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Tisaniba, a new genus of marpissoid jumping spiders from Borneo (Araneae: Salticidae)

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Abstract

Six new species of marpissoid jumping spiders from Sarawak, Borneo, are described in the new genus *Tisaniba* Zhang & Maddison. They are the type species, *T. mulu* Zhang & Maddison **sp. nov.**, as well as the species *T. bijibijan* Zhang & Maddison **sp. nov.**, *T. dik* Zhang & Maddison **sp. nov.**, *T. kubah* Zhang & Maddison **sp. nov.**, *T. selan* Zhang & Maddison **sp. nov.**, and *T. selasi* Zhang & Maddison **sp. nov.** The spiders are small and brown to black, living in leaf litter in the tropical forest. Phylogenetic analyses based on 28s and 16sND1 genes indicate that they are a distinctive group within the marpissoids. Diagnostic illustrations and photographs of living spiders are provided for all species.

Key words: Araneae, Salticidae, Marpissoida, new genus, new species, jumping spider, molecular phylogeny, Borneo

Introduction

The jumping spider clade Marpissoida (Maddison & Hedin, 2003; Bodner & Maddison, 2012) is known to include two major subclades, the smaller Ballinae of the Old World (Benjamin, 2004), and a large, primarily New World, clade including the Dendryphantinae, Marpissinae, and some smaller groups (e.g., synagelines, *Attidops* Banks, *Itata* Peckham & Peckham; see Bodner & Maddison 2012). Among the several hundred marpissoid species, most are tree trunk or foliage dwellers (Maddison, unpublished), with only a handful of genera having ground dwelling species (e.g. *Leikung* Benjamin, *Marpissa* C. L. Koch, *Synageles* Simon, *Terralonus* Maddison). We here report the discovery of a third major subclade, a group of small leaf-litter dwelling salticids from Borneo, the new genus *Tisaniba*.

Material and methods

Photographs of living specimens were taken with a Pentax Optio 33WR digital camera. For the macro capability, a small lens was glued to it. Photographs of preserved specimens were taken under a Leica MZ16 dissecting microscope with Leica Application Suite version 3.1.0. Preserved specimens were examined under both dissecting microscopes and a compound microscope with reflected light. Drawings were made with a drawing tube on a Nikon ME600L compound microscope.

Terminology is standard for Araneae. All measurements are given in millimeters. Descriptions of color pattern are based on the alcohol-preserved specimens. Carapace length was measured from the base of the anterior median eyes not including the lenses to the rear margin of the carapace medially; abdomen length to the end of the anal tubercle. Specimens are deposited in the Spencer Entomological Collection at the Beaty Biodiversity Museum, University of British Columbia (UBC-SEM). Specimen identifiers are given in two ways, one (UBC SEM ARxxxxx) is the museum's number, the other (SWK12-xxx) is a field number derived from photographs.

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Phylogenetic trees inferred are shown in Fig. 73 for the broad sample dataset and Fig. 74 for the marpissoid dataset. The broad phylogeny, using only two gene regions, has a few clear deep misplacements (e.g. *Cesonia*, *Cheiracanthium*), but otherwise is in concordance with previous results with more genes and taxa (e.g., Bodner & Maddison, 2012).

Tisaniba is placed within the Marpissoida, as sister group to the Ballinae in all 20 of the broad-sample search replicates (Fig. 73). With the more restricted marpissoid data set, *Tisaniba* continued to fall within the marpissoida, but the bootstrap analysis was unable to place *Tisaniba* clearly with either the Ballinae or the other marpissoids. This and the pattern of branch lengths (Fig. 73) suggests that *Tisaniba* branches deep within the Marpissoida, and can be considered a third major group of Marpissoida, alongside the Ballinae and the large primarily New World clade including the Marpissinae and Dendryphantinae.

This placement of *Tisaniba* is in accord with morphology. The embolic spiral and its orientation, as well as the furrow across the tegulum, make the male palp closely resemble ballines and some other marpissoids such as *Attidops*. Indeed, with *Attidops*, ballines and *Tisaniba* all branching deep in the marpissoids, their common form of palp could be credibly argued as the ancestral form for marpissoids.

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