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## New species and records of cunaxid mites (Acari: Cunaxidae) from soil in Southern Brazil

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### Abstract

*Neocunaxoides promatae* sp. nov., *Bonzia flechtmanni* sp. nov. and *Dactyloscirus multiscutus* sp. nov. are described from soil and leaf litter in Atlantic rainforest and Atlantic *Araucaria* forest in natural environments in São Francisco de Paula municipality, Rio Grande do Sul State, Brazil. In addition, the species *Pulaeus quadrisolenidius* Castro & Den Heyer 2009 and *Lupaeus lectus* Castro & Den Heyer (2009) are registered for the first time in this State.

**Key words:** Atlantic forest, Bonziinae, Cunaxinae, Cunaxoidinae, leaf litter, Neotropical Region, soil mites, taxonomy

### Introduction

Mites of the family Cunaxidae are cosmopolitan predators that occur in or on soil, leaf litter, moss, plants and stored products (Zhang 2003). This family is characterized by their raptorial and spine-equipped palpi (except for the subfamily Bonziinae) that are used to grapple prey and the diamond-shape body (Krantz & Walter 2009).

*Neocunaxoides* Smiley (1975) includes 15 species worldwide (Skvarla *et al.* 2014). *Neocunaxoides rykei* Den Heyer (1980) and *Neocunaxoides ovatus* Lin *et al.* (2003) are the only species of this genus previously reported from Brazil (Den Heyer 1980; Lin *et al.* 2003).

*Bonzia* Oudemans (1927) includes species present in North America, South America, Europe and New Zealand (Skvarla *et al.* 2014). Currently, no species of this genus have been reported from Brazil.

*Dactyloscirus* Berlese (1916) includes 26 species worldwide (Skvarla *et al.* 2014). *Dactyloscirus dolichosetosus* Den Heyer (1979) and *Dactyloscirus saopauloensis* Den Heyer & Castro (2012) have been reported from Brazil (Den Heyer 1979; Den Heyer & Castro 2012).

In this paper, we describe and illustrate three new species of Cunaxidae from southern Brazil, and present new records of additional species.

### Material and methods

Mites were collected from soil and leaf litter on Atlantic rainforest and Atlantic *Araucaria* forest at the Centro de Pesquisas e Conservação da Natureza (Center for Research and Conservation of Nature)—Pró-Mata (CPCN Pró-Mata), São Francisco de Paula municipality, Rio Grande do Sul, Brazil (between 29°27' and 29°35'S and 50°08' and 50°15' W) (Fig. 1). Specimens were examined and illustrated using a Leica® DM 750 binocular microscope under a phase contrast with a camera lucida, mounted in Hoyer's medium on glass slides. Pictures were taken with a Leica® DMLS3 binocular microscope and Olympus® SC30 camera. Setal notation follows Kethley (1990) as applied by Swift (1996) and modified by Fisher *et al.* (2011). Measurements are given in micrometers (µm), with their range given in parentheses. All new species have been registered with Zoobank.