



Cave *Pygmarrhopalites* Vargovitsh, 2009 (Collembola, Symphypleona, Arrhopalitidae) in United States

DOUGLAS ZEPELINI^{1,2,5}; STEVEN J. TAYLOR³ & MICHAEL E. SLAY⁴

¹Universidade Estadual da Paraíba – Centro de Ciências Biológicas e Sociais Aplicadas, Campus V. Laboratório de Sistemática e Conservação de Microartrópodes, Rua Monsenhor Walfredo Leal, 487, Tamba, 58020-540, João Pessoa, PB, Brazil.

E-mail: zeppelini@daad-alumni.de

²Associação Guajiru – Ciência – Educação – Meio Ambiente, Federal Inscription number 051176990001.98, Scientific Board. Cabedelo, PB, Brazil

³Illinois Natural History Survey, 1816 South Oak Street, Champaign, IL 61820-6953, USA. E-mail: sjtaylor@illinois.edu

⁴The Nature Conservancy, 601 North University Avenue, Little Rock, AR 72705, USA. E-mail: mslay@nrc.org

⁵Corresponding author

Abstract

Six new species of Collembola of the family Arrhopalitidae are described from the United States (*Pygmarrhopalites leonardwoodensis* sp. nov., *P. plethorasari* sp. nov., *P. youngsteadtii* sp. nov., *P. buffaloensis* sp. nov., *P. shoshoneiensis* sp. nov., and *P. ashcraftensis* sp. nov.) from caves in Missouri (2 spp.), Arkansas (2 spp.), Nevada, and Indiana, respectively. These new taxa, which display varying degrees of troglomorphy, are compared with previously known species and bring the total described species in North America to 41.

Key words: cave Collembola, taxonomy, new species, descriptions

Introduction

This is the third in a series of papers dealing with the family Arrhopalitidae in U.S. caves (Christiansen & Bellinger 1996, Zeppelini & Christiansen 2003). The genera *Arrhopalites* Börner, 1906 and *Pygmarrhopalites* Vargovitsh, 2009 are cosmopolitan, with recent species described from Ukraine (Vargovitsh 2005, 2009), Spain (Baquero *et al.* 2005), Brazil (Zeppelini 2006), and Korea (Park & Kang 2007). Of 35 species known from North America, many occur in caves. Christiansen (1966) described the species *P. altus* (Christiansen), *P. bimus* (Christiansen), *P. clarus* (Christiansen), *P. dubius* (Christiansen), and *P. hirtus* (Christiansen) from U.S. caves and reported cave records for *A. caecus* (Tullberg), *P. benitus* (Folsom), *P. pygmaeus* (Wankel), and *P. whitesidei* (Jacot). Christiansen & Bellinger (1996) described the species *P. caedus* (Christiansen & Bellinger), *P. carolynae* (Christiansen and Bellinger), *P. commorus* (Christiansen & Bellinger), *P. jay* (Christiansen & Bellinger), *P. lacuna* (Christiansen & Bellinger), *P. marshalli* (Christiansen & Bellinger), *P. pavo* (Christiansen & Bellinger), *P. sacer* (Christiansen & Bellinger), *P. silvus* (Christiansen & Bellinger), and *P. texensis* (Christiansen & Bellinger) from caves in Oklahoma, Virginia, and Texas. Two years later, Christiansen and Bellinger (1998) described *P. ater* (Christiansen & Bellinger) and *P. lewisi* (Christiansen & Bellinger) from caves in Indiana. The most recent descriptions added the species *A. incertus* Zeppelini & Christiansen, *P. arca* (Zeppelini & Christiansen), *P. hubbardi* (Zeppelini & Christiansen), *P. madonnensis* (Zeppelini & Christiansen), *P. obtusus* (Zeppelini & Christiansen), *P. sapo* (Zeppelini & Christiansen), and *P. sextus* (Zeppelini & Christiansen) from caves in Colorado, Virginia, and Idaho (Zeppelini & Christiansen 2003). The U.S. Arrhopalitidae fauna continues to expand with discoveries of new species. Herein, we describe six new cave species and report new collections for previously described species. All known species