A new species of the genus *Stachorutes* Dallai, 1973 from Russia (Collembola, Neanuridae)

A. Smolis & J. B. Shvejonkova

Smolis, A. & Shvejonkova, J. B., 2006. A new species of the genus *Stachorutes* Dallai, 1973 from Russia (Collembola, Neanuridae). *Animal Biodiversity and Conservation*, 29.1: 43–47.

Abstract
A new species of the genus Stachorutes *Dallai, 1973 from Russia* (*Collembola, Neanuridae*).— A new species of *Stachorutes* Dallai, 1973, *Stachorutes gracilis* n. sp. is described from the forest–steppe area of Russia (Cis–Volga Highland). The new species is characterized by 4+4 eyes and reduced chaetotaxy of labium and legs. It is most similar to *S. ruseki* Kováč, 1999 from Slovakia. Identification key to species of the genus is given.

Key words: Entomology, Taxonomy, Collembola, Neanuridae, Stachorutes, New species, Russia.

Resumen
Nueva especie del género *Stachorutes* Dallai, 1973 de Rusia (*Collembola, Neanuridae*).— Se describe una nueva especie de *Stachorutes* Dallai, 1973, *Stachorutes gracilis* sp. n., procedente de la zona de bosque–estepa de Rusia (tierras altas del cis–Volga). Esta nueva especie se caracteriza por sus 4+4 ojos y la quetotaxia reducida del labio y las patas. Es muy similar a *S. ruseki* Kováč, 1999 de Eslovaquia. Se incluye una clave de identificación de las especies del género.

Palabras clave: Entomología, Taxonomía, Collembola, Neanuridae, *Stachorutes*, Especie nueva, Rusia.

(Received: 27 V 05; Conditional acceptance: 29 VI 05; Final acceptance: 31 X 05)

Adrian Smolis, Zoological Inst., Univ. of Wrocław, Przybyszewskiego 63/77, 51–148 Wrocław, Poland.– Julja B. Shvejonkova, State Nature Reserve "Privolzhskaya lesostep", Okruzhnaya 12a, 440031 Penza, Russia.

Corresponding author: A. Smolis. E–mail: adek@biol.uni.wroc.pl

ISSN: 1578–665X

Introduction

The genus *Stachorutes* was established by Dallai (1973) for a new species *S. dematteisi* from Italy. As presently defined (Thibaud & Palacios Vargas 2000), the genus includes 15 species, 9 of which were described from the Palearctic Region. Species of the genus are most similar to those of *Pratanurida* Rusek, 1973 and *Pseudachorutes* Tullberg, 1871, but can be easily separated from these by the reduced number of eyes.

During the research of Collembola fauna in the "Privolzhskaya lesostep" (Cis–Volga Highland) reserve, the second author found an unknown species which can be classified within the genus *Stachorutes*. The present paper contains its description and an updated key for all members of the genus.

Results

Stachorutes gracilis n. sp. (figs 1–9)

Studied material

Holotype: adult male on slide, Russia, SW of Cis–Volga Highland, forest–steppe zone of Mid–Volga region, Penzenski region, Kuznecki district, "Privolzhskaya lesostep" reserve, Kuncherowski plot, dry steppe (*Festuca valesiaca*), in sandy soil, 27 IX 2000, leg. J. B. Shvejonkova. Paratypes: adult female on slide, Russia, SW of Cis–Volga Highland, forest–steppe zone of Mid–Volga region, Penzenski region, Kuznecki district, "Privolzhskaya lesostep" reserve, Kuncherowski plot, dry pine forest (*Pinus sylvestris* with *Cladonia* sp.), in sand soil, 28 VI 2004, leg. J. B. Shvejonkova; adult female on slide, Russia, SW of Cis–Volga Highland, forest–steppe zone of Mid–Volga region, Penzenski region, Kameshkirsky district, "Privolzhskaya lesostep" reserve, near village Shatkino, xerophytic meadow, on the bank of the Kadada river, in sandy soil, 29 V 2005, leg. J. B. Shvejonkova; adult male and 3 adult females on slide, Russia, SW of Cis–Volga Highland, forest–steppe zone of Mid–Volga region, Penzenski region, Kameshkirsky district, "Privolzhskaya lesostep" reserve, near village Shatkino, xerophytic meadow, on the bank of the Kadada river, in sandy soil, 29 V 2005, leg. J. B. Shvejonkova. Type material is preserved in the collection of the Department of Biodiversity and Evolutionary Taxonomy, Wrocław University, Poland.

Description

Habitus as in fig. 1. Body length (without antennae) 0.40– 0.52 mm (holotype: 0.49 mm). Body colour bluish of variable intensity, eyes dark. Granulation homogenous, rather coarse.

Antennae shorter than head. Antennal segment I with 6 setae, antennal segment II with 12 setae. Antennal segments III and IV fused dorsally. Chaetotaxy of antennal segments III and IV as in figures 3 and 4. Antennal III–organ with two small internal curved sensilla and two cylindrical guard sensilla (figs. 3, 4). Ventral microsensillum on antennal segment III present. Antennal segment IV with simple apical vesicle, subapical organite, microsensillum, seta i and 6 cylindrical sensilla (fig. 4).

Postantennal organ composed of 5–7 simple vesicles (holotype–6, 7). Area ocularis with 4+4 relatively large, pigmented eyes (figs. 1, 2).

Buccal cone short. Mandible with two teeth, maxilla styliform. Labium with 9+9 setae (seta E absent) and 1+1 subapical denticles (fig. 5). Labrum chaetotaxy 2/2,4.

Dorsal chaetotaxy as in fig. 1. Seta a_0 on the head absent, unpaired seta d_1 present. Thoracic tergum II with seta a_2 and without m_4. Seta m_4 on abdominal tergum IV absent. Sensillar formula of the body 022/11111. Sensilla relatively thick and slightly longer than ordinary setae. Thoracic sterna without setae, ventral tube with 4+4 setae. Ventral chaetotaxy of abdominal sterna I–VI as in fig. 8.

Furca short. Dens with 4 setae. Mucro distinctly separated from dens, 3 times shorter than dens (fig. 9). Retinaculum with 3+3 teeth.

Tibiotarsi I, II, III with 13, 13, 12 setae respectively (figs. 6, 7). Femora I, II, III with 10, 10, 9 setae respectively. Trochanters with 5 setae each. Coxae I, II, III with 3, 7, 7 setae respectively. Subcoxae 2 I, II, III with 0, 2, 2 setae respectively.

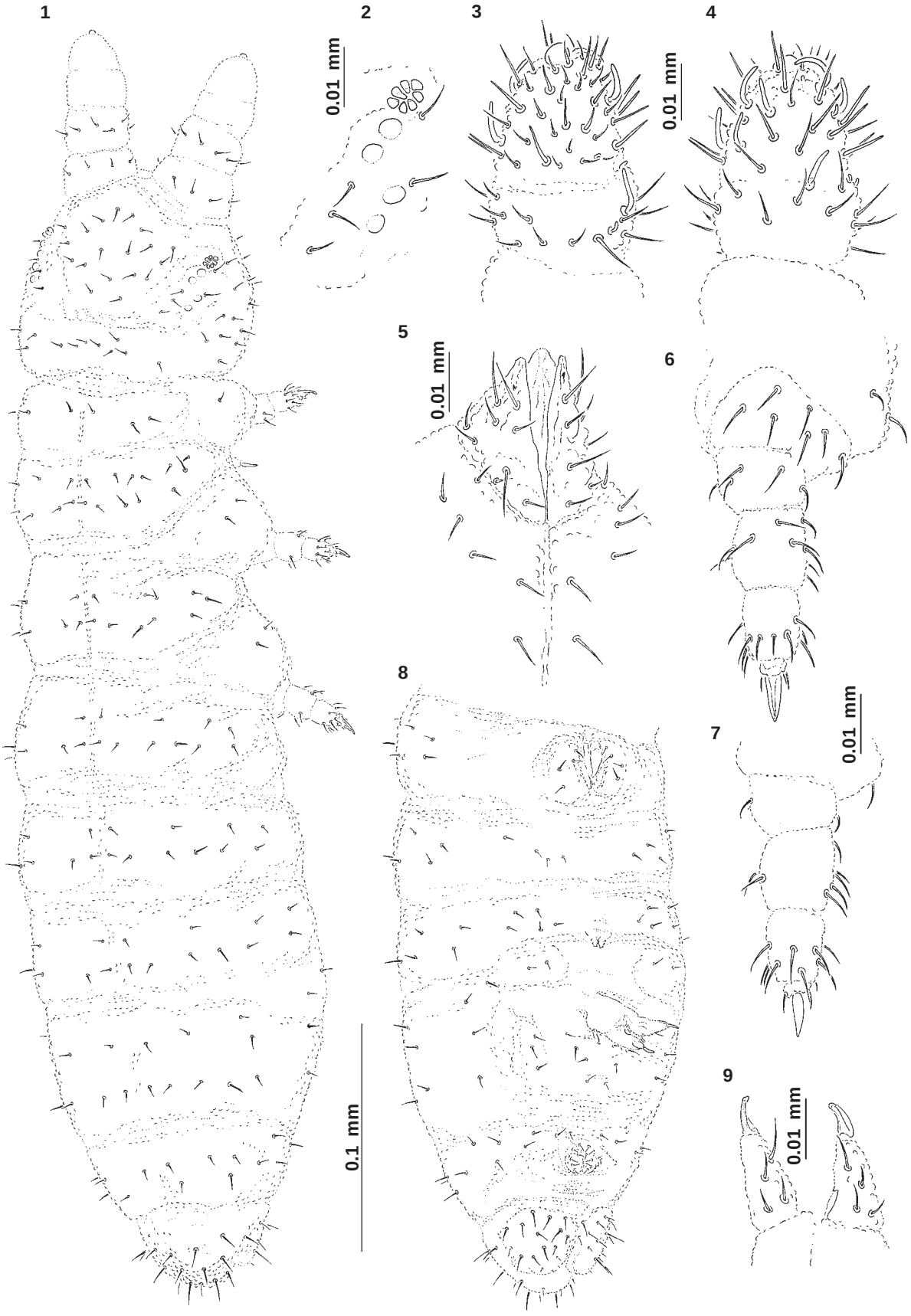
Claws without inner tooth. Empodial appendage absent.

Derivatio nominis

The species name is derived from the Latin word "*gracilis"* – delicate, slender, slim. It refers to the body shape of the new species.

Figs. 1–9. *Stachorutes gracilis* n. sp.: 1. Habitus and dorsal chaetotaxy; 2. Area ocularis; 3. Antennal segments III–IV of right antenna, ventral view; 4. Antennal segments III–IV of right antenna, dorsal view; 5. Labium; 6. Leg III, ventral view; 7. Leg III, dorsal view; 8. Chaetotaxy of abdominal sterna I–VI; 9. Furca, dorsal view.

Figs. 1–9. Stachorutes gracilis *sp. n.: 1. Habitus y quetotaxia dorsal; 2. Área ocularis; 3. Segmentos III–IV de la antena derecha, vista ventral; 4. Segmentos III–IV de la antena derecha, vista dorsal; 5. Labio; 6. Pata III, vista ventral; 7. Pata III, vista dorsal; 8. Quetotaxia de los esternitos I–VI; 9. Furca, vista dorsal.*


1
2
0.01 mm
3
4
0.01 mm
5
0.01 mm
6
7
0.01 mm
8
0.1 mm
9
0.01 mm

Identification key to the genus *Stachorutes.*

Clave de identificación para el género *Stachorutes*.

1	0–3 eyes on each side of head	2
	4–6 eyes on each side of head	9
2	Eyes absent, tibiotarsi I, II, III with 12, 11, 11 setae	*S. escobarae* (Palacios–Vargas, 1990)
	Eyes present, tibiotarsi I, II, III with higher number of setae	3
3	Head with 1+1 eyes	4
	Head with 2+2 or 3+3 eyes	5
4	Antennal segment IV with flame–shaped sensilla dens with 5 setae, mucro absent	*S. jizuensis* Tamura, 1997
	Antennal segment IV with cylindrical sensilla, dens with 6 setae, mucro present	*S. tatricus* Smolis & Skarżyński, 2001
5	Head with 3+3 eyes, dens with 3 setae	*S. triocellatus* Pomorski & Smolis, 1999
	Head with 2+2 eyes, dens with 4 or 5 setae	6
6	Mucro present	7
	Mucro absent	8
7	Dens with 4 setae, retinaculum with 3+3 teeth, tibiotarsi I, II, III with 15, 15, 13 setae	*S. maya* Thibaud & Palacios–Vargas, 2000
	Dens with 5 setae, retinaculum with 2+2 teeth tibiotarsi I, II, III with 18, 19, 18 setae	*S. dallaii* Weiner & Najt, 1998
8	Antennal segment IV with hammer–shaped sensilla, dens with 5 setae, retinaculum with 3+3 teeth	*S. sphagnophilus* Sławska, 1996
	Antennal segment IV with cylindrical sensilla, dens with 4 setae, retinaculum with 2+2 teeth	*S. dematteisi* Dallai, 1973
9	Head with 4+4 or 6+6 eyes	10
	Head with 5+5 eyes	12
10	Head with 4+4 eyes, dens with 4 setae	*S. gracilis* n. sp.
	Head with 6+6 eyes, dens with 5 or 6 setae	11
11	Mucro present, dens with 6 setae, retinaculum with 3+3 teeth	*S. ruseki* Kováč, 1999
	Mucro absent, dens with 5 setae, retinaculum with 2+2 teeth	*S. cabagnerensis* Simón Benito, Espantaleón & Garcia–Barros, 2005 (Simón Benito et al., 2005)
12	Seta a_0 on head present, seta m_4 on thoracic tergum II present	*S. navajellus* Fjellberg, 1984
	Seta a_0 on head absent, seta m_4 on thoracic tergum II absent	13
13	Thoracic tergum I with 3+3 setae, seta a_2 on thoracic tergum II present	14
	Thoracic tergum I with 2+2 setae, seta a_2 on thoracic tergum II absent	15
14	Dens with 5 setae, postantennal organ with 8 vesicles	*S. valdeaibarensis* Arbea & Jordana, 1991
	Dens with 6 setae, postantennal organ with 9–10 vesicles	*S. scherae* Deharveng & Lienhard, 1983
15	Seta d_1 on head present, seta E on labium present, tibiotarsi I, II, III with 19, 19, 18 setae	*S. longirostris* Deharveng & Lienhard, 1983
	Seta d_1 on head absent, seta E on labium absent, tibiotarsi I, II, III with 18, 18, 17 setae	*S. tieni* Pomorski & Smolis, 1999

Discussion

Among known members of the genus, only *S. gracilis* n. sp. has 4+4 eyes and 13, 13, 12 setae on tibiotarsi I, II, III respectively. The presence of slightly reduced mucro (distinctly separated from dens) and absence of setae m_4 on thoracic tergum II and abdominal tergum IV place the new species near *S. ruseki* Kováč, 1999 from Slovakia. Additionally, *S. gracilis* n. sp. differs from the mentioned species in the following characters: postantennal organ with 5–7 vesicles (in *ruseki*: 8–10), dens with 4 setae (in *ruseki*: 6), presence of seta a_2 on thoracic tergum II (in *ruseki* absent), absence of seta E on labium (in *ruseki* present), trochanters with 5 setae each (in *ruseki*: 6) and femora I–III with 10, 10, 9 setae respectively (in *ruseki*: 12, 11, 10).

References

Dallai, R., 1973. Ricerche sui Collemboli. XVI. *Stachorutes dematteisi* n. gen., n. sp., *Micranurida intermedia* n. sp. e considerazioni sul genre *Micranurida*. *Redia*, 54: 23–31.

Thibaud, J.–M. & Palacios Vargas, J. G., 2000. Remarks on *Stachorutes* (Collembola: Pseudachorutidae) with a new Mexican species. *Folia Entomol. Mex.*, 109: 107–112.

Simón Benito, J. C., Espantaleón, D. & Garcia–Barros, E., 2005. *Stachorutes cabagnerensis* n. sp., Collembola (Neanuridae) from Central Spain, and a preliminary approach to phylogeny of genus. *Animal Biodiversity and Conservation*, 28.2: 147–155.