



## Two new species of Collembola: *Friesea kariae* sp. nov. (Neanuridae) and *Stachia oregonensis* sp. nov. (Odontellidae) from North America

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### Abstract

Two new species of genera *Friesea* Dalla Torre, 1895 and *Stachia* Folsom, 1932 are described and fully illustrated. *Friesea kariae* sp. nov. is easily distinguished by absence of eyes, presence of five anal spines, furcula in state 3 and retinaculum with 2+2 teeth. *Stachia oregonensis* sp. nov. is easily distinguished by its femoral and trochanteral chaetotaxy, presence of three rounded lobes in postantennal organ and setae  $a_1$  on most thoracic and abdominal terga. Keys to the known eyeless members of the genus *Friesea* Dalla Torre, 1895 and all the species of *Stachia* Folsom, 1932 are also included.

**Key words:** taxonomy, springtails, *Friesea kariae* sp. nov., *Stachia oregonensis* sp. nov., Oregon, British Columbia

### Introduction

Many species of Collembola are highly specialized eudaphic forms that can inhabit the deepest soil layers of forest ecosystems. These forms are characterized by a set of distinct morphological features: minute body size, delicate and usually slim body shape, complete absence of pigment, strong reduction of jumping organ (furcula), dorsal chaetotaxy and eyes. Their extraordinary small body size and the low efficiency of collecting methods are probably the main reasons of our still incomplete and far satisfactory knowledge of diversity of this ecological group of springtails. Two new remarkable species belonging to the families Neanuridae and Odontellidae were discovered in the samples of soil collected at the neighborhood of the H. J. Andrews Experimental Forest Long Term Ecological Research (LTER) site, in the Western Cascade Range of Oregon, USA. A large part of this area is covered by old-growth coniferous forests, dominated primary by Douglas fir, Western hemlock and Western red-cedar (*Tsuga heterophylla* zone). The mentioned forests belong to the tallest, densest and most productive woods in the world and very important both from ecological and economical point of view (Franklin & Dyreness 1988, Van Pelt 2001).

The cosmopolitan genus *Friesea* Dalla Torre, 1895 is the largest in the entire family Neanuridae and currently comprises about 170 taxa, recognized as species or subspecies (Palacios-Vargas 2005). At present 18 species are known from the Nearctic Region (Christiansen & Bellinger 1998). Members of *Friesea* are characterized by the absence of the postantennal organ, the sickle-shaped maxilla (their shape can be rated as adaptation to predation) with only two small internal lamellae and the presence of spines on the last abdominal segment. The combination of mentioned features makes the genus a unique among Neanuridae. *Friesea kariae* sp. nov. belongs to the relatively small group of *Friesea* with complete reduction of eyes.

The genus *Stachia* Folsom, 1932 is recently redefined by Bernard (2008) and currently comprises five species, two of them were described from North America. Within the family Odontellidae the genus is easily recognized by the paddle-like mucro. Morphologically, *Stachia* strongly resembles the monotypic genus *Stachiomella* Wray, 1957 *sensu* Bernard, 2008. However, they can be distinguished by the shape of postantennal organ (unlobed in *Stachiomella*, three- or four-lobed in *Stachia*) and mucro (elongated and curved in *Stachiomella*, short and paddle-like in *Stachia*). *Stachia oregonensis* sp. nov. is presently known from