



Description of the male of the spider *Dubiaranea difficilis* (Araneae: Linyphiidae), with new records and modeling of its potential geographic distribution

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Abstract

The male of *Dubiaranea difficilis* (Mello-Leitão 1944) is described and illustrated for the first time. New geographic records of this species are provided, and its potential distribution is modeled using MAXENT. The actual and potential distribution of *Dubiaranea difficilis* proved to be much larger than the hitherto known records. This species inhabits at least in three ecoregional sectors in Argentina (northwestern area, central Sierras, and the Pampas), and is also likely that inhabits in Brazil and Bolivia. Possible causes of its wide and environmentally heterogeneous distribution are discussed.

Key words: Argentina; Dubiaraneinae; Neotropical region; spider taxonomy

Introduction

The spider genus *Dubiaranea* Mello-Leitão 1943, currently including about 100 species, is by far the largest linyphiid genus in South America, although the number of species is suspected to be much higher, possibly doubling that amount (Millidge 1991). Of the known species 36 occur in Peru, 18 in Colombia, 17 in Ecuador, 15 in Chile, seven in Bolivia, six in Venezuela, five in Brazil, and only three have been recorded from Argentina: *D. difficilis* (Mello-Leitão 1944), *D. remota* Millidge 1991 and *D. tristis* (Mello-Leitão 1941). In addition, two further species are known from such distant places like Borneo and Juan Fernández islands, with one species each (Platnick 2009).

The latest revision of *Dubiaranea* was carried out by Millidge (1991), and the 80 new species treated there represent 80% of the species known today. However, only 27 species are known from both males and females, and 48 are just based on females. Moreover, several of the species were described on a single specimen, so that intraspecific variability is completely unknown. This is the case of *D. difficilis*, which was described by Mello-Leitão (1944) based on a female and originally placed in the tetragnathid genus *Paranesticus* Mello-Leitão (1944). Millidge (1991) transferred *difficilis* to its current generic placement and illustrated the female genitalia for the first time. Nevertheless, the species was hitherto recorded only from two localities in Argentina (Millidge 1991; Grismado 2007), so that our knowledge on its distribution is clearly incomplete. As a result of an ecological study in northwestern Argentina, together with miscellaneous samples obtained in the central region of the country, additional specimens of both sexes were collected, providing evidence of a much larger range than previously known. Mating couples observed in the field (Fig. 1) provided definitive support to the conspecificity of males and females in our samples.

Geographic distribution can help with species identification in speciose genera, and *Dubiaranea* is no exception. Based on the present knowledge, most species of this genus appear to be quite limited in their ranges, and a species collected at 10° S, for example, is deemed unlikely to be present at 5° N or 30° S,