



The pitfalls of exaggeration: molecular and morphological evidence suggests *Kaliana* is a synonym of *Mesabolivar* (Araneae: Pholcidae)

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Abstract

When the Venezuelan genus *Kaliana* Huber, 2000 was described, it was based on a single male specimen that was morphologically unique among pholcid spiders, especially in its extremely exaggerated male genitalia. The morphology of the recently discovered female suggests a close relationship with *Mesabolivar* González-Sponga, 1998. Using molecular sequences (mitochondrial CO1, 16S, and nuclear 28S) of *Kaliana yuruani* Huber, 2000 and 53 other pholcid taxa (152 sequences, 19 of them sequenced in this study) in a Bayesian and a maximum parsimony approach, we show that *Kaliana* is not sister group of, but nested within the species-rich South American genus *Mesabolivar*. Therefore, we argue that *Kaliana* is a junior synonym of *Mesabolivar* (*Mesabolivar yuruani*, n. comb.). Complementing previous studies on pholcid phylogeny, we also present evidence for a close relationship between *Mesabolivar* and *Carapoia*, support the synonymy of *Anomalaia* and *Metagonia* with molecular data, support the monophyly of 'ninetines' and question the recently postulated position of *Priscula* as nested within the New World clade.

Key words: pholcid spiders, subfamily-level groups, *Metagonia*, *Carapoia*, *Priscula*, beta-taxonomy, phylogeny

Introduction

There seems to be a tendency for taxonomists to create new genera for highly 'aberrant' species. For example, when the first spider species with directionally asymmetric male genitalia was discovered, a new genus was erected for it (*Anomalaia* González-Sponga, 1998). Subsequent morphological studies strongly suggested that *Anomalaia mariguitarensis* is just an unusual representative of the widespread and species-rich Neotropical genus *Metagonia* Simon, 1893 (Huber 2000, 2004). Our focus here is on a similar case. The genus *Kaliana* Huber, 2000 was established for a single and extremely unusual male specimen from Venezuela. The procurus, a male genital structure of pholcid spiders, is in this species about six times as long as in other representatives of the family. Other autapomorphic characters include the shape of the eye turret, the modifications of the clypeus, and the armature of the chelicerae.

During an expedition to Venezuela in 2004, further specimens of *Kaliana yuruani* Huber, 2000 were collected, and a simple but unique female character—the median pocket (Fig. 4; see also Huber 2006)—suggested an affinity to the widespread and species-rich South American genus *Mesabolivar* González-Sponga, 1998. This median pocket, located ventrally on the female genital plate (epigynum), has in fact been the only morphological synapomorphy of *Mesabolivar* (Huber 2000). Morphology thus suggested *Kaliana* to be either the sister group of *Mesabolivar* or to be nested within (and thereby a synonym of) *Mesabolivar*—without being able to falsify one of these two hypotheses. Here we use molecular evidence to test these phylogenetic hypotheses.

We also use molecular data to highlight close evolutionary ties between *Mesabolivar* and *Carapoia*