

Two interesting species of *Onychiurinae* (*Collembola*) from Ukraine and some remarks on *Allaphorura franzi* (STACH, 1946)

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Abstract. A redescription of *Oligaphorura uralica* (KHANISLAMOVA, 1986) is given; a new species is described from Volyno-Podillya Region (West Ukraine) and some remarks on *Allaphorura franzi* (STACH, 1946) are enclosed.

Key words: *Collembola*, taxonomy, new species, Ukraine.

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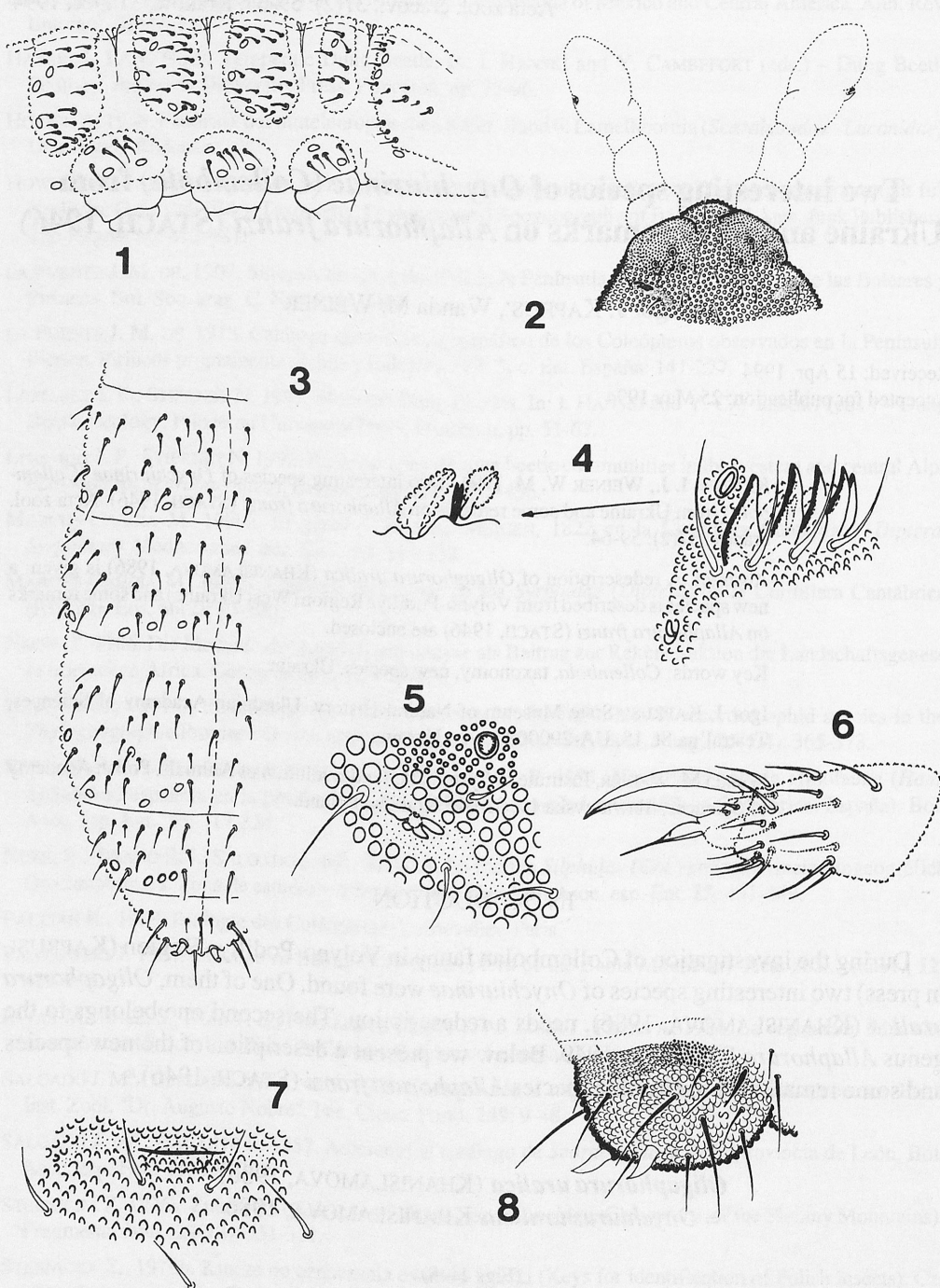
INTRODUCTION

During the investigation of Collembolan fauna in Volyno-Podillya Region (KAPRUS', in press) two interesting species of *Onychiurinae* were found. One of them, *Oligaphorura uralica* (KHANISLAMOVA, 1986), needs a redescription. The second one belongs to the genus *Allaphorura* BAGNALL, 1949. Below we present a description of the new species and some remarks on the nearest species *Allaphorura franzi* (STACH, 1946).

***Oligaphorura uralica* (KHANISLAMOVA, 1986)**
= *Onychiurus uralicus* KHANISLAMOVA, 1986

(Figs 1 - 8)

Redescription. Body length between 0.90 mm and 1.50 mm. Colour of living animals yellowish. Strong tegumental granulation on the dorsal side of antennae (well delimited areas), on the head, thoracic tergites and posterior half of abdominal tergite VI. Bases of antennae very clearly limited (Fig. 2).



Figs 1-8. *Oligaphorura uralica* KHANISLAMOVA, 1986. 1 - lateral part of Th. I - Abd. I; 2 - anterior part of the head; 3 - dorsal chaetotaxy of Abd. II - VI; 4 - antenna III-organ; 5 - postantennal organ; 6 - tibiotalar III with claw; 7 - rudiment of furca; 8 - Abd. VI.

Antennae shorter than head. Antennal segment I with 8 setae, antennal segment II with 13 setae. Sensory organ of antennal segment III consisting of 4 setae at the base of 5 large papillae guarding 2 smooth rods and 2 coarsely granulated sensory clubs (the external one bigger than the internal) and one ventro-lateral microsensillum (Fig. 4). Antennal segment IV with very small subapical organite and one latero-external microsensillum at the basal part of the segment.

Postantennal organ 2.5 times longer than the nearest pseudocellus, with 3-4 simple lobes (Fig. 5).

Labrum with 4/342 setae. Maxillary outer lobe with two sublobal setae.

Pseudocellar formula per half tergite: 32/133/44454, per half sternite : 2(1+1)/000/1112. Clearly marked base of antenna with three pseudocelli. Subcoxae I, II and III with: 2, 3, 3 pseudocelli. Parapseudocelli almost indistinct.

Dorsal chaetotaxy as in Figs 1 and 3. Chaetotaxy without distinct macrochaetae, sensory setae slightly marked, formula of sensory setae per half tergite: 2/0,1+ms,1+ms/2,2,2,1+1,1,1 (abdomen IV with one sensory seta on tergite and one on pleurite). Thorax II and III with lateral microsensilla. Head, thoracic tergites II and III with setae p1 in front of setae p2. Abdomen IV with unpaired seta m0. Setae m1 on abdominal tergite V shorter than a1 and p1. Important characters of ventral chaetotaxy: thoracic sternites I, II and III without setae. Ventral tube with 6-8+6-8 setae on distal part and 2+2 setae on basal part. Abdomen VI with a0 and p0; seta a0 two times longer than a1 and 2/3 as long as a2. On abdomen VI two spines (2.5-2.8 times longer than wide, 0.8 length of inner edge of claw) implanted on a very finely granulated tegument, which gives an impression as if very short papillae were present (Fig. 8).

On the abdominal sternite IV rudiment of furca (Fig. 7) in the form of very small cuticular pocket with two setae. No male organ observed.

Tibiotarsi I, II, III with 19, 19, 18 setae, with acuminate tenent hair on each leg. Claw without teeth. Empodial appendage with basal lamella, 3/4 length of inner edge of claw (Fig. 6).

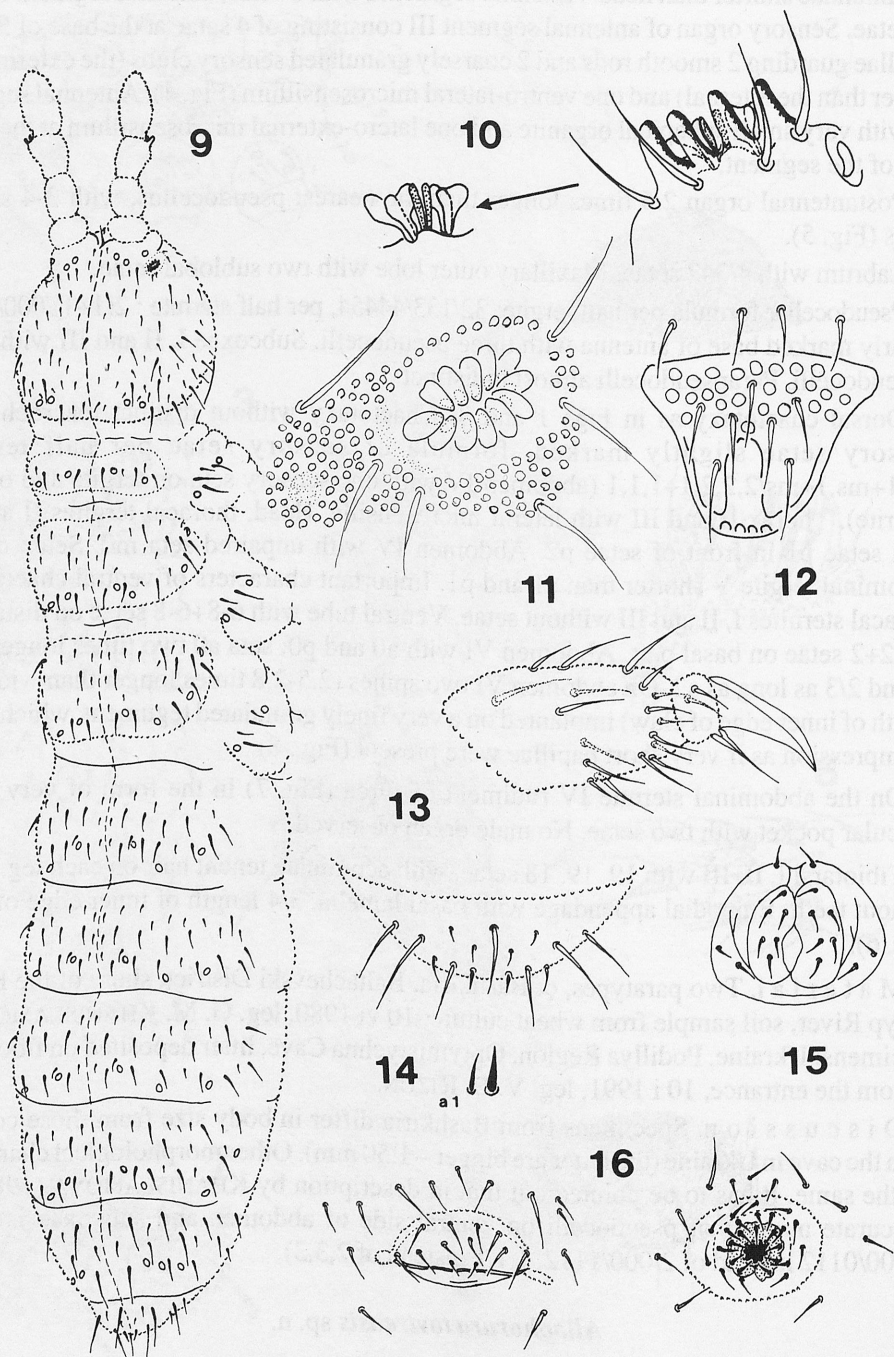
M a t e r i a l. Two paratypes, ♀: Bashkiria, Baltachevski District, shore of the Bystry Tanyp River, soil sample from wheat culture, 10 vi 1980, leg. G. M. KHANISLAMOVA; 6 specimens: Ukraine, Podillya Region, Optymistychna Cave, litter deposited on floor, 200 m from the entrance, 10 i 1991, leg. V. B. RIZUN.

D i s c u s s i o n. Specimens from Bashkiria differ in body size from those coming from the cave in Ukraine (the latter are bigger – 1.50 mm). Other morphological characters are the same. It has to be pointed out that in description by KHANISLAMOVA (1986) an inaccurate number of pseudocelli on ventral side of abdomen and subcoxae is given (1/000/0112 instead of 2/000/1112, 1,1,1 instead of 2,3,3).

Allaphorura tovtrensis sp. n.

(Figs 9 - 16)

D e s c r i p t i o n. Holotype ♀, length 0.9 mm, paratypes ♂♂ and ♀♀ between 0.7 mm and 0.9 mm. Colour of living animals white. Tegumental granulation fine and uniform, antennal base not limited.



Figs 9-16. *Allaphorura tovtrensis* sp.n. 9 – body shape with dorsal chaetotaxy; 10 – antenna III-organ; 11 – postantennal organ; 12 – labrum; 13 – tibiotarsus III with claw; 14 – Abd. VI and a1 seta, spineformes seta; 15 – ventral tube; 16 – genital plates of the female and the male.

Antennae shorter than head. Antennal segment I with 8 setae, antennal segment II with 13 setae. Sensory organ of antennal segment III consisting of 4 setae at the base of 4 papillae guarding 2 smooth rods, 2 finely granulated sensory clubs flattened and one ventro-lateral microsensillum (Fig. 10). Antennal segment IV with very small subapical organite and one latero-external microsensillum in half of length of this segment.

Postantennal organ oval with 10-13 simple vesicles arranged petal-like with bases situated around an ellipse (Fig. 11).

Labrum with 4/142 setae (Fig. 12). Maxillary outer lobe with two sublobal setae.

Pseudocellar formula per half tergite: 32/233/33343, per half sternite : 2(1+1)/000/0112. Subcoxae I, II and III with: 2, 2, 2 pseudocelli and 4, 4, 4 setae. Parapseudocelli indistinct.

Dorsal chaetotaxy as in Fig. 9 with some asymmetry on abdominal segment IV-V. Chaetotaxy with distinct macrochaetae, microchaetae, sensory setae not marked. Thorax II and III with lateral microsensilla. Head, thoracic tergites II and III with setae p1 in front of setae p2. Abdominal tergites I-VI with three rows of setae. Abdomen VI with macrochaeta a0, without seta p0. Important characters of ventral chaetotaxy: thoracic sternites I, II and III with 1+1 setae. Ventral tube with 6+6, very rarely with 5+5 setae on distal part, 1+1 on frontal part and 2+2 setae on basal part (Fig. 15). On abdomen VI two spiniformes setae, 2.8 times shorter and 1.2 times thicker than nearest macrochaetae (Fig. 14).

On abdominal sternite IV no rudiment of furca, in this place small area of fine granulation and four microchaetae are situated. No male organ observed.

Genital plates of female and male as in Fig. 16.

Tibiotarsi I, II, III with 18, 18, 18 setae, with acuminate tenent hair on each leg. Claw without teeth. Empodial appendage with basal lamella, 0.6 length of inner edge of claw (Fig. 13).

H o l o t y p e ♀, 90 paratypes (♂♂ and ♀♀) on slides and 20 paratypes in alcohol: Ukraine, Ternopil' district, Podillya Region, Tovtry Hills near Ostapie, soil sample from xerothermic grassland with *Carex* sp. domination, 7 vi 1993, leg. V. B. RIZUN. Holotype, 83 paratypes on slides and 20 paratypes in alcohol preserved in the State Museum of Natural History in L'viv, 7 paratypes on slides preserved in Institute of Systematics and Evolution of Animals in Kraków.

D i s c u s s i o n. The species closest to *Allaphorura tovtrensis* sp. n. are *Allaphorura franzi* (STACH, 1946) and *Allaphorura zschokkei* (HANDSCHIN, 1920). The new species differs from the other two species by the number of vesicles in postantennal organ: 10-13 (21-23 in *Allaphorura franzi*, 20-30 in *Allaphorura zschokkei*) and by the number of the guard setae and guard papillae in sensory organ of antennal segment III (4 setae and 4 papillae in the new species and 5 setae and 5 papillae in two others). The spiniform setae, characteristic for *Allaphorura franzi* and *Allaphorura tovtrensis* sp. n., in the latter are thicker and shorter than in the former one, where these setae are 2.1-2.2 times shorter, and 0.9 times less thick than the nearest macrochaetae. *Allaphorura zschokkei*, differs from them by the presence of the small anal spines. Other characters, such as pseudocellar

formula, chaetotaxie of thoracic sternites and ventral tube, are common in these three species.

Derivatio nominis. The name of the new species come from the name of the hills, where it was found.

Allaphorura franzi (STACH, 1964)

Le c t o t y p e (designed by the authors) on microscopic slide, paralectotypes juv. and juv. on microscopic slides: Alpes Mts., Gesäusealpen, territory of Admont-Kalbling (Upper Stiria); the way from Kalblinggatterl to Admont-kalbling, 18 ix 1940, leg. Dr H. FRANZ, preserved in Institute of Systematics and Evolution of Animals in Kraków.

R e m a r k s. The original description of *Allaphorura franzi* (= *Onychiurus franzi*) made by STACH (1946) contains an incorrect pseudocellar formula. The type material from STACH's collection is very poorly preserved, but it is still possible to verify some pseudocelli. The pseudocellar formula per half tergite is: 32/233/33343, per half sternite: 2(?) / 000 / 0112. Subcoxae with 2,2,2 pseudocelli and 4,4,4 setae. Also the correct number of guard setae and guard papillae in sensory organ of antennal segment III is 5 and 5. Some of these characters (pseudocellar formula, number of guard setae and papillae) were mentioned by GISIN (1961) for the material from Rax (Low Austria, Alps Mts.). The specimens from Dolomits (Italy) have the same characters.

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