



Diversity of spiders in Fanjing Mountain Nature Reserve, Guizhou, China, I: Six new species of Phrurolithidae (Araneae)

LU-YU WANG¹, HUI-MING CHEN², KE-XIN ZHOU^{3,5}, FENG ZHANG⁴ & ZHI-SHENG ZHANG^{1,5}

¹Key Laboratory of Eco-environments in Three Gorges Reservoir Region (Ministry of Education), School of Life Science, Southwest University, Chongqing 400715, China

²Guizhou Institute of Biology, Guizhou Academy of Sciences, Guiyang 550009, China

³Nanjing Institute of Environmental Sciences, Ministry of Environmental Protection of China, Nanjing, 210042, China

⁴College of Life Sciences, Hebei University, Baoding, 071002, China.

⁵Corresponding author. E-mail: zhoukexin@aliyun.com; zhangzs327@gmail.com

Abstract

Male and female specimens of six new spider species of the family Phrurolithidae were collected from the Fanjing Mountain Nature Reserve: *Otacilia microstoma* sp. nov., *O. songi* sp. nov., *O. subliupan* sp. nov., *Phrurolithus anticus* sp. nov., *P. fanjingshan* sp. nov. and *P. zhouyun* sp. nov.. Photographs, line drawings and descriptions of all species are provided in the current study. Additionally, the assignment of each species has been discussed on the basis of the type species of *Otacilia* Thorell, 1897 and *Phrurolithus* C. L. Koch, 1839.

Key words: taxonomy, morphology, illustration, description

Introduction

The Fanjing Mountain Nature Reserve, located in northeastern Guizhou Province, China, is within a transitional zone between the Yunnan-Guizhou Plateau and the Xiangxi hilly region, extending from 27°49'50" to 28°01'30"N and 108°49'30" to 108°18'30"E. Fanjing Mountain is also the highest peak of the Wuling Mountains. Because of its favourable climate, substantial rainfall and complex terrain, the whole reserve is densely forested, with a high floral biodiversity. The Fanjing Mountain Nature Reserve contains at least 2000 plant species, including more than 900 woody plant species. Twenty-one of these plants were listed as national protected species, such as *Davidia involucrata*, survived from the tertiary period (10 MYA), and at least 20 plants are considered endemic to Fanjing Mountain, such as *Abies fanjingshanensis* and *Tilia angustibracteata* (Qiu 2006). Preliminary exploration in the 1980s revealed 69 mammalian, 191 avian, 41 reptilian, 34 amphibian and 48 fish species in this area (Qiu 2006). Currently, the most important goal of the nature reserve is the protection of the seriously endangered mammal *Rhinopithecus brelichi* and its habitat.

A comprehensive survey of insects and spiders was performed in 2001. In total, 22 orders, 220 families, 1440 genera and 2105 species were recorded, including 126 spiders, belonging to 18 families and 71 genera (Song *et al.* 2006). However, this estimate of spider diversity is assumed to be far from the true diversity within this nature reserve. Beginning in July 2013, we have explored this nature reserve during different seasons. At present, we have identified more than 200 indigenous spider species; some of them are new or need to be revised.

This is the first study detailing the spider diversity of Fanjing Mountain Nature Reserve. Six new species are assigned to *Otacilia* Thorell, 1897 or *Phrurolithus* C. L. Koch, 1839, which are now placed in the recently elevated family Phrurolithidae Banks, 1892 (Ramírez 2014). Additionally, we present photographs of the type species of *Otacilia* (Figs 14A–C) and *Phrurolithus* (Figs 15A–G) to provide a better understanding of the assignment of these new species and the further revision of these two genera.