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# Leptonetid spiders from caves of the Yunnan-Guizhou Plateau, China (Araneae: Leptonetidae)

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## Abstract

A total of 27 species of the family Leptonetidae occurring in caves of the Yunnan-Guizhou Plateau, Southwest China, are described, including two new genera, 26 new species and one new combination as follows: *Guineta gigachela* **gen. nov.** and **sp. nov.**; *Leptonetela anshun* **sp. nov.**, *L. bama* **sp. nov.**, *L. curvispinosa* **sp. nov.**, *L. danxia* **sp. nov.**, *L. digitata* **sp. nov.**, *L. furcaspina* **sp. nov.**, *L. geminispina* **sp. nov.**, *L. grandispina* **sp. nov.**, *L. hamata* **sp. nov.**, *L. hexacantha* **sp. nov.**, *L. jinsha* **sp. nov.**, *L. jiulong* **sp. nov.**, *L. liping* **sp. nov.**, *L. maxillacostata* **sp. nov.**, *L. meitan* **sp. nov.**, *L. oktocantha* **sp. nov.**, *L. palmata* **sp. nov.**, *L. pentakis* **sp. nov.**, *L. reticulopecta* **sp. nov.**, *L. suae* **sp. nov.**, *L. tetracantha* **sp. nov.**, *L. tongzi* **sp. nov.** and *L. yangi* **sp. nov.**; *Sinoneta notabilis* **gen. nov.** and **sp. nov.**, *S. sexdigiti* **sp. nov.** In addition, *Leptonetela quinquespinata* (Chen & Zhu, 2008) is transferred from *Qianleptoneta* Chen & Zhu, 2008. The morphology of *Guineta* **gen. nov.** and *Sinoneta* **gen. nov.** are studied. Keys to all genera from China and 27 species from Yunnan-Guizhou Plateau are given. All type specimens in this study are collected from caves of Yunnan-Guizhou Plateau, southwestern China and are deposited at the Institute of Zoology, Chinese Academy of Sciences in Beijing (IZCAS).

**Key words:** Taxonomy, new species, troglobites, diagnosis, distribution

## Introduction

The spiders of the family Leptonetidae are small (1.0–3.0 mm), three-clawed, haplogyne, characterized by a distinctive six-eyed pattern with the posterior median eyes separated from the strongly recurved anterior lateral eyes and posterior lateral eyes, rarely with eyes continuous, or degenerate to four, two, or even none (Song *et al*. 1999). Leptonetids generally live in hollows, under detritus or in caves. These spiders construct an irregular and fairly large space-web and often carry their egg sac or hang it beneath the web. Each egg sac usually contains from 1 to 4 eggs. Previously, the families Leptonetidae and Telemidae were treated as two subfamilies within a single family (Fage 1913; Simon 1914). They have been treated as different families since the time of Petrunkevitch (1923). Brignoli (1979a) first realized that the Leptonetidae did not share any synapomorphies with other haplogyne families, and suggested that it should be placed in a superfamily of its own. Based on the web type, Shear (1986) placed the families Leptonetidae, Ochyroceratidae, and Pholcidae in the superfamily Pholcoidea. Platnick (1986) found that Leptonetidae shared cuticular gland plates on the legs with Telemidae, and placed them in Scytodoidea, together with Ochyroceratidae as a sister-group (Platnick *et al.* 1991). Coddington (2005) followed the sister-group relationship between Leptonetidae and Telemidae.

A total of 16 genera and 210 leptonetid species have been recorded worldwide (Platnick 2010). They occur in three disconnected regions: the Mediterranean area, East Asia, and North America (Platnick 1986). North America species were revised by Gertsch (1973b), who recognized two North American genera: *Leptoneta* and *Archoleptoneta. Archoleptoneta* was assigned to the subfamily Archoleptonetinae. Species of *Neoleptoneta* from Mexican were transferred to *Leptoneta* by Gertsch (1971, 1973a). Brignoli (1977) questioned the synonymization of *Neoleptoneta* and *Paraleptoneta* with *Leptoneta* by Gertsch and claimed that there might be 4 or 5 genera in North America. Upon studying the morphology Emerit's gland on the legs, Platnick (1986) favored Brignoli's opinion.

There are eight genera and 65 recorded leptonetid species in the Mediterranean area, including the genera *Leptoneta* Simon (1872), *Paraleptoneta* Fage (1913), *Sulcia* Kratochvíl (1938), *Cataleptoneta* Denis (1955), *Protoleptoneta* Deltshev (1972), *Barusia* Kratochvíl (1978), *Leptonetela* Kratochvíl (1978), and *Teloleptoneta* Ribera (1988). East Asia has 45 species in the genera *Masirana* Kishida (1942, in Komatsu 1942), *Falcileptoneta* Komatsu (1970), and 36 others in *Leptoneta* Simon (1872). The leptonetid fauna from Japan was revised by Irie and Ono (2009). Members of *Leptoneta* from East Asia and the Mediterranean need to be further studied, particularly their generic placement. Murphy and Murphy (2000) discussed the spider fauna in Southeast Asia and pointed out that China's leptonetid spider fauna is complex and all species might not belong to *Leptoneta*.

The study on China's Leptonetidae began in the 1980s. A cave species from Zhejiang, *Leptoneta huanglongensis*, was first reported by Chen *et al*. (1982). Subsequently, six species of *Leptoneta* were described from Zhejiang (Chen *et al*. 1984; Chen & Zhang 1991, 1993; Chen *et al*. 1986; Song & Kim 1991),