



Three new species of *Pogonognathellus* (Collembola: Tomoceridae) from North America

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Abstract

Three species of *Pogonognathellus* Paclt are described from eastern North America: *P. belmontorum* n. sp. from the southern Appalachians, Alabama and Florida, *P. brevifulvus* n. sp. from Massachusetts and Michigan, and *P. magnibrunneus* n. sp. from the southern Appalachians and New York. The first two species are members of the pale/grey clade and the third is a member of the *longicornis* clade. The setal complexes at the apices of the third and fourth antennal segments are described.

Key words: antennal chaetotaxy, Appalachian Mountains, Blue Ridge Parkway, Great Smoky Mountains National Park, Hudson River valley, taxonomy

Introduction

The family Tomoceridae currently has 158 species in 16 genera worldwide, most of which occur in the northern hemisphere (Fjellberg 2007; Bellinger *et al.* 2011). In North America *Pogonognathellus* Paclt is an abundant and diverse tomocerid genus consisting of large springtails, with body lengths of 3–7 mm and antennae frequently equal to or longer than the body length. The family and genus generally were considered well-known in North America (Folsom 1913; Mills 1934; Maynard 1951; Christiansen 1964; Christiansen & Bellinger 1980, 1998) until a combined morphological-molecular analysis demonstrated that several recognised *Pogonognathellus* spp. appeared to be complex species groups (Felderhoff 2007, Felderhoff *et al.* 2010). However, *P. flavescens* (Tullberg), considered previously to occur over most of temperate North America, was not found and probably does not exist naturally in the New World (Felderhoff *et al.* 2010). Currently, seven described *Pogonognathellus* spp. are definitely known in North America: *P. bidentatus* (Folsom), *P. celsus* Christiansen, *P. danieli* Felderhoff, Bernard and Moulton, *P. dubius* Christiansen, *P. elongatus* (Maynard), *P. mystax* Felderhoff, Bernard and Moulton, and *P. nigritus* (Maynard) (Christiansen & Bellinger 1998; Felderhoff *et al.* 2010).

The molecular analysis by Felderhoff *et al.* (2010) suggested three clades within the genus, with one undescribed species in the *longicornis* clade and many in the “pale/grey” clade. The purpose of this paper is to describe the *longicornis*-clade species and two of the pale/grey-clade species.

Material and methods

Collection and imaging. Specimens were collected in Great Smoky Mountains National Park, Tennessee and North Carolina, USA, and the surrounding southern Appalachian region and southern Coastal Plain. Others were collected in northeastern states. They were collected live by aspiration, with Tullgren funnels from leaf litter and moss samples, or were beaten from tree foliage or branches. Live specimens were maintained singly in small plas-