



## The cobweb spiders of the genus *Anelosimus* Simon, 1891 (Araneae: Theridiidae) in Hainan Island, China

BAO-SHI ZHANG<sup>1</sup>, LONG LIU<sup>2</sup> & FENG ZHANG<sup>2,3</sup>

<sup>1</sup>Baoding University, Baoding, 071051, P. R. China. E-mail: zhangbaoshi01@163.com

<sup>2</sup>College of Life Sciences, Hebei University, Baoding, Hebei 071002, P. R. China

<sup>3</sup>Corresponding author. E-mail: dudu06042001@163.com

### Abstract

Five species of the spider genus *Anelosimus* Simon, 1891 (Theridiidae) are reported from Hainan Island, China, including two new species: *Anelosimus membranaceus* n. sp. (male, female) and *A. subcrassipes* n. sp. (female). *A. seximaculatum* (Zhu, 1998) n. comb. is transferred from the genus *Theridion* Walckenaer, 1805. The male of *A. seximaculatum* and the female of *A. chonganicus* Zhu, 1998 are described and illustrated for the first time.

**Key words:** *Anelosimus*, taxonomy, new species, new combination, China

### Introduction

Species of the spider family Theridiidae are small to medium in size. In terms of the numbers of described species, it is the fifth largest among Araneae, with 112 genera and 2308 species worldwide (Platnick 2010). To date, 48 genera and 278 Theridiidae species have been recorded in China (Zhu 1998; Song, Zhu & Chen 1999; Platnick 2010).

The genus *Anelosimus* was erected by Simon in 1891. It was treated as a junior synonymy of *Theridion* Walckenaer, 1805, but was removed by Archer (Archer 1950). Levi (1956, 1963) revised *Anelosimus* species from America. *Anelosimus* taxonomy, phylogenetic relationships, social behavior and color polymorphism were further studied by Agnarsson & Kuntner (2005), Agnarsson (2005, 2006), Agnarsson & Zhang (2006), and Agnarsson *et al* (2009). A total of 54 *Anelosimus* species are described, found worldwide in tropical to warm temperate areas (Levi 1967, 1972; Fowler & Levi 1979; Roberts 1983; Yoshida 1993; Barrion & Litsinger 1995; Paik 1996; Miller 2004; Agnarsson & Zhang 2006; Platnick 2010). Only twelve species are known from Asia, including the new taxa here (Fig. 19), and seven species were known from southern China (Yoshida 1986; Zhu 1998; Song, Zhu & Chen 1999).

Hainan Island is located in the South China Sea, separated from Guangdong's Leizhou Peninsula by the shallow and narrow Oingzhou strait. Some 20 million years ago, Hainan Island was still connected to the mainland. At that time, spiders could move to settle in what is now Hainan Island. The island separated from the mainland in the Late Tertiary to Early Quaternary period. In the late Pleistocene epoch, it connected to the mainland again and separated again in the Holocene epoch.

During the examination of spider specimens collected from Hainan Island, two new species, *A. membranaceus* n. sp. and *A. subcrassipes* n. sp. were recognized and are described here. Our study also revealed that *A. seximaculatum* (Zhu, 1998) n. comb., which was originally designated to the genus *Theridion*, is here transferred to *Anelosimus*. The male *A. seximaculatum* and female *A. chonganicus* Zhu, 1998 are described and illustrated for the first time.

### Material and methods

Terminology is standard for Araneae. All specimens were kept in 75% ethanol and examined, drawn and measured under a Tech XTL-II stereomicroscope equipped with an Abbe drawing device. Carapace length was measured