shaped (Fig. 16).

Female. Apex of subgenital plate deeply concaved (Fig. 17). Ovipositor longer than the half hind femora.

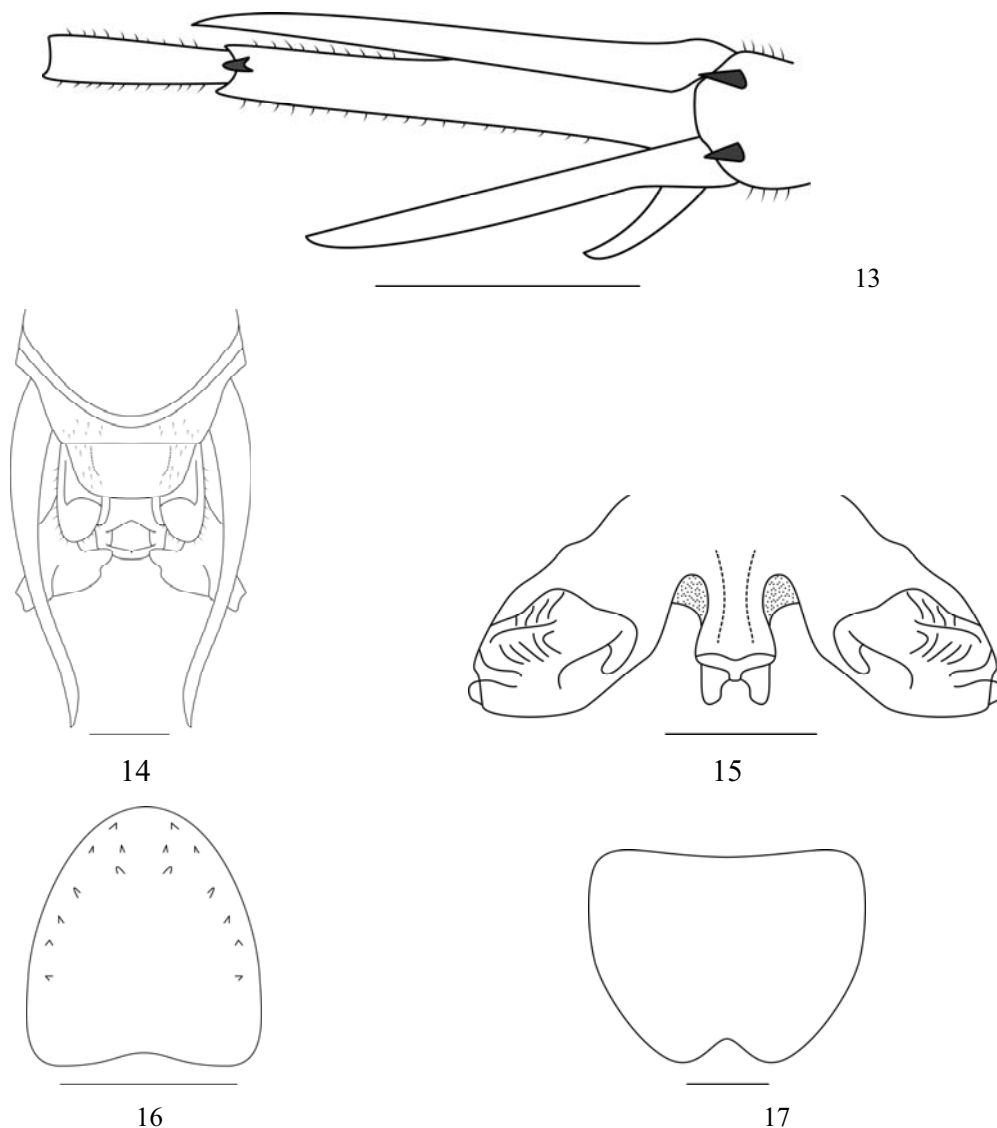
**Coloration.** Body darkish black, some individuals yellowish. Abdomen, antenna and face light brown. Fore tibiae and mid tibiae with dark annular stripes.

**Measurements.** (length in mm) Body ♂10.0–13.0, ♀11.0–12.5; pronotum ♂5.5–6.0, ♀6.0; fore femora ♂7.5–8.0, ♀7.5–8.0; hind femora ♂16.5–17.5, ♀17.5; ovipositor 12.0.

**Material examined.** Holotype, 1♂, Forest park of Fushoushan, Hunan Yueyang, alt. 1079m, 2016-IX-18-26, collected by Jiang *et al.*; paratype, 1♂, 3♀♀, same data as holotype; 2♂♂, Tianmu Mountain, Zhejiang, alt. 1100m, 2012.VIII.31, collected by Liu Xian-Wei *et al.*

**Distribution.** China (Hunan, Zhejiang).

**Diagnosis.** This species distinguishes from *Pseudotachycines trapezialis* **sp. nov.** and *Pseudotachycines ovalilobatus* (Gorochov, 2010) **comb. nov.** in the mid tibiae with 3 external spurs and 3 internal spurs beneath, dorsolateral lobes of male genitalia much longer.



**FIGURES 13–17.** *Pseudotachycines volutus* **sp. nov.**. 13. Hind metatarsus, lateral view; 14. Abdominal apex, dorsal view; 15. Male genitalia, dorsal view; 16. Epiphallus of male genitalia; 17. Female subgenital plate, ventral view; scale bars=1mm.

***Pseudotachycines trapezialis* **sp. nov.****

(Figs. 18–20)

**Description.** Male. Body medium sized. Vertex of head divided into conical tubercles. Legs elongate and slender; fore femora about 1.4 times as long as the pronotum, beneath unarmed, internal knee lobe with a small spine, genicular lobe with 1 elongate movable spur; fore tibiae beneath with 2 external and 2 internal spurs. Mid femora with an elongate movable spur on the internal and genicular lobe, beneath unarmed; mid tibiae beneath with 2 external and 1 internal spur(s). Hind femora beneath with 2 inter spines and without outer spines; hind tibiae above with 64–69 outer and inter spines respectively, arrange in groups, inner subapical spur of hind tibiae slightly longer than hind metatarsus. Hind metatarsus keeled beneath and with an apical spine above. Male epiproct shorter than paraproct (Fig. 18). Dorsolateral lobes of male genitalia sclerotized and epiphallus trapezoidal (Fig. 19).

Female. Subgenital plate subquadrate, both side of the base projected and apex acutely pointed (Fig. 20). Ovipositor longer than the half of hind femora.

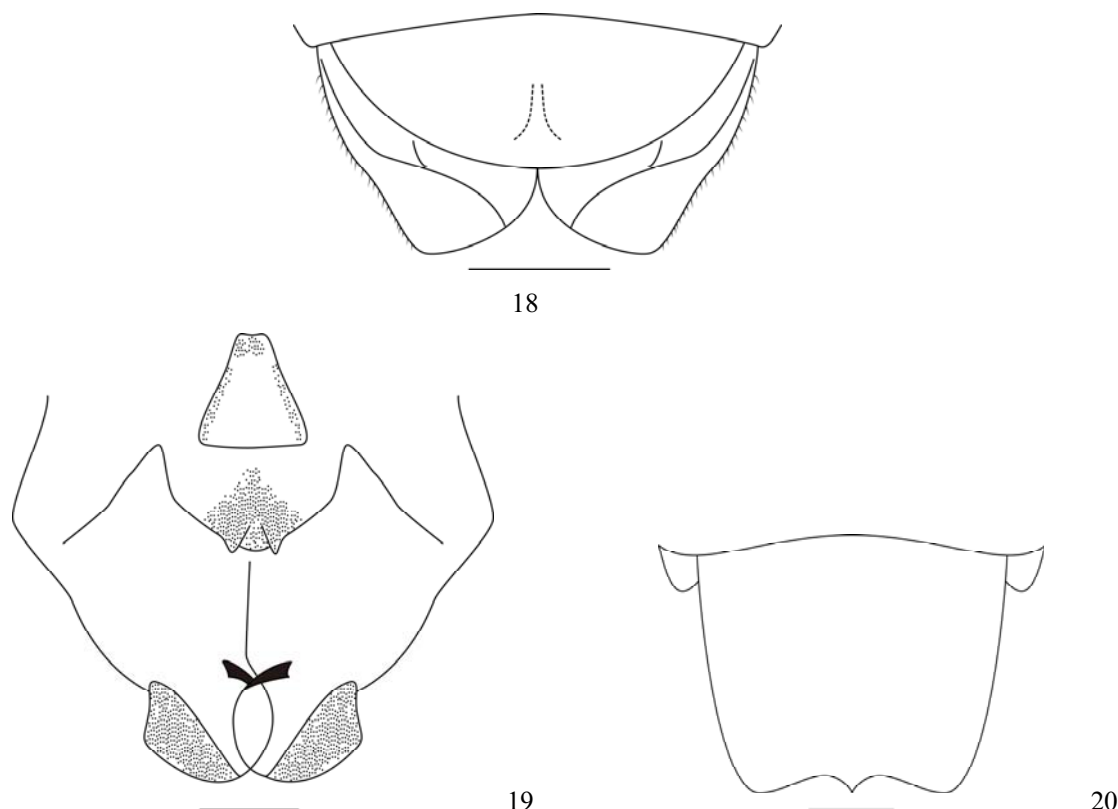
**Coloration.** Body darkish brown. Face and legs light brown.

**Measurements.** (length in mm) Body ♂10.0, ♀14.0; pronotum ♂5.5, ♀6.5; fore femora ♂7.5, ♀6.5–8.0; hind femora ♂15.0, ♀22.0; ovipositor 12.5.

**Material examined.** Holotype, 1♂, Funiu Mountain, Henan, alt. 1400–1700m, 2009.VIII.2, collected by Zhu Wei-Bing; paratype, 1♂, same data as holotype.

**Distribution.** China (Henan).

**Diagnosis.** This species is closely related to *Pseudotachycines ovalilobatus* (Gorochov, 2010) **comb. nov.**, but differences from the latter in that: hind tibiae armed with 64–69 spines each side above and subgenital plate of female subquadrate.



**FIGURES 18–20.** *Pseudotachycines trapezialis* sp. nov.. 18. Abdominal apex, dorsal view; 19. Male genitalia, dorsal view; 20. Female subgenital plate, ventral view; scale bars=1mm.

***Pseudotachycines ovalilobatus* (Gorochov, 2010) comb. nov.**

(Figs. 21–22)

*Diestrammena* (*Gymnaeta*) *ovalilobata* : Gorochov, 2010: 206, 11–12.

**Redescription.** Male. Body medium sized. Fore tibiae with 2 internal and 2 external spurs. Mid tibiae with 1–2 internal spur(s) and 1–2 external spur(s). Hind tibiae armed with spines of 14–15 groups above, every group including 3–6 spines. Subapical spur of hind tibiae longer than hind metatarsus. Male genitalia without paired epiphallus, proximal part slightly narrower and apex with shallow incision; membranous median dorsal lobe with sclerotized lateral plates (Fig. 21). Apical part of each dorsolateral membranous lobe of genitalia slightly sclerotized and the apex directed upwards.

Female. Subgenital plate with transversed apex and the lateral basal part prominent (Fig. 22). Ovipositor longer than the half hind femora.

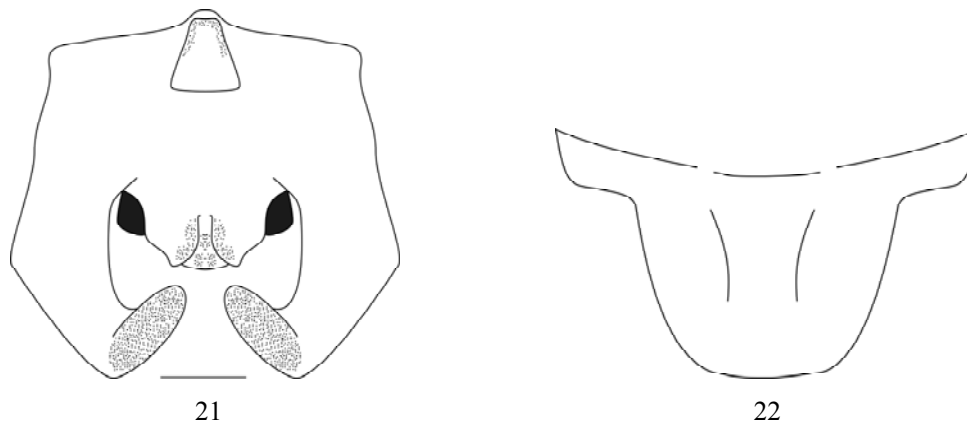
**Coloration.** Body brown. Head, abdomen, antenna and cerci light brown. Legs without distinct stripes.

**Measurements.** (length in mm) Body ♂12.0–17.0, ♀14.0–16.0; pronotum ♂5.0–5.5, ♀5.5–6.0; fore femora ♂7.5–8.5, ♀8.0–9.0; hind femora ♂15.0–17.0, ♀16.0–18.0; ovipositor 11.5–12.5.

**Material examined.** 1♂, Hubei, Shennongjia, 1983-VIII-19, collected by Jin Gen-Tao, Liu Zu-Yao, Zheng Jian-Zhong.

**Distribution.** China (Hubei).

**Diagnosis.** This species is closely related to *Pseudotachycines trapezialis* sp. nov., but differences from the latter in that: hind tibiae armed with 45–48 spines each side above.



**FIGURES 21–22.** *Pseudotachycines ovalilobatus* (Gorochov, 2010) **comb. nov.** 21. Male genitalia, dorsal view; 22. Female subgenital plate, ventral view (copy from Gorochov, 2010); scale bars=1mm.

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