

First records of *Maratus robinsoni* Otto & Hill 2012 and *Maratus vultus* Otto & Hill 2016 (Araneae: Salticidae: Euophryini: *Maratus* Karsch 1878) from Victoria, Australia

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Abstract. The first records of *Maratus robinsoni* Otto & Hill 2012 and *Maratus vultus* Otto & Hill 2016 (Araneae: Salticidae: Euophryini) from Victoria, Australia are reported following a survey of the spider fauna of the Little Desert National Park and surrounding areas on a Bush Blitz expedition. Photographs of the specimens observed and an updated map of the distribution of both species are provided.

Keywords. Bush Blitz, distribution record, Kaniva, Little Desert National Park, peacock spiders

Adult males of the endemic Australian peacock spider genera *Maratus* Karsch, 1878 and *Saratus* Otto & Hill 2017 can be distinguished from other euophryine genera by the presence of a dorsal opisthosomal plate covered with often vibrantly coloured scales, an elongated and usually ornamented third pair of legs, and by the behaviour of most species, the males of which elevate the opisthosoma and wave the third pair of legs to display to females (Hill & Otto 2011; Girard et al. 2011; Schubert 2019a).

At present, there are 86 described species of peacock spiders, 85 of which belong to the genus *Maratus* and one belonging to the monotypic genus *Saratus* (Otto & Hill 2019a, 2019b; Schubert 2020). While the genus *Maratus* is species rich with 85 currently recognised species, the vast majority of these are recent discoveries with 73 species having been described in the last 12 years (Otto & Hill 2019; Schubert 2019b; World Spider Catalog 2020). Consequently our understanding of fundamental aspects of their ecology such as their geographical distribution is still in its infancy.

Here, the first records of *Maratus robinsoni* Otto & Hill 2012 and *Maratus vultus* Otto & Hill 2016 in Victoria are reported, being only known previously from eastern New South Wales and far-southern Western Australia respectively (Otto & Hill 2012, 2016, 2019a). These records are the result of a survey of the Araneae of the Little Desert National Park, Victoria, Australia conducted and funded by Bush Blitz Australia. Bush Blitz is a species discovery partnership program between the Australian Government, BHP Billiton Sustainable Communities, and Earthwatch.

Based on our current understanding of the distribution of each of the Australian peacock spider species as per Otto & Hill 2019 and Schubert 2020, 47 of the 86 species could potentially be considered short-range endemics. However, as demonstrated here, increased targeted survey efforts may reveal that the ranges of some of these species extend significantly further than previously known.

Materials and Methods

The Araneae of the Little Desert National Park and surrounding areas were surveyed by J. Schubert and B. Baehr on a Bush Blitz expedition during October 2019. During this time, the specimens examined in this study were collected via the following methods:

- i) Pitfall trapping: Dry pitfall traps which were initially set up to collect small reptiles were opportunistically checked for spiders. A single male *Maratus robinsoni* was collected in one of these traps.
- ii) Net sweeping: A large net was swept through vegetation, causing spiders in the vegetation to fall into the net. A single male *Maratus vultus* was found using this method.
- iii) Direct searching: Sections of mallee shrubland were targeted and observed by eye for movement of salticids in the vegetation and captured by hand, resulting in the collection of an additional *Maratus vultus* specimen.

Images of the living spiders involved in this study were produced using an Olympus OM-D EM-1 Mark ii digital camera with a 60mm macro lens attached. Latitude and longitude were determined using a GPS receiver. The specimens were preserved in 96% ethanol and further examined with a Motic SMZ168 microscope and compared with the type material figured in Otto & Hill 2012 and Otto & Hill 2016. The specimens were then lodged in Museum Victoria's research collection.

Distribution maps were created using information provided by NASA Visible Earth imaging, and measurements of geodesic distance between historic and new locality records of species were produced using the measurement tool on Google Earth.

The total number of 'currently recognised' species refers to the list of species provided in Otto & Hill's catalogue of Australian peacock spiders (2019a) and the species recently described by Otto & Hill (2019b) and Schubert (2020), excluding all taxonomically misplaced species considered to be *incertae sedis* or *genus incertus* (Otto & Hill 2012, 2014). 'Short-range endemic' refers to any species that is restricted to a range nominally less than 10,000 km² (Harvey 2002).

Maratus robinsoni Otto & Hill 2012

(Figures 1A–D, 2)

Material examined. 1♂, Kaniva, Victoria, 36°31'45.8"S 141°24'07.9"E, 23 OCT 2019, coll. J. Schubert & B. Baehr, deposited in Museums Victoria collection. Type material observed via Figures 43–50 in Otto & Hill 2012: 3♂, Newcastle, New South Wales, 32° 59' 50.42" S, 151° 42' 17.22" E, 15 OCT 2012, coll. J. Otto and P. Robinson (via Otto & Hill 2012). 2♂, Newcastle, New South Wales, 32° 59' 50.42" S, 151° 42' 17.22" E, 22 OCT 2012, coll. J. Otto and P. Robinson (via Otto & Hill 2012). 1♂ Pilliga, New South Wales, 30° 21' 31.23" S, 148° 53' 17.82" E, 2 OCT 2012, coll. J. Otto (via Otto & Hill 2012). 1♂ Munmorah State Recreation Reserve, 33° 12' 46" S, 151° 34' 57" E, 27 NOV 1997, coll. L. Wilkie (via Otto & Hill 2012).

Diagnosis. Male. Opisthosoma rotund, dorsal surface black and distinctly marked with two longitudinal tracts of iridescent scales which extend ~1/3 the length of the opisthosoma from the anteromedial margin, and bordered by a wide 'U' shaped (when viewed from the rear) band of iridescent scales which change colour depending upon which angle they are viewed from. Pedipalp with conical proximal tegulum, an inward projection on the medial side of the relatively large circular ring of the embolus, and the apex of the embolus has a convergent inner and outer edge.

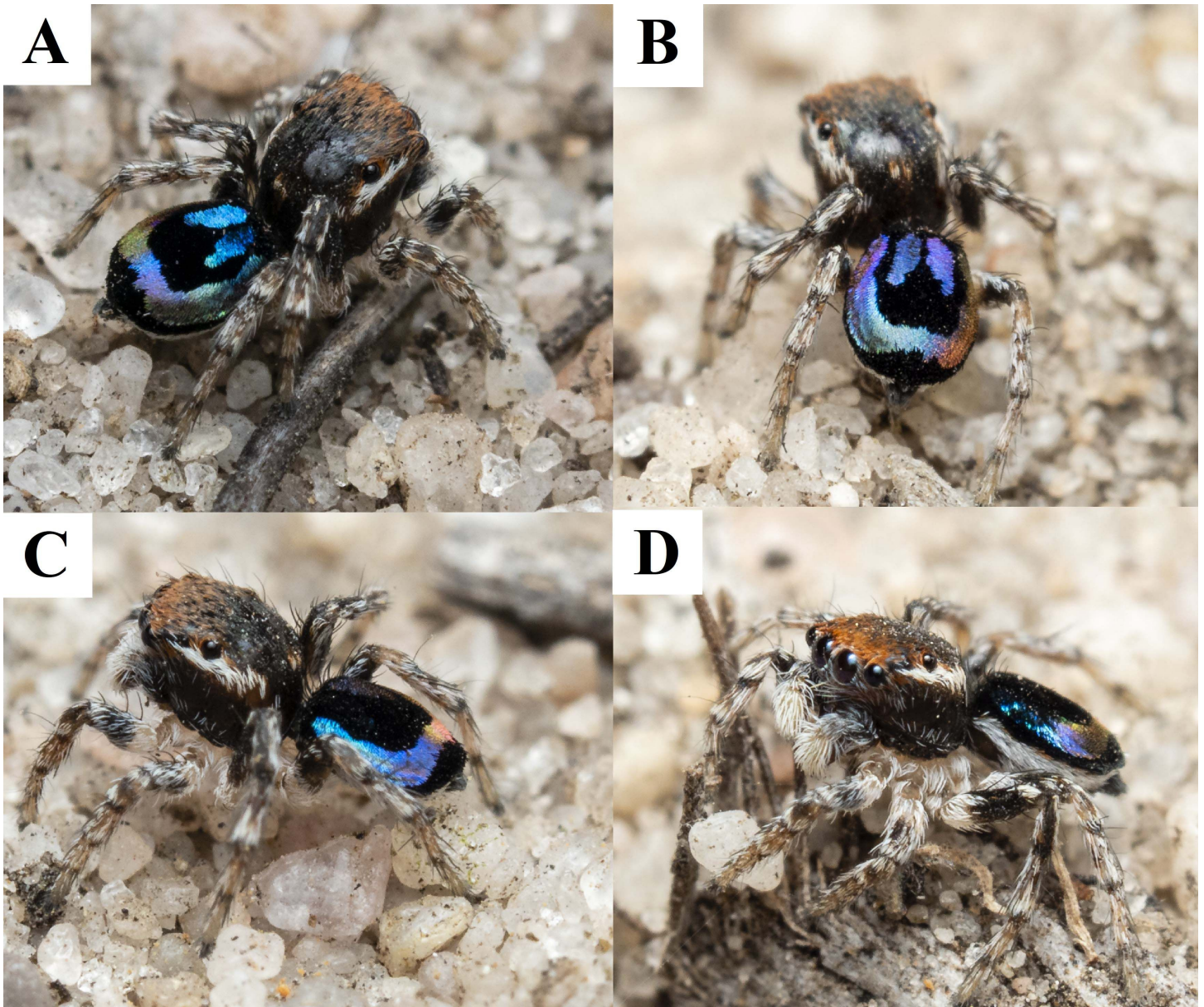


Figure 1. Images of the habitus of the *Maratus robinsoni* specimen collected in Kaniva, Victoria. **A**, Dorsolateral view. **B**, Dorsal view. **C**, Lateral view. **D**, Anterolateral view.

Remarks. Historic records of *Maratus robinsoni* are known from specimens collected near Newcastle, on the eastern coast of New South Wales, and a specimen collected further inland from Pilliga, New South Wales (Otto & Hill 2012). The discovery of *Maratus robinsoni* in Kaniva, Victoria significantly extends its known range by approximately 650 geodesic kilometres in relation to its nearest historic record (Figure 2).

Otto & Hill (2012, 2019) report that in captivity, this small species will burrow in sand to conceal itself. This behaviour is also consistent with the male specimen examined in this study, which was found in a sandy habitat, suggesting that this species may have a preference for sandy terrain.

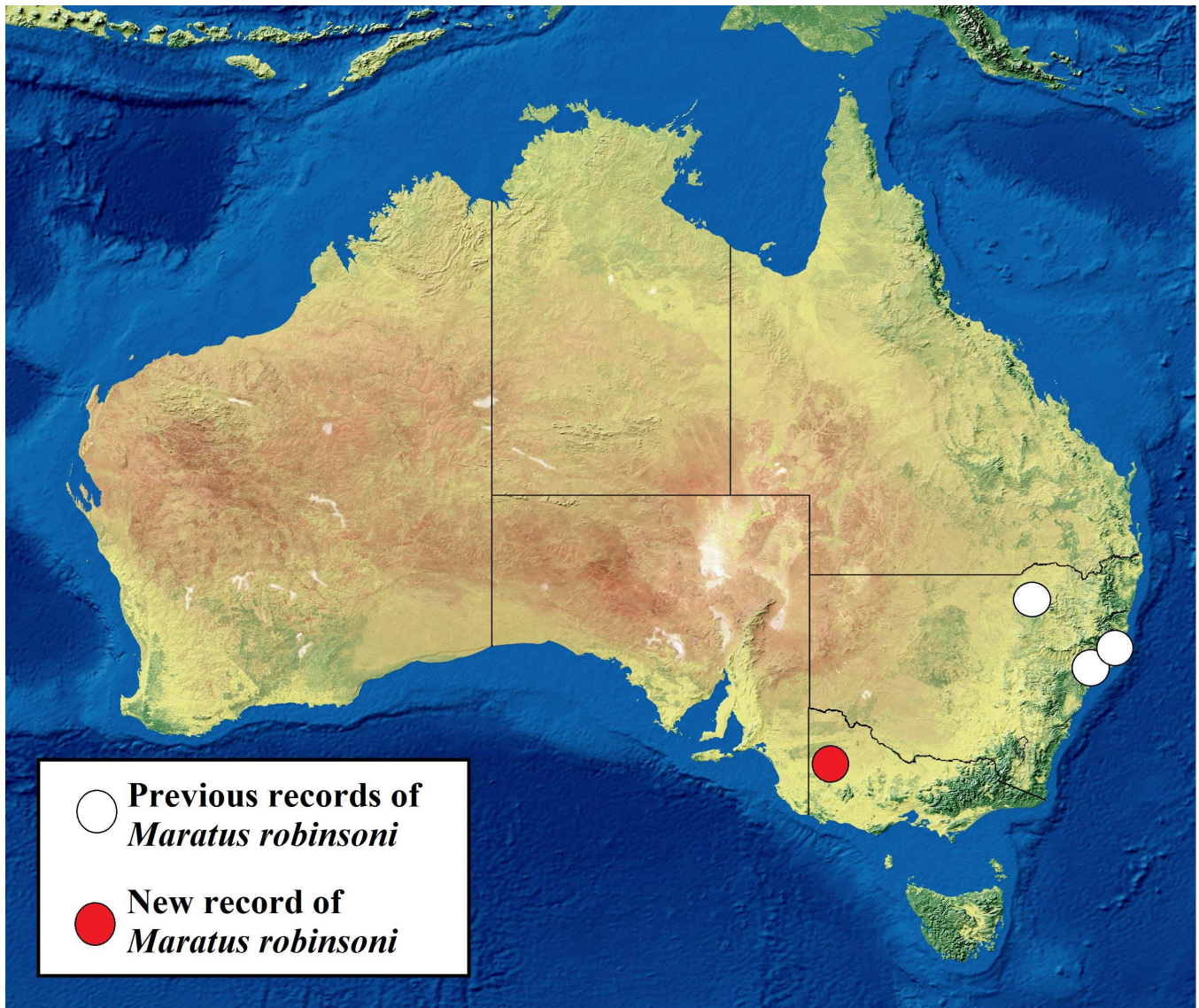


Figure 2. Distribution of *Maratus robinsoni* in Australia. Previously known distribution indicated by white circles and new record indicated by red circle.

***Maratus vultus* Otto & Hill 2016**
(Figures 3A–D, 4)

Material examined. 1♂, Kaniva, Victoria, 36°31'45.8"S 141°24'07.9"E, 24 OCT 2019, coll. J. Schubert & B. Baehr, deposited in Museums Victoria collection. Type material observed via Figures 103–108 in Otto & Hill 2016: 2♂, Point Ann, Fitzgerald River National Park, Western Australia, 34.16954 °S, 119.5794 °E, 17 OCT 2013, coll. J. Otto and D. Knowles (via Otto & Hill 2016).

Diagnosis. Male. Dorsal opisthosomal plate covered with iridescent blue-green or purple scales and marked with distinctive, complex, orange figure anteriorly and a pair of black spots bordered by orange scales posteriorly. Ocular quadrangle region with uniform cover of orange scales. Two dorsolateral bands of white scales extend from ocular quadrangle to posterior margin of carapace, carapace lacking marginal band. Embolus of pedipalp with prominent outer ring terminating in bifurcated apex, and short inner ring with pointed apex.

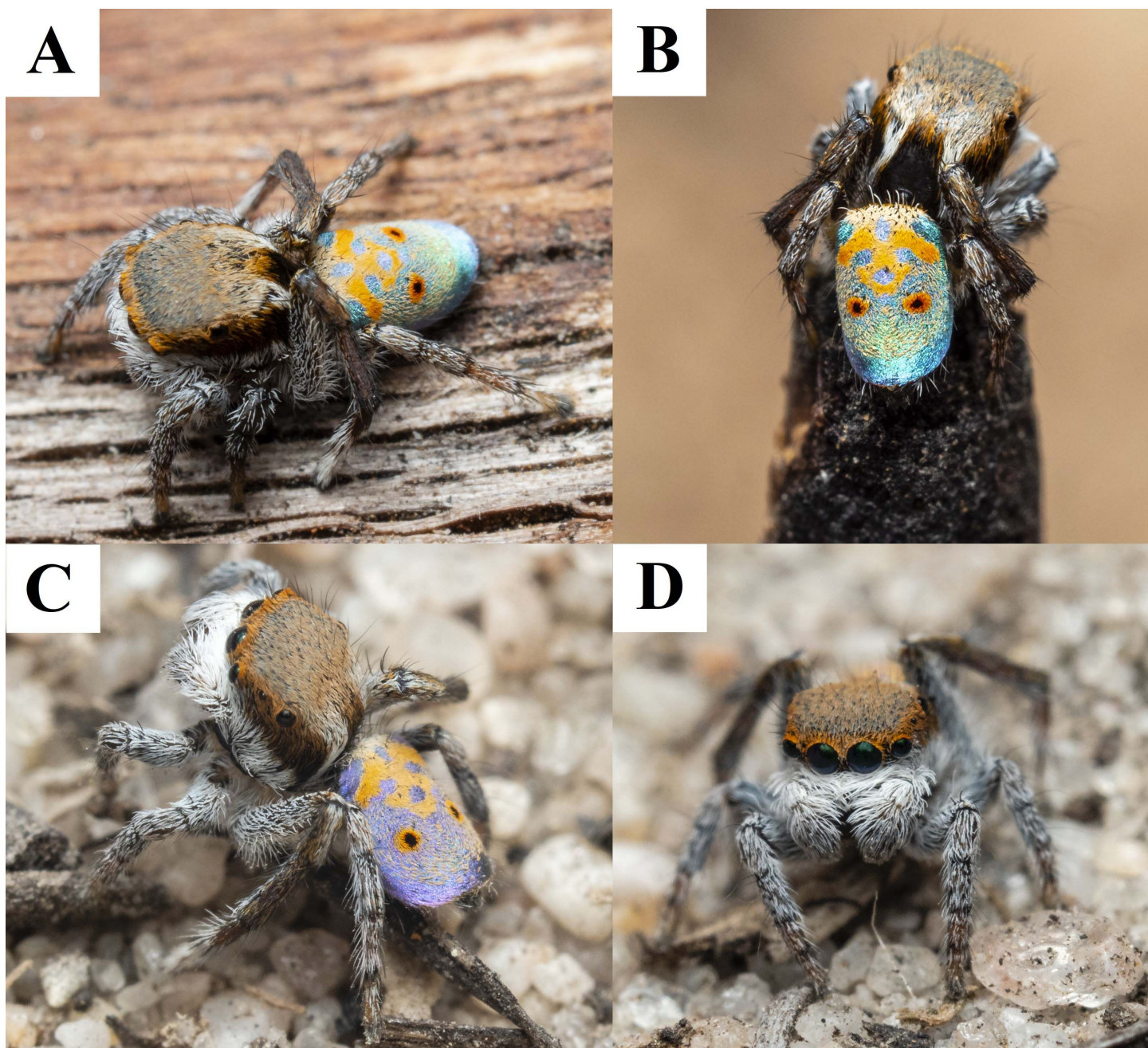


Figure 3. Images of the habitus of the *Maratus vultus* specimens collected in Kaniva, Victoria. A, Male #1 dorsolateral view. B, Male #1 dorsal view. C, Male #2 anterolateral view. 4, Male #2 anterior view.

Remarks. Historic records of *Maratus vultus* are known only from specimens collected from the type locality at Point Ann in Fitzgerald River National Park, Western Australia (Otto & Hill 2016), and identified from photographs in Esperance, Western Australia, and Windy Harbour, Western Australia (iNaturalist 2019). The discovery of *Maratus vultus* in Kaniva, Victoria significantly extends its known range by approximately 1,800 geodesic kilometres in relation to its closest historic record (Figure 4).

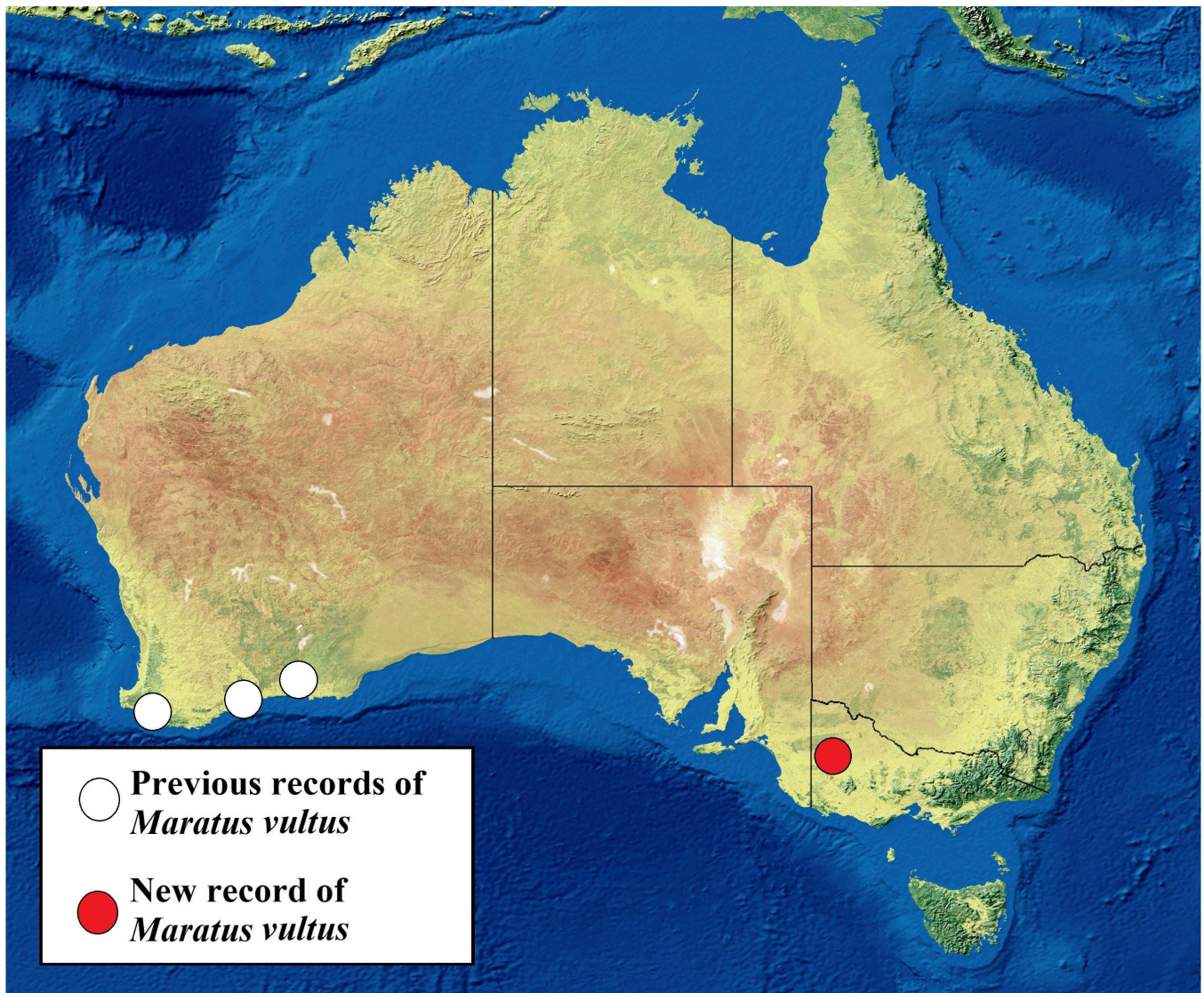


Figure 4. Distribution of *Maratus vultus* in Australia. Previously known distribution indicated by white circles and new record indicated by red circle.

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