

***Willemia unispina* sp. n. a new species of Collembola (Hypogastruridae) from West Norway**

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A new species of *Willemia* with one anal spine, granulated post antennal organ and exceptionally swollen dorsal sensilla was discovered in soil in lush deciduous forest in a scree slope near Bergen, West Norway. The new species is described and figured. It is suggested that the species may belong to a western element in the Nordic fauna.

Key words: Collembola, *Willemia*, *unispina*, new species, Norway.

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INTRODUCTION

The genus *Willemia* has about 35 species of world-wide distribution, of which 17 are Palaearctic (Thibaud et al. 2004). Six species are present in the Nordic countries (Fjellberg 1998). Most species are well marked and characterized by either two or none anal spines. During field work along the coast of West Norway in the summer of 1999, one specimen of a remarkable form with only one anal spine – sitting exactly in the axial line on tip of abd.6 – was discovered. At first it was thought to be an aberrant form of one of our common species, but the presence of secondary lobes in the post antennal organ and very swollen dorsal sensilla on thorax and abdomen triggered another visit to the actual locality the next year. Fifteen specimens, present in several samples, were all morphological similar and left no doubt that it was an undescribed species.

DESCRIPTION

Type material (all in slides deposited at Tromsø Museum, Dept. of Zoology, Tromsø). Holotype:

Female from "Norway. HOY: Os. Hattvik, 1.XI.2000. Rich slope, hardwood forest. A.Fjellberg 040.00". - Paratypes: 14 specimens in 8 slides from the same sample.

***Willemia unispina* sp. n.**

Full-grown specimens 0,5 mm. General habitus typical for the genus. PAO with 4 large lobes, each with an irregular secondary lobation of ridges and papillae (Figure 1A). Labrum with 5-5-4 setae, prelabral setae 2. Mandibles and maxillae unmodified. Labial palps with 5 papillae (A-E), 4 guards and 5 proximal setae. Basomedian field with 4 setae, basolateral with 5. Ventral side of head with 3+3 postlabial setae. On dorsal side of head the anterior seta a_0 is present in adults, absent in juveniles/subadults. Apical organ of antenna 3 with two small exposed sensilla and two slender guards set widely apart. Fourth antenna with pointed and curved sensilla, of which C, D and F are thicker than others (Figure 1E). Dorsal chaetotaxy of thorax and abdomen as Figure 1C. Lateral sensilla on th.2-3 dagger-like, the p_4 sensilla on th.2-abd.3 strongly pear-shaped. On

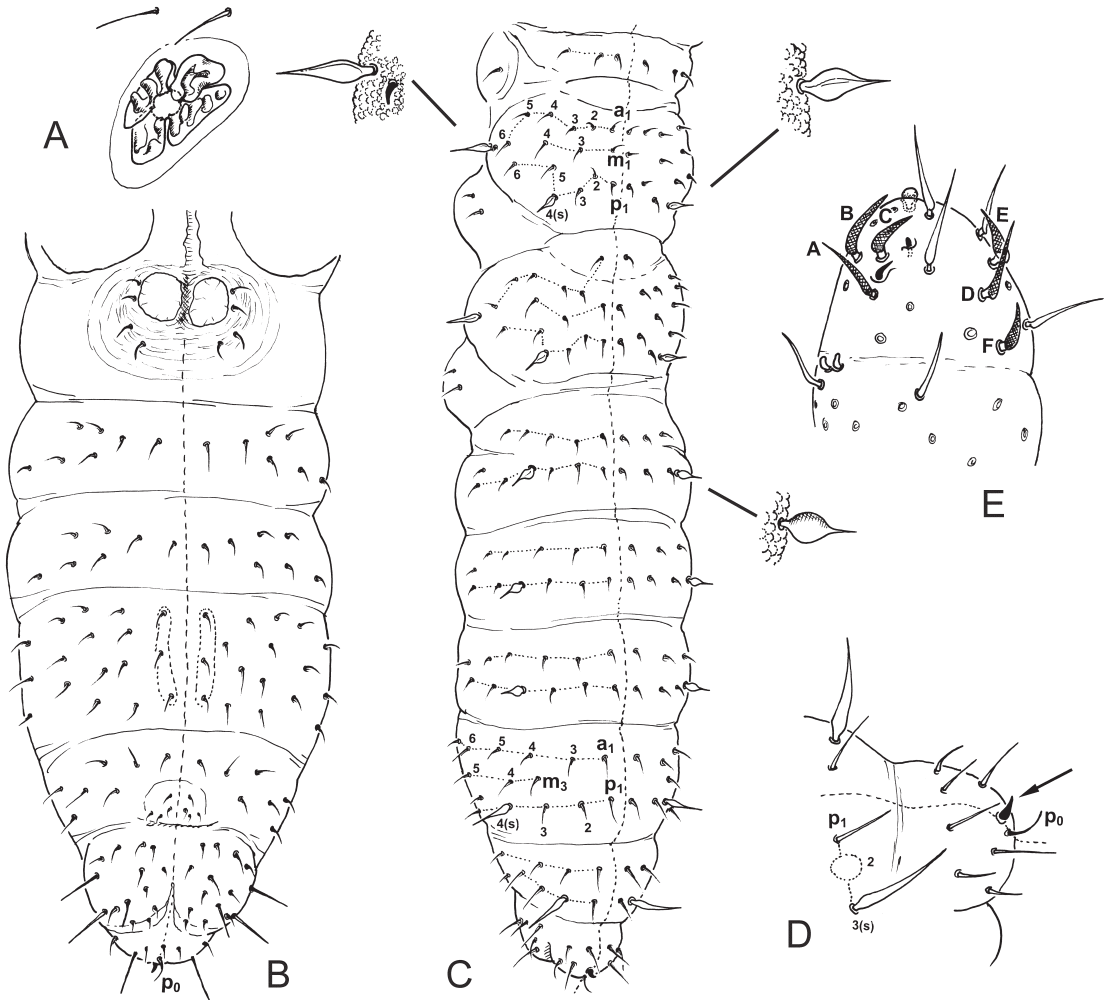


Fig.1. *Willemia unispina* sp. n. **A.** Left post antennal organ; **B.** ventral chaetotaxy of abd.1-6; **C.** dorsal chaetotaxy of th.1-abd.6, with enlargement of sensilla; **D.** abd.5-6 with the unpaired anal spine marked (arrow); **E.** left ant.3-4.

abd.4-5 the corresponding sensilla become longer and more slender. Th.2-3 and abd. 4 with setae m_3 - m_4 present (m_3 absent in juveniles/subadults). Abd.1-3 without m-setae. Abd.4 with 2+2 axial setae (a_1 and p_1 , m_1 absent). On abd.5 there are only 1+1 setae (p_1 - p_1) between the sensilla (Figure 1D). Abd.6 with a single short anal spine (without basal papilla) sitting just above the curved p_0 seta (Figure 1D). Ventral chaetotaxy of abd.1-6 as Figure 1B. Abd.4 with only 3+3 axial setae. Tibiotarsi with 17-17-16 setae. Claws normal, unguiculus short and pointed, less than 1/4 of unguis. Males possibly absent. All observed specimens are females or juveniles.

DISCUSSION

The new species is characterised by a set of apomorphic characters: Granulated PAO lobes, reduced chaetotaxy (absence of m-setae on abd.1-3, absence of m_1 on abd.4, absence of p_2 on abd.5), presence of only one anal spine and strongly swollen p_4 sensilla on th.2-abd.3. The presence of only one anal spine is an autapomorphy seen in no other species of *Willemia*. The granulated PAO lobes is shared with a few other species, of which *multilobata* Gers & Deharveng, 1985 occurs in Denmark. This species differs by presence of two anal spines and a more complete chaetotaxy (m_3 and m_5 present on abd.1-3, m_1 on abd.4, p_2 on abd.5) and slender sensilla on the tergites.

It is a mystery how such a characteristic species has remained undiscovered. The type locality is a dense forest (*Fraxinus excelsior*, *Corylus avellana*, *Prunus padus*) in a schisty scree slope just above the ferry port at Hattvik south of Bergen (60°12,5' N, 5°32,1'E). The soil is stony with a vegetation dominated by *Allium ursinum*. The coast of west Norway has some elements in its collembolan fauna with an Atlantic west European distribution (*Onychiurus scotarius* Gisin, 1954, *Thalassaphorura halophila* (Bagnall, 1935), *Anurida denisi* Bagnall, 1939, *Marisotoma canaliculata* Fjellberg, 1997, *Arrhopalites sericus* Gisin, 1947). The new species may possibly belong to this group and should be looked after

in the British Isles and other west European countries.

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