

FIRST ORIENTAL *STEMPELLINELLA* SPECIES FROM CHINA (DIPTERA: CHIRONOMIDAE: TANYTARSINI)

Guo Y. & Wang X., 2005. First Oriental *Stempellinella* species from China (Diptera: Chironomidae: Tanytarsini). – Tijdschrift voor Entomologie 148: 27-30, figs. 1-6, tables 1-2. [ISSN 0040-7496]. Published 1 June 2005.

This article presents the first adult male records of the tanytarsini genus *Stempellinella* in the Oriental Region. Two new species, *S. apicula* sp. n. and *S. brevilamellae* sp. n. from southern China are described as adult males. A key to male imagines of all species in *Stempellinella* is given.

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The tanytarsine genus *Stempellinella* was erected by Brundin (1947), with *Stempellinella saltrum* (Goetghebuer, 1921) as type species. Until now, the genus has eight recorded species from the Holarctic region. Ashe & Cranston (1990) list five species in their Palaeartic catalogue. Among these, *S. cuneipennis* (Edwards, 1929) has only been recorded as female. *Stempellinella tamaseptima* from Japan was first described as *Tanytarsus* by Sasa (1980), and was later transferred to *Stempellinella* by Kobayashi (1990). *Stempellinella reissi* was described by Casas & Vilchez-Quero (1991) from Southern Spain, and *S. leptoceloides* from Ontario, Canada by Webb (1969). The latter species was originally placed in *Stempellina* but later examination of the type material confirms the placement in *Stempellinella* (T. Ekrem pers. comm.) In this paper, two new species from Southern China (Oriental Region) are described.

METHODS, TERMINOLOGY AND MATERIAL

The morphological nomenclature follows Sæther (1980) with the additions and corrections given by Sæther (1990). The material examined was mounted on slides following the procedure outlined by Sæther (1969). Measurements are given as ranges followed by a mean when there are two or more measurements, followed by the number measured (n) in parentheses. Type specimens are deposited in the Department of Biology, Nankai University, China (BDN).

Stempellinella apicula sp. n. (figs. 1-3)

Type material. – Holotype ♂, CHINA: Yunnan Province: Dali County: Zhonghe Village (26°10'N, 101°25'E), 2300 m., 22.v.1996. (BDN 11275). Light trap, X. Wang.

Diagnostic characters

The imago male can be distinguished from known species of the genus by the following combination of characters: Gonostylus tapering to pointed apex; median volsella with about 12-13 lamellate setae on a stem; 7 clusters of spinules between anal crests; frontal tubercle triangular.

Etymology

From Latin, *apicula*, point, tip; noun referring to the new species having a tapering gonostylus with pointed apex.

Description

Male imago (n=1). – Total length 2.20mm; wing length 1.06mm. Wing length / wing width 2.70; total length / wing length 2.07; wing length / length of profemur 2.65. Ground coloration yellowish brown, with separated brown vittae. Abdomen pale. Eyes lightly brown at front and dark posterior.

Head. – Eyes bare. Antenna (fig. 1) with 10 flagellomeres, groove beginning at the base of flagellomere 3; AR 0.50. Ultimate flagellomere 180µm long. Tem-

Table 1. *Stempellinella apicula* sp. n. male: Lengths (in μm) and proportion of legs.

	fe	ti	ta1	ta2	ta3	ta4	ta5	LR
P1	400	272	384	240	176	144	64	1.41
P2	464	328	190	88	70	46	40	0.58
P3	520	384	256	152	120	80	56	0.67

poral setae 9 including 3 inner verticals, 4 outer verticals and 2 postorbitals. Frontal tubercle triangular, $14\mu\text{m}$ long. Clypeus with 7 setae. Tentorium $60\mu\text{m}$ long and $14\mu\text{m}$ wide. Palpomere lengths (in μm): 56, 20, 52, 80, 120.

Wing (fig. 2). – Membrane brown, macrotrichia on membrane: r_{4+5} 136; m_{1+2} 175; m_{3+4} 40; an 56. Vein M bare; number of setae on remaining veins: R 16; R_1 15; R_{4+5} 29; M_{1+2} 36; M_{3+4} 19; Cu_1 10; Pcu 36; An 22. Anal lobe absent. VR 1.71 and Cu length $560\mu\text{m}$. R2+3 absent.

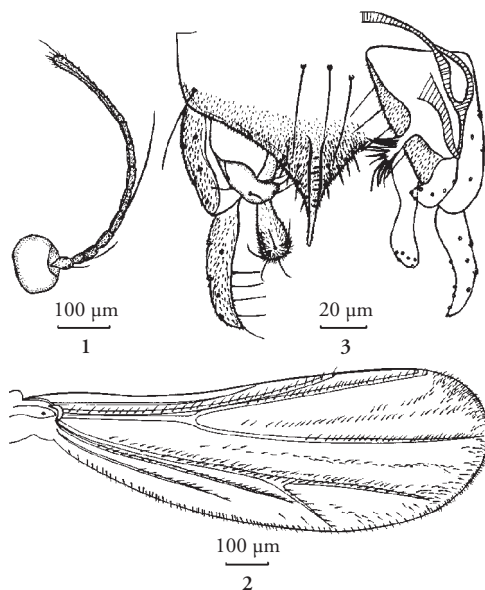
Thorax. – Acrostichals 8; dorsocentrals 6; scutellars 6; prealars 1.

Legs. – Front tibial spur $10\mu\text{m}$. The combs of middle tibia composed of 10 and 10 free teeth, of hind tibia composed of 12 and 10 free teeth. Only one of both combs with a spur. The spur of middle tibia $26\mu\text{m}$ and hind tibia $30\mu\text{m}$ long. Lengths (in μm) and proportion of legs are given in table 1.

Hypopygium (fig. 3). – Anal point $44\mu\text{m}$ long, $10\mu\text{m}$ wide at the base, with a pair of long anal crests with 7 spines in between. 3 long median tergite setae, 12 apical tergite setae on both sides of anal point. Phallapodeme $60\mu\text{m}$ long. Transverse sternapodeme $56\mu\text{m}$ long, without oral projections. Gonocoxite $80\mu\text{m}$ long. Superior volsella roughly oblong with rounded apex and strongly bent in a right angle in apical $\frac{1}{3}$, with 2 apical setae, one seta in inner inflection zone and 3 along dorsolateral margin. Median volsella $40\mu\text{m}$ long, with 6 apically curved lamellae. Inferior volsella $54\mu\text{m}$ long, extending well beyond the base of gonostylus. Gonostylus $50\mu\text{m}$ long. HR 1.60; HV 4.40.

Remarks

The new species resembles *S. reissi* Casas & Vilchez-Quero, 1991 from Spain in the shape of the bent superior volsella, which is typical for these two species. However, the following characters will separate the two species: *S. apicula* has gonostyli with pointed apices, while *S. reissi* has rounded apices; *S. apicula* has a median volsella with fewer lamellae (12-13 compared to more than 20); *S. apicula* has fewer (7 compared to 12-14) and differently shaped spinules in between the anal point crests; and the frontal tubercles are triangular in *S. apicula* but conical in *S. reissi*.



Figs. 1-3. *Stempellinella apicula* sp. n. male imago. – 1, Antenna; 2, Wing; 3, Hypopygium.

Distribution

The present species was collected by sweep-net along a small brook in Zhonghe Village, Dali County, Yunnan Province (Oriental region).

Stempellinella brevilamellae sp. n.

(figs. 4-6)

Type material. – Holotype ♂, CHINA: Sichuan Province, Yajiang County, Sandaoqiao, (30°02'N, 101°00'E). 2460m, (BDN 11611), 9.vi.1996, light trap, X. Wang. Paratypes: 3 ♂, as holotype.

Diagnostic characters

The present species differs from other species in the genus by the following characters: R_{2+3} indistinct; superior volsella with medially directed, pointed apex; numerous orally directed spinules and microtrichae from tergite IX to anal point, arranged in a semicircle.

Table 2. *Stempellinella brevilamellae* sp. n. male: lengths (in μm) and proportions of legs.

	fe	ti	ta1	ta2	ta3	ta4	ta5	LR
P1	424-470 442	264-296 280	480-520 496	264-296 280	200-232 213	152-168 160	64-72 69	1.65-1.86 1.78
P2	480-536 512	360-400 387	232-264 249	104-120 109	80-88 83	48-72 61	40-46 42	0.63-0.66 0.64
P3	544-600 581	408-480 443	320-352 341	168-192 181	136-144 141	80-96 91	48-60 54	0.73-0.80 0.77

Etymology

From Latin *brevis*, short and *lamellae*, thin plates; a noun referring to the short lamellae of the median volsella, which is unique in the genus.

Description

Male imago (n=4 except when stated otherwise). – Total length 1.68-2.20, 1.94mm; wing length 1.14-1.28, 1.23mm. Wing length / wing width 2.82-3.05, 2.90; total length / wing length 1.39-1.77, 1.58; wing length / length of profemur 2.63-2.92, 2.73. Coloration yellowish brown, with separated dark brown vittae. Eyes pale brown anteriorly and dark posteriorly.

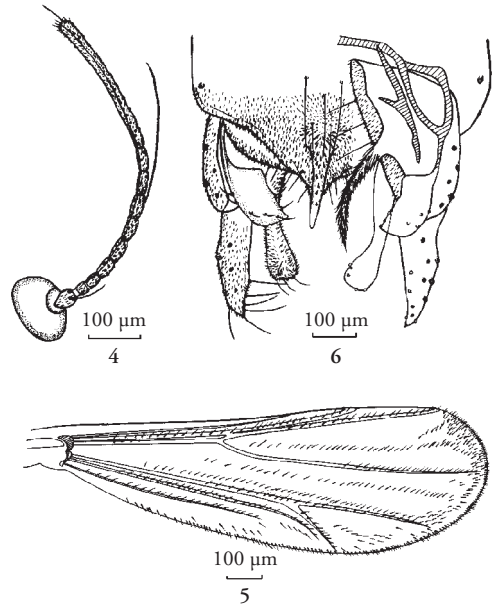
Head. – Eyes bare. Antenna (fig. 4) with 10 flagellomeres; groove beginning in the base of flagellomere 3; AR 0.72-0.80, 0.76, ultimate flagellomere 260-288, 281 μm long. Temporal setae 7-9, 8 including 3 inner verticals, 2-3, 3 outer verticals and 2-4, 3 postorbitals. Frontal tubercles 14-18 μm long, columniform with rounded apex. Clypeus with 10-12, 11 setae. Tentorium 80-90, 86 μm long, width 18-22, 20 μm . Palpomere lengths (in μm): 60-70, 65; 24-26, 25; 52-70, 60; 74-84, 81; 118-130, 123.

Wing (fig. 5). – Wing brown. Membrane setae: r_{4+5} 127-161, 143; m_{1+2} 156-187, 174; m_{3+4} 40-50, 46; cu 25-36, 30; an 45-68, 58. Vein M bare, number of setae on remaining veins: R 19-21, 20; R_1 15-20, 18; R_{4+5} 20-27, 23; M_{1+2} 28-32, 30; M_{3+4} 11-20, 17; Cu 9-15, 13; Cu_1 8-11, 10; Pcu 28-40, 33; An 21-25, 23. Anal lobe absent. VR 1.46-1.69, 1.57 and Cu length 640-744, 683 μm . R_{2+3} indistinct.

Thorax. – Acrostichals 7-8, 7; dorsocentrals 5-7, 6; scutellars 3-6, 5; prealars 1-2, 1.

Legs (n=3). Front tibia spur 12-20, 15 μm . The combs of middle tibia composed of 10-12, 11 and 9-11, 10 free teeth, of hind tibia composed of 10-14, 12 and 8-9, 8 free teeth. Only one of both combs with a spur. The spur of middle tibia is 28-30, 29 μm and hind tibia 24-30, 28 μm long. Lengths (in μm) and proportion of legs are given in table 2.

Hypopygium (fig. 6). – Posterior part of anal tergite triangular. Anal point 40-50, 44 μm long, 14-16,



Figs. 4-6. *Stempellinella brevilamellae* sp. n. male imago. – 4, Antenna; 5, Wing; 6, Hypopygium.

15 μm at the base, with numerous orally directed spinules and microtrichae from tergite IX almost to apex of anal point, spinules on tergite arranged in a semicircle. Tergite IX with 5-6 long median tergite setae, and 8-11, 9 apical tergite setae on both sides of anal point. Phallapodeme 60-70, 65 μm long. Transverse sternapodeme 48-50, 50 μm long, without oral projections. Gonocoxite 80-86, 84 μm long. Superior volsella kidney-shaped, with a pointed inner apex, with 2 inner and 1-3, 2 posterior setae, and 3-4, 3 dorsal setae. Median volsella 46-52, 49 μm long and slender, with 4-6, 5 long curved setae and numerous fine simple setae. Inferior volsella 60-70, 68 μm long, extending well beyond the base of gonostylus. Gonostylus 40-50, 45 μm long. HR 1.72-2.00, 1.90; HV 3.95-4.68, 4.35.

Remarks

Among the known species of the genus, the new species resembles *S. tamaseptima* (Sasa, 1980) from Japan and *S. leptocelloides* (Webb, 1969) from Canada. However, *S. brevilamellae* can be separated from both of these by the forward directed spinules on the anal point, the spinules and microtrichiae arranged in a semicircle on the anal tergite, and the short lamellae on the long median volsella. It can also be separated *S. tamaseptima* by the longer wing length (1.14-1.28 compared to 0.92-0.95).

Distribution

The present species is only known from the type locality: Sandaoqiao, Yajiang County, Sichuan Province (Oriental region).

Key to males of the genus *Stempellinella* Brundin

1. Superior volsella bent in a right angle.....2
 - Superior volsella not bent or at most kidney-shaped.....3
2. Gonostylus somewhat club-shaped, with rounded apex (Casas & Vilchez-Quero 1991: fig. 1) (Southern Spain).*S. reissi* Casas & Vilchez-Quero
 - Gonostylus tapering into pointed apex (fig. 3) (Oriental China)*S. apicula* sp. n.
3. Superior volsella with apical projection (Albu 1980: fig. 207; Brundin 1947: fig. 126) (Europe)*S. saltuum* (Goetghebuer)
 - Superior volsella without apical projection.....4
4. AR 1.3. (Edwards 1929: fig. 15k) (Europe and Palaearctic Asia)*S. minor* (Edwards)
 - AR < 1.05
5. Superior volsella kidney-shaped; Stem of median volsella evenly tapered to a pointed apex.....6
 - Superior volsella elliptic; Stem of median volsella not evenly tapered to a pointed apex7
6. Median volsella with all lamellae short; Spinules and microtrichiae from tergite IX to anal point base arranged in a semicircle (fig. 6) (Oriental China).....*S. brevilamellae* sp. n.
 - Median volsella with 4-5 long besides short lamellae; Spinules and microtrichiae do not form semicircle (Sasa 1980: plates 20, 21) (Japan)*S. tamaseptima* (Sasa)
7. Crests ending far from thin anal point apex; few spinules in between crests (Edwards 1929: plate XIX, fig. 17; Pinder 1978: fig. 182A) (Europe and North America).*brevis* (Edwards)
 - Crests ending close to anal point apex; numerous spinules between crests8

8. Superior volsella with apical point (Pinder 1978: fig. 182B) (Europe)*S. flavidula* (Edwards)
 - Superior volsella without apical point (Webb 1969: fig. 7) (North America)*S. leptocelloides* (Webb)

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