



Description of a new orb-weaving spider species representing the first record of *Novaranea* in Australia (Araneae: Araneidae: Araneinae)

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Abstract

The orb-weaving spider genus *Novaranea* Court & Forster, 1988, previously known only from New Zealand, is here reported from Australia for the first time with the description of a new species. Generic affinities, here based on characteristic shapes of the median and terminal apophyses of the male pedipalp, remain somewhat ambiguous as some of the endemic New Zealand araneine genera remain to be tested within a rigorous phylogenetic analysis. *Novaranea courti* n. sp. is found in the southeastern parts of Australia, including New South Wales, Victoria and Tasmania. Mature spiders are generally found between January and March, although some specimens were collected in April, June and November. *Novaranea courti* n. sp. appears to prefer forest habitats (e.g. Southern Beech (*Nothofagus*) forest and *Eucalyptus/Casuarina* woodland), but was also found in more open areas such as grass- and heathland.

Key words: *Cryptaranea*, *Araneus*, New Zealand, Gondwana

Introduction

The New Zealand orb-weaving spider fauna of the subfamily Araneinae Clerck, 1758 includes an endemic element consisting of four genera (*Colaranea* Court & Forster, 1988, *Cryptaranea* Court & Forster, 1988, *Novaranea* Court & Forster, 1988 and *Zealaranea* Court & Forster, 1988) and species in other genera that have presumably reached the country naturally or through human activity from Australia or the Pacific, such as *Argiope* Audouin, 1826, *Acroaspis* Karsch, 1878, *Backbourkia* Framenau, Dupérré, Blackledge, & Vink, 2010 and *Neoscona* Simon, 1864 (Court & Forster 1988; Framenau *et al.* 2010a; Paquin *et al.* 2010). The endemic genera have clear morphological affinities to Northern Hemisphere *Araneus* Clerck, 1758. Like true *Araneus* (as represented by its type species *A. angulatus* Clerck, 1758) and allied genera, females in the New Zealand endemics have a wrinkled scape with a terminal pocket. This terminal pocket is important during copulation as a basal thorn of the median apophysis of males locks into it (copulation of the *Araneus*-type; e.g. Grasshoff 1973). In addition, *Araneus* and allied taxa as limited above lack a paramedian apophysis and have two macrosetae on the pedipalp patella (e.g., Levi 1971). This general morphology is very different to most Australian araneids which follow a morphological groundplan similar to *Eriophora* Simon, 1864: females generally have a long scape which is much less, if at all, wrinkled and does not have a terminal pocket. Male pedipalps have a single patella macroseta, a paramedian apophysis and a median apophysis with a basal arch over the radius instead of a pointy tip (Davies 1980; Framenau *et al.* 2010a). To my knowledge, the mechanics of copulation in the *Eriophora*-type genitalia remains unknown. The morphological differences between the two types of genitalia appear to reflect, at least to some extent, phylogenetic relationships with some representatives of both groups forming distinct clades, *Araneus*-type = “clade 58” and *Eriophora*-type = “clade 53” in Scharff and Coddington's (1997) classic phylogenetic analysis of the Araneidae Clerck, 1758. We currently lack a detailed biogeographic explanation why an endemic group of New Zealand araneids appears to have closer phylogenetic relationships to what are predominantly Northern Hemisphere spiders rather than to