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A new species of *Spelaeogammarus* (Amphipoda: Bogidielloidea: Artesiidae) with an identification key for the genus

RAFAELA BASTOS-PEREIRA¹ & RODRIGO L. FERREIRA²

Universidade Federal de Lavras (UFLA), Centro de Estudos em Biologia Subterrânea, Departamento de Biologia, Lavras, MG, Brasil. E-mail: ¹rafaelabastospereira@gmail.com; ²drops@dbi.ufla.br

Abstract

There are five described species of the cave-dwelling amphipods of the genus *Spelaeogammarus*, all of them inhabiting caves on the Brazilian state of Bahia. A new species of this genus is here described, which is closely related to the already known species *S. santanensis* and *S. titan*. *Spelaeogammarus sanctus* **sp. nov.** differs from its congeneric species basically by the presence of more than 18 bifid setae on the dorsal margin of uropod 3 outer ramus and telson with one apical and two subapical stout setae, while the other species generally present less setae on the third uropod and more setae on telson. An identification key and an updated table of the *Spelaeogammarus* species diagnosis are provided, as well as a multivariate statistical approach of morphological variations among the species.

Key words: taxonomy, Subterranean amphipods, Cave biodiversity

Introduction

Amphipods represent a crustacean order of approximately 10,000 described species, and this number has been increasing in the last years (Fišer *et al.* 2013). These crustaceans are found on terrestrial, marine and freshwater environments, as well as in epigeal, hypogean and hypotelminorheic habitats (Fišer *et al.* 2010; Rodrigues *et al.* 2012). The stygobiotic fauna, which comprises the subterranean-restricted and usually specialized aquatic fauna is predominated by crustaceans (Sket 1999). Approximately 45% of the described freshwater amphipod species are stygobiotic, for which the highest diversity is found on karstic landscapes of Central and Southern Europe (Väinöla *et al.* 2008).

Currently five families of amphipods are known for subterranean ecosystems in Brazil: Hyaellidae, Mesogammaridae, Seborgidae, Bogidiellidae and Artesiidae (Koenemann & Holsinger 2000; Cardoso *et al.* 2012; Fišer *et al.* 2013; Senna *et al.* 2014). Although Botosaneanu & Stock (1989) had suggested that the name Artesiidae was leaved and its genera were included on Bogidiellidae, the most recent study regarding the phylogeny and classification of Amphipoda (Lowry & Myers, 2013) revalidates this family, which now groups the genera *Artesia* Holsinger, 1980 and *Spelaeogammarus* Da Silva Brum, 1975.

Spelaeogammarus is a genus found exclusively on Brazilian caves situated on the state of Bahia and comprises five species: *S. bahiensis* Da Silva Brum, 1975 (type-species), *S. spinilacertus* Koenemann & Holsinger, 2000; *S. trajanoae* Koenemann & Holsinger, 2000; *S. santanensis* Koenemann & Holsinger, 2000 and *S. titan* Senna *et al.*, 2014. All of them are anophthalmic and depigmented, presenting subtle morphological differences mainly on the flagellum of both antenna, number and type of seta on gnathopods, pleopods, uropods and telson, as well as body size. Koenemann & Holsinger (2000) stated that these differences seemed to be correlated with the spatial distribution, so that geographically nearest species show higher morphological resemblance.

A new stygobiotic Amphipoda of the genus *Spelaeogammarus* was found on the municipality of Bom Jesus da Lapa, state of Bahia, Brazil, which is being described in the present work. This new species presents subtle morphological differences in relation to its co-generics, for this reason in addition to the description of the new species we present a statistical approach of some morphological characteristics considering all the six species of the genus, besides an identification key for them and an updated table of the species diagnosis.