Polypedilum (Tripodura) cypellum sp. nov. (Diptera: Chironomidae) from Xishan Island, Zhejiang Province

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Abstract: *Polypedilum (Tripodura) cypellum* sp. nov. from Xishan Island, Zhejiang Province is described. The new species is most similar to *P*. (*T*.) *harteni* Andersen & Mendes, 2010 morphologically. It can be distinguished from the known species in this genus by the goblet-shaped superior volsella. Diagnostic characters of the male imago (wing, fore tibial apex, hypopygium and superior volsella) are illustrated.

Key words: Nematocera; Culicoidea; *Polypedilum*; taxonomy CLC number: Q969.44⁺2.6 Document code: A Article ID: 1000-7482(2014)02-0119-04

浙江西闪岛三突多足摇蚊亚属一新种(双翅目:摇蚊科)

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摘要: 记述采自浙江省西闪岛的三突多足摇蚊亚属 1 新种:杯状三突多足摇蚊 Polypedilum (Tripodura) cypellum sp. nov.。该新种与哈氏三突多足摇蚊 P. (T.) harteni Andersen & Mendes, 2010 相似,区别于本亚属其它已知种的主要特征是具高脚杯状的上附器。文中提供了雄成虫的翅、前足胫节端部、生殖节、上附器等特征图。

关键词:长角亚目;蚊总科;多足摇蚊属;分类

Introduction

Polypedilum Kieffer is a cosmopolitan genus, occurring in all zoogeographical regions except Antarctica. According to Sæther *et al.* (2010), this genus contains eight subgenera: Polypedilum sensu strictus Kieffer, 1913; Pentapedilum Kieffer, 1913; Tripedilum Kieffer, 1921; Kribionympha Kieffer, 1921; Tripodura Townes, 1945; Uresipedilum Oyewo & Sæther, 1998; Cerobregma Sæther & Sundal, 1999 and Probolum Andersen & Sæther, 2010. The subgenus Tripodura was established by Townes in 1945, with Polypedilum (Tripodura) simulans Townes, 1945 as type species. To date, more than 140 species are described

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worldwide; 9 species are known from China (Qi et al. 2013).

A new and morphologically clearly different species was found in the Xishan Island of Zhejiang Province by Xin QI in May 2013. The species is named *Polypedilum* (*Tripodura*) *cypellum* sp. nov. and described below.

Material and methods

The morphological nomenclature follows Sæther (1980) and the abbreviations of parts measured follow Qi *et al.* (2012). The material examined was mounted on slides, following the procedure outlined by Sæther (1969). The type specimen is deposited in the College of Life Science, Taizhou University, China.

Description

Polypedilum (Tripodura) cypellum sp. nov. (Figs. 1-8)

Diagnostic characters. The male imago can be distinguished from the known species of this genus by the following combination of characters: superior volsella goblet-shaped, hollow, covered with microtrichia and 19 setae on distal parts of the outer margin; without lateral projections; terminal scale of fore tibia 43 μ m long, rounded, without spur; tergite IX with 5 strong median setae and 6 setae at base of anal point.

Male (n = 1).

Total length 2.58 mm. Wing length 1.56 mm. Total length/wing length 1.65. Wing length/ profemur length 2.07.

Coloration. Head brown. Thorax brown. Legs pale with darker rings: femora and tibiae with two rings; each of fore ta_{1-5} pale brown; mid ta_{1-5} with one ring. Wing with dark spots. Abdomen brown.

Head. AR 0.80. Temporal setae 11 including 3 inner verticals, 7 outer verticals and 1 postorbital. Clypeus with 20 setae. Tentorium 93 μ m long, 18 μ m wide. Palpomere lengths (in μ m): 25; 25; 100; 120; 150. Palpomere 5th/3rd: 1.50.

Thorax. Acrostichals 14; dorsocentrals 18; prealars 3. Scutellum with 9 setae.

Wing (Fig. 1). VR 1.16. Brachiolum with 1 setae, R with 18, R_1 with 10, R_{4+5} with 14 setae, M bare. Squama with 3 setae. Wing with dark spots.

Legs. Terminal scale of fore tibia 43 μ m long, rounded, without spur (Fig. 2). Mid and hind tibiae with closely approximated fused combs, each comb 20–25 μ m long; spur on mid tibiae 28 μ m long, spur on hind tibiae 28 μ m long. Width at apex of fore tibia 48 μ m, of mid tibia 50 μ m, of hind tibia 63 μ m. Lengths (in μ m) and proportions of legs in Table 1.

Table 1. Lengths (in µm) and proportions of legs of *Polypedilum (Tripodura) cypellum* sp. nov.

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV
p ₁	750	500	775	450	375	250	150	1.55	1.65	1.61
p_2	825	625	325	175	125	88	75	0.52	3.83	4.46
p ₃	825	725	-	-	-	-	-	-	-	-

Hypopygium (Fig. 3). Tergite IX with 5 strong median setae and 6 setae at base of anal point. Laterosternite with 4 setae. Anal point broad, apically rounded, 25 μ m wide in apex, 25 μ m wide in base, 63 μ m long, without lateral projections. Phallapodeme 33 μ m long. Transverse sternapodeme 58 μ m long. Gonocoxite 444 μ m long. Superior volsella 75 μ m long, 68 μ m wide, goblet-shaped, hollow; covered with microtrichia, with 19 setae on distal parts of the outer margin (Figs. 4, 5). Inferior volsella 175 μ m long, digitiform, apex narrowed, with 22 long setae. Gonostylus 450 μ m long, apex narrowed, with 10 long setae along inner margin. HR 0.99. HV 1.37.



Figures 1–5. *Polypedilum (Tripodura) cypellum* sp. nov. ♂. 1. Wing; 2. Fore tibial apex, dorsal view; 3. Hypopygium; 4. Superior volsella, dorsal view; 5. Superior volsella, ventral view.

Holotype. \mathcal{O} , **China:** Zhejiang, Zhoushan City, Putuo District, Dengbu Village, Xishan Island, 29°89.38'N, 122°30.78'E, 30-V-2013, sweeping method, Xin QI.

Etymology. The species epithet is from the Latin "*cypellum*" which means "goblet", referring to the goblet-shaped superior volsella.

Distribution. This specimen was collected on the sea island of Zhejiang Province, Oriental China.

Remarks. The shape of the superior volsella of P. (T.) cypellum sp. nov. is characteristic of this subgenus. This new species closely resembles P. (T.) harteni Andersen & Mendes,

2010 in the structure of hypopygium and the wing spots; the main differences between these two species are given in Table 2.

	P. (T.) cypellum	P. (T.) harteni		
Median setae of tergite IX	5	2–11		
Anal point	With 6 setae at base	With 2 rows of short dorsal setae (each row with 8–10 setae)		
Superior volsella	Goblet-shaped	Pediform		
Gonostylus	Slender, apex narrowed	Apex swollen		

Table 2. Differences between P. (T.) cypellum sp. nov. and P. (T.) harteni Andersen & Mendes

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