



***Telaprocera* (Araneae: Araneidae), a new genus of Australian orb-web spiders with highly elongated webs**

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Abstract

A new genus of orb-web spider (Araneidae Simon), *Telaprocera* **gen. nov.**, including two new species, *T. maudae* **sp. nov.** (type species) and *T. joanae* **sp. nov.**, are described. *Telaprocera* **gen. nov.** differs from all other araneid genera by the presence of a dorsal keel on the male cymbium. The known range of *Telaprocera maudae* **sp. nov.** is limited to the east coast of Australia, from far northern Queensland to central New South Wales. The spiders are found in closed canopy rainforest and adults can be found year round. *Telaprocera joanae* **sp. nov.** has been found from central coastal Queensland to far eastern Victoria. They occur in similar habitats, with similar phenology, as *T. maudae* **sp. nov.** Both species build highly elongated orb-webs known as ladder-webs. A variety of phylogenetic analyses based on an updated morphological data matrix for orb-web spiders did not provide a conclusive placement of *Telaprocera* **gen. nov.** within the Araneidae. Equally weighted analysis placed the genus as sister to *Kaira* O. P.-Cambridge and *Metepeira* F. O. P.-Cambridge combined. Strong downweighting of homoplasious characters placed the genus as sister taxon to the traditional Argiopinae Simon. The uncertain phylogenetic position of *Telaprocera* **gen. nov.** may reflect the insufficient knowledge of the morphology of Australian taxa—taxa that may possess characters previously not considered in phylogenetic analyses of the Araneidae.

Key words: ladder-web, web modification, cymbial keel, *T. maudae*, *T. joanae*

Introduction

The Araneidae represent one of the largest spider families comprising more than 2800 species in 166 genera (Platnick 2008). A high degree of variation characterises the morphology, behaviour, and web architecture of araneid spiders (e.g. Eberhard 1990; Heiling & Herberstein 2000; Levi 2002, 2005). The predatory behaviour of the Araneidae is typified by the classic orb-web constructed by many of the species within this family (Scharff & Coddington 1997 and references therein). However, there are many examples of modifications to the basic orb-web structure. Most web modifications are evident as reductions in the orb, such as the asterisk web built by *Ocrepeira ectypa* (Walckenaer) (e.g. Stowe 1978), or the bolas used by *Mastophora* Holmberg (e.g. Eberhard 1977). On the other hand, there are also instances where extensions of the orb-web have evolved, such as the three-dimensional tangle-threads above the horizontal orb-webs of *Cyrtophora* Simon (Lubin 1973; Framenau 2008), *Mecynogea* Simon (Willey *et al.* 1992), or *Metepeira* F. O. P.-Cambridge (Levi 1977). One of the most extreme examples of web extension can be seen in "ladder-webs". This term is generally used for highly elongated orb-webs that are many times taller than wide (e.g. Eberhard 1975; Forster & Forster 1985). Several araneoid taxa worldwide build ladder-webs, each with a unique web architecture. The