

Catalogue of the Australian peacock spiders (Araneae: Salticidae: Euophryini: *Maratus*, *Saratus*)

Jürgen C. Otto¹ and David E. Hill²

¹19 Grevillea Avenue, St. Ives, New South Wales 2075, Australia, *email* jurgenotto@optusnet.com.au

²213 Wild Horse Creek Drive, Simpsonville, SC 29680-6513, USA, *email* platycriptus@yahoo.com

Presently the Australian peacock spiders are assigned to two genera, *Maratus* Karsch 1878 and *Saratus* Otto & Hill 2017. Whereas only a single species of *Saratus* has been described, the genus *Maratus* includes a diverse variety of at least 59 described species endemic to Australia. After we synonymized the genus *Lycidas* Karsch 1878 with *Maratus* (Otto & Hill 2012c) a number of species previously associated with *Lycidas* by Žabka (1987) have been carried under *Maratus* with an unresolved status. Some are insufficiently known to determine the genus to which they should be assigned, others lack the characters that we associate with peacock spiders but they have not yet been assigned to another genus. Only described species and none of the unresolved species are listed here. Thus this catalogue should be viewed as a *work in progress*. Only adult males are shown in photographs below. Each range map shows areas that have been identified in prior publications (white circles), or by unpublished observations and posted photographs that we consider reliable (yellow circles). Each marked area may include multiple localities of record.

The *anomalous* group

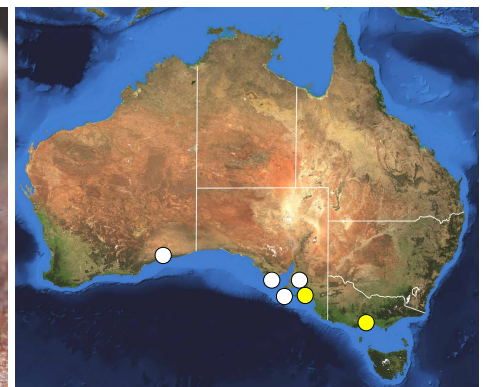
This proposed clade includes relatives of *M. anomalus* that can be distinguished by the presence of a blunt, bifurcated apex of the outer ring of the embolus above a shorter, sharply pointed inner apex of the male pedipalp. The female epigynum has heavily sclerotized (darker) ducts at the lateral and medial posterior margin of each fossa. Most have a pair of black spots toward the rear of the fan, and courtship display tends to be simple for most species. Recently a series of *grassland peacock spiders* from eastern Australia have been added (Baehr & Whyte 2016, Otto & Hill 2017). Should the genus *Maratus* be divided in the future, members of this group may once again be associated with the genus group name *Lycidas*.

Maratus albus

Otto & Hill 2016

Maratus albus Otto & Hill 2016b

Males of this coastal species extend their long legs III but do not elevate their fan during courtship display.

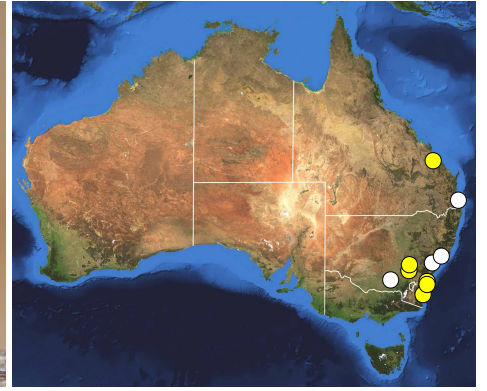


Maratus anomalus

(Karsch 1878)

Lycidas anomalus Karsch 1878; Prószyński 1984; Żabka 1987, 1991; Hill 2010; *Maratus*-like salticid Hill 2009 (Figures 28-29); *Maratus anomalus* : Otto & Hill 2012c, 2012e, 2016b, 2017; Baehr & Whyte 2016

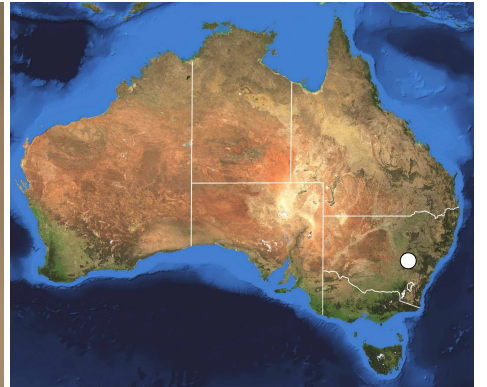
This species, the type for *Lycidas* Karsch 1878, has been redescribed from the type specimen twice (Żabka 1987; Otto & Hill 2012c).

***Maratus aurantius***

Otto & Hill 2017

Maratus aurantius Otto & Hill 2017

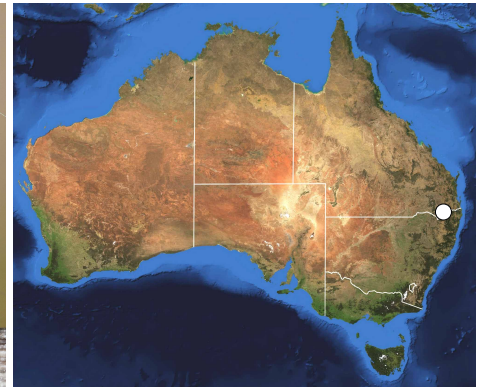
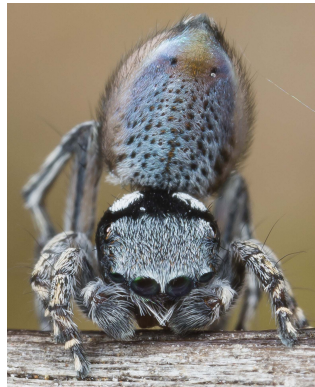
This is one of the grassland peacock spiders, known only from one locality near Orange, New South Wales.

***Maratus cinereus***

Otto & Hill 2017

Maratus cinereus Otto & Hill 2017

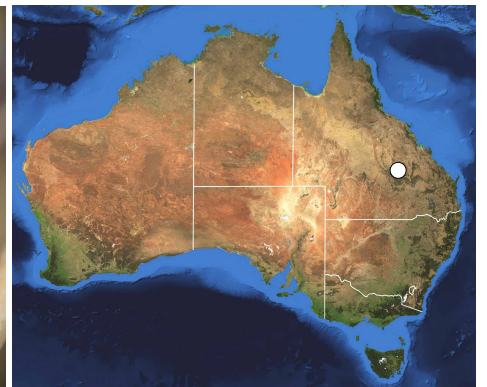
This grassland species from the vicinity of Stanthorpe, Queensland is closely related to *M. lentus* which also pulls one pedipalp to the side to expose the underlying chelicera when displaying to a female. Both of these species have distinctive cuffs of long setae around each proximal tarsus I and II.

***Maratus julianneae***

Baehr & Whyte 2016

Maratus julianneae Baehr & Whyte 2016

This grassland species has been found only at Carnarvon Station, Queensland. The fan of the male resembles that of *M. cinereus* but legs III resemble those of *M. anomalus* and are displayed in a similar manner.

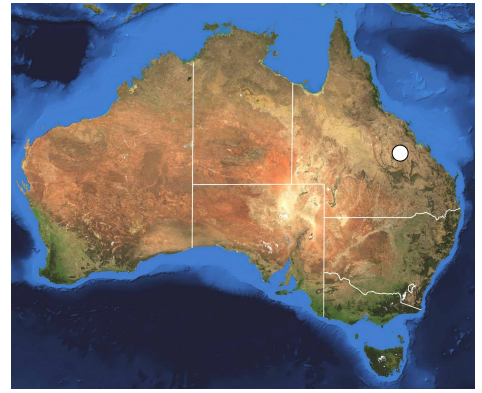


Maratus kochi

(Žabka 1987)

Lycidas kochi Žabka 1987, 1991; Hill 2010; *Maratus kochi* : Otto & Hill 2012c, 2012e

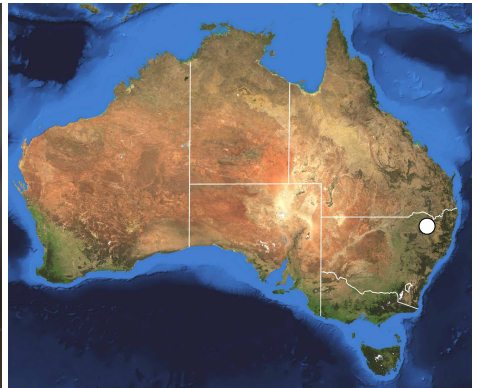
The holotype female from "Peak Downs" described by Žabka resembles the female of *M. cinereus* or *M. lentus* and we consider this to be a member of the grassland group. The male is not known.

***Maratus lentus***

Otto & Hill 2017

Maratus lentus Otto & Hill 2017

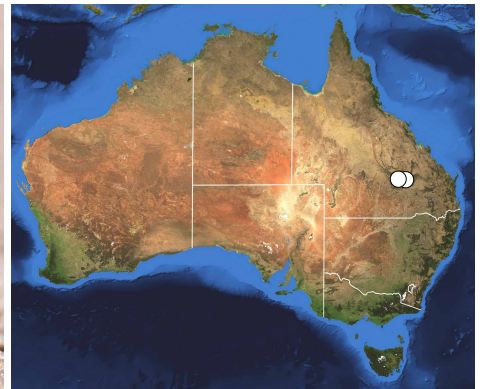
M. lentus males resemble the closely related *M. cinereus*, but have a different colour and a broad grey lateral margin on each side of the dorsal opisthosoma. They have only been found on grasses near Copeton, New South Wales.

***Maratus michaelorum***

Baehr & Whyte 2016

Maratus michaelorum Baehr & Whyte 2016

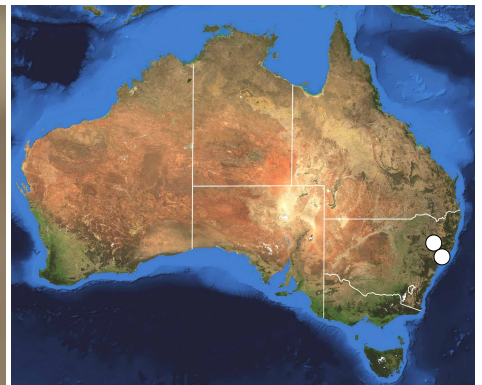
This species is known from Moolayember Creek National Park and nearby Carnarvon Gorge National Park in Queensland. The male resembles a small (3-4 mm) *M. pavonis*. The female is unknown. Photo by Madeline Girard.

***Maratus neptunus***

Otto & Hill 2017

Maratus neptunus Otto & Hill 2017

The fan of the male of this grassland species bears three prominent black stripes on a background of iridescent blue or purple scales. It was found near Butterwick and Tamworth, New South Wales.

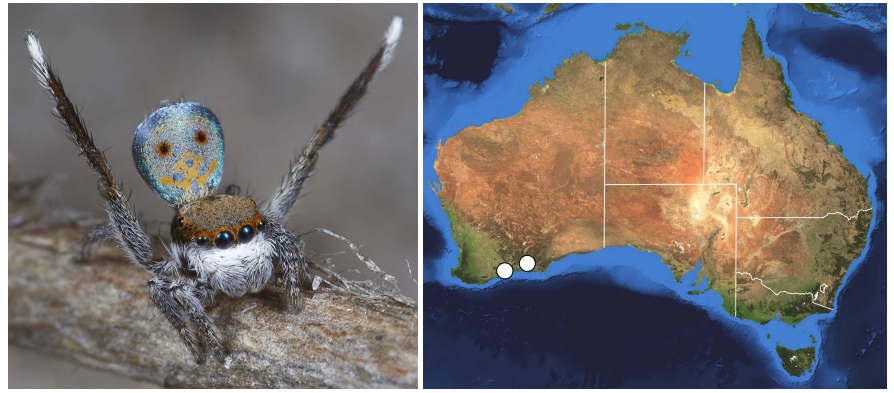


Maratus vultus

Otto & Hill 2016

Maratus vultus Otto & Hill 2016b

The fan of the male of *M. vultus* displays a distinctive face-like figure on a background of iridescent blue-green and light brown scales. This is the western-most species within the *anomalous* group, from Esperance and Point Ann, Western Australia. The female is not known.

**The *calcitrans* group**

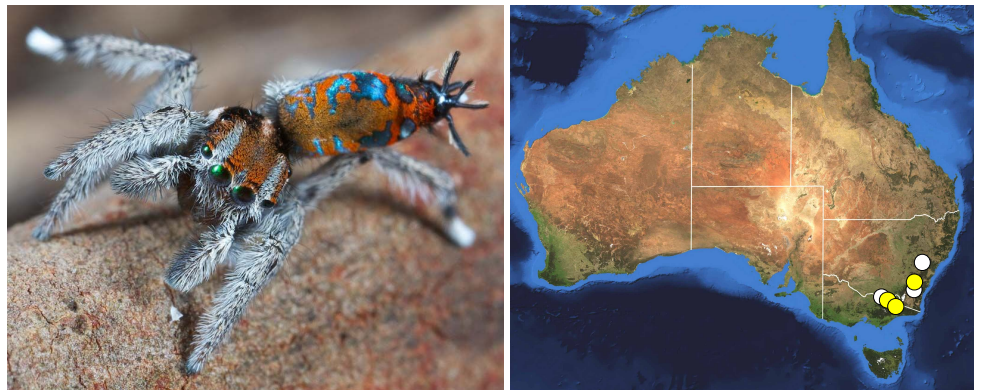
This group is widely distributed in eastern Australia with many colourful species, yet it was only recently discovered. Davies and Žabka (1989) figured a male *M. ottoi* from the vicinity of Brisbane, but did not give it a name. The most widely distributed species is *M. plumosus*, first found near Sydney. The male *M. plumosus* is also the most atypical of the group, with feathery plumes that it extends to the rear above its elevated and partly expanded fan. Males of all other species in the group inflate their spinnerets as they display to females. All members of the group have an asymmetric display in which they alternately extend or kick one leg III to one side, then the other leg III to the other side.

Maratus calcitrans

Otto & Hill 2012

Maratus calcitrans Otto & Hill 2012d

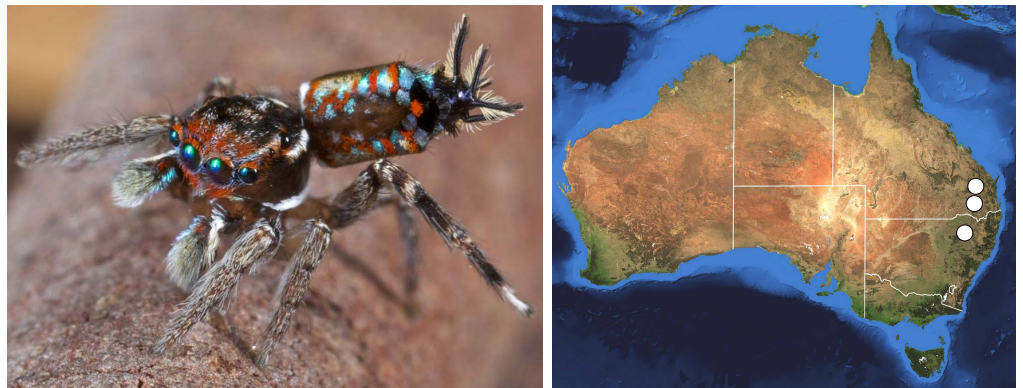
Dorsally each pedipalp of the male is covered with white setae, and behind each pedipalp, on either side, a stripe of white setae extends to the rear of the eye region. The species name *calcitrans* is a reference to the kicking display of the male.

***Maratus digitatus***

Otto & Hill 2012

Maratus digitatus Otto & Hill 2012d; Baehr & Whyte 2016

The male of this species has prominent, dull-green lateral flaps that can be extended but they are not part of the usual courtship display. The inflatable spinnerets are fringed with long white setae.

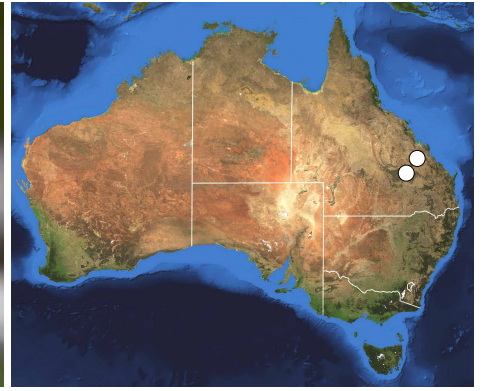


Maratus eliasi

Baehr & Whyte 2016

Maratus eliasi Baehr & Whyte 2016

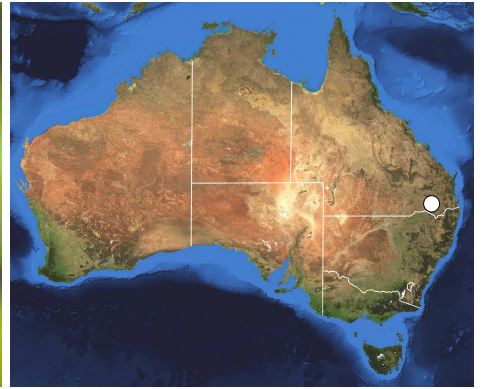
Males have a lateral flap on either side of the fan and prominent fringes of long, off-white setae on the inflatable spinnerets. Expansion of these flaps has not yet been observed. *M. eliasi* appears to be a close relative of *M. otto* and *M. digitatus*.

***Maratus jactatus***

Otto & Hill 2015

Maratus jactatus Otto & Hill 2015a

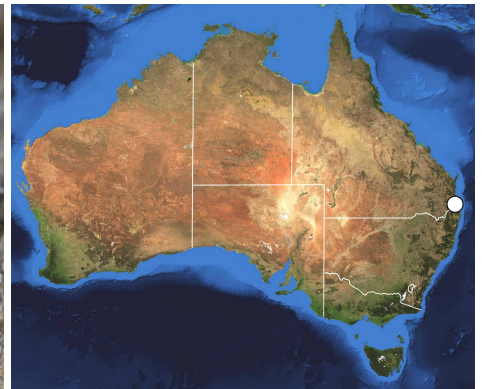
Popularly known as "Sparklemuffin," the male of this brightly coloured species has a very fast kicking display, and a relatively wide fan with three prominent, red transverse stripes.

***Maratus otto***

Baehr & Whyte 2016

Maratus sp. Davies & Žabka 1989; *Maratus otto* Baehr & Whyte 2016

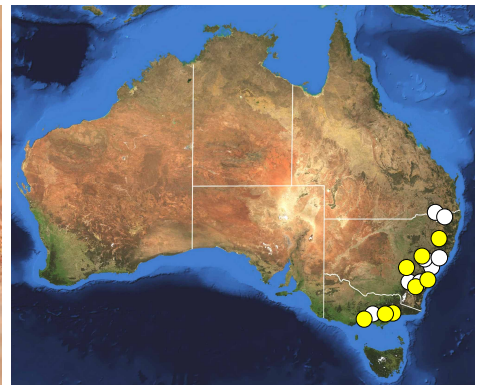
Known only from the Brisbane area, the male *M. otto* has an octopus-like figure on the fan and the common name "Octopus Peacock Spider."

***Maratus plumosus***

Otto & Hill 2013

Maratus-like salticid Hill 2009 (Figures 26-27); *Maratus* sp. B Otto & Hill 2011b, 2012d; *Maratus plumosus* Otto & Hill 2013b

This species is widely distributed in southeastern Australia. Males display plumes of setae instead of spinnerets, first on one side and then on the other. The front of each femur III is bright blue.

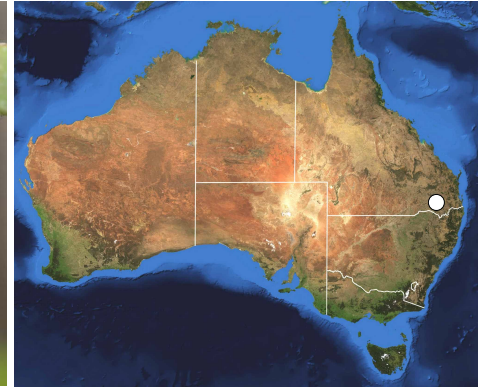


Maratus sceletus

Otto & Hill 2015

Maratus sceletus Otto & Hill 2015a

Popularly known as "Skeletorus," males raise their fan and inflated spinnerets as they circle around stems to safely approach a female.

**The *chrysomelas* group**

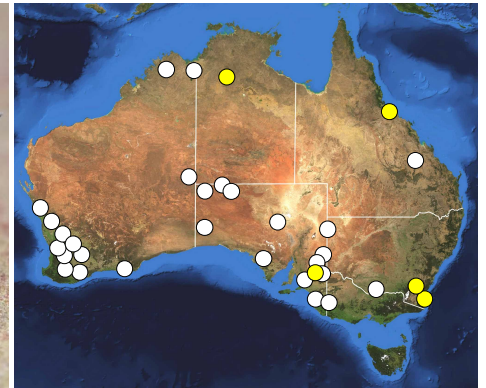
This group includes the widely-distributed *M. chrysomelas* and the closely related *M. nigromaculatus* that is known only from the southern coast of Queensland. Unlike most other *Maratus*, *M. chrysomelas* can be found in the arid interior and the tropical north. In some parts of eastern Queensland *M. nigromaculatus* genes associated with the series of paired black spots of the fan may appear in some Queensland populations of the closely related *M. chrysomelas* as a result of introgression.

Maratus chrysomelas

(Simon 1909)

Habrocestum chrysomelas Simon 1909; *Lycidas chrysomelas* : Zabka 1987, 1991; Waldock 2002; Hill 2010; *Maratus chrysomelas* : Otto & Hill 2012c, 2012e, 2016a; Hsiung et al. 2014; Baehr & Whyte 2016

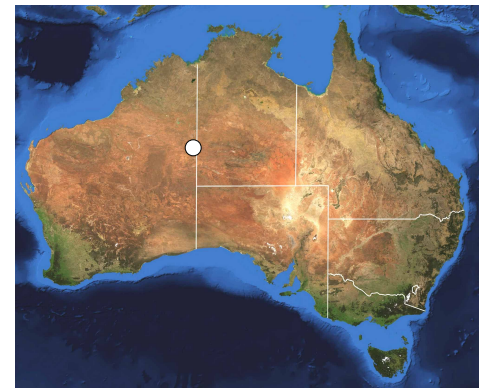
This species can be identified by the presence of two elongated black spots at the front of the fan.

***Maratus kiwirrkurra***

Baehr & Whyte 2016

Maratus kiwirrkurra Baehr & Whyte 2016

This small species is known only from a single male collected at Lake Mackay in the Kiwirrkurra indigenous protected area of the Gibson Desert, near the eastern boundary of Western Australia. A photograph of a dead individual that has lost most of its scale cover is included in the original description, but no photograph of a live animal has been published.

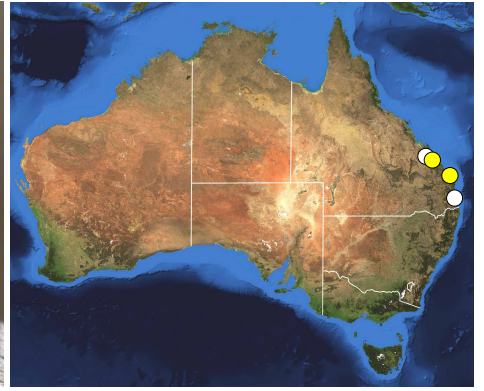


Maratus nigromaculatus

(Keyserling 1883)

Ergane nigromaculata Keyserling 1883; *Thorellia nigromaculata* : Rainbow 1911; *Spilargis nigromaculata* : Simon 1903; *Lycidas nigromaculatus* : Žabka 1987,1991; Hill 2010; *Maratus nigromaculatus* : Otto & Hill 2012c, 2012e, 2016a

The male has large, paired black spots and a wide fringe of long iridescent blue to white setae.

**The *fimbriatus* group**

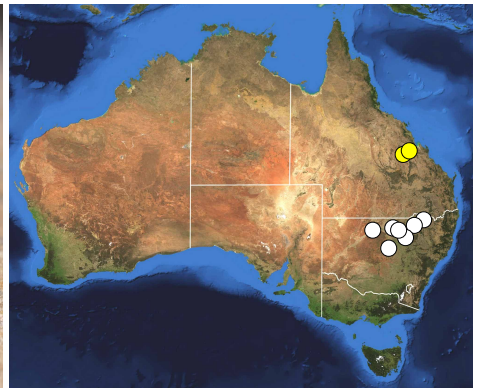
This small group includes three species, all with an embolus that is shaped like a wheel with two rims. *M. fimbriatus* has been found at a number of locations in the grazed interior of New South Wales. The closely related *M. licunxini* was collected at Carnarvon Station Homestead in the interior of Queensland. These spiders are quite different from any other known *Maratus*, and their display includes the use of extended legs I. Male *M. fimbriatus* and *M. licunxini* have a spectacular fringe surrounding the fan, and a pair of bright white stripes interrupting its dark, glossy dorsal surface. The fan of the western *M. speculifer* is also dark and glossy, but smaller.

Maratus fimbriatus

Otto & Hill 2016

Maratus fimbriatus Otto & Hill 2016a; Baehr & Whyte 2016

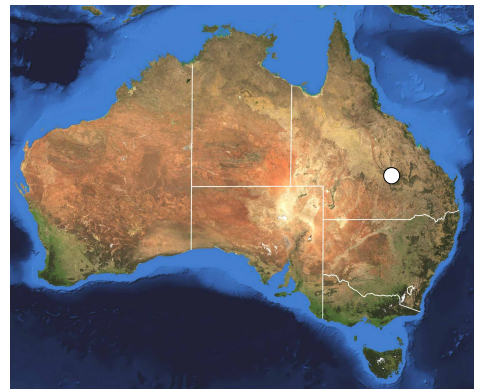
Males extend and separate legs I to reveal the smooth anterior surfaces of the femora. Unlike most *Maratus*, they do not use legs III as part of this display. Found in grazed areas of the dry interior of north-central New South Wales and Queensland, with some variation between the two areas.

***Maratus licunxini***

Baehr & Whyte 2016

Maratus licunxini Baehr & Whyte 2016

This species is very similar to *M. fimbriatus*, with more convergence of the white stripes toward the anterior of the fan. It was named after Li Cunxin, artistic director of the Queensland Ballet. Photographs of a dead individual are included in the original description but no photographs of live individuals have been published.

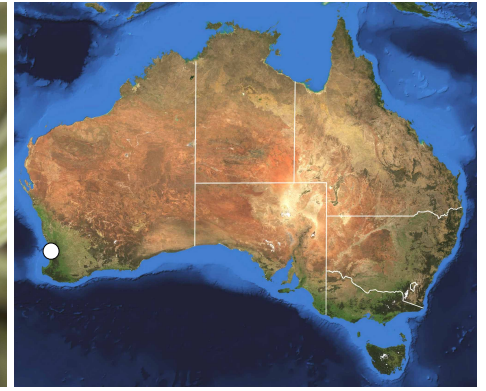


Maratus speculifer

(Simon 1909)

Habrocestum speculiferum Simon 1909; *Lycidas speculifer* : Žabka 1987, 1991; Hill 2010; *Maratus speculiferus* : Otto & Hill 2012c, 2012e

Little-known, males display with both legs I and their longer legs III. Each femur I is light green on the underside.

**The harrisi group**

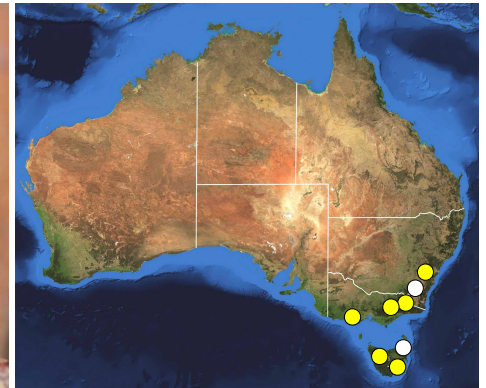
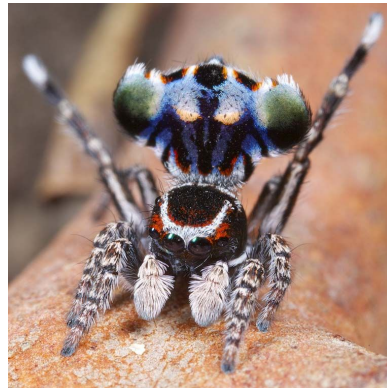
This small group includes two closely related species with a lobate or rounded flap on either side of the fan. The discovery and later rediscovery of *M. harrisi* by Stuart Harris was the subject of an award-winning documentary entitled *Maratus: A Documystery*.

Maratus harrisi

Otto & Hill 2011

Maratus harrisi Otto & Hill 2011b, 2016b; Hoyer & McQuillan 2014; Waldock 2015

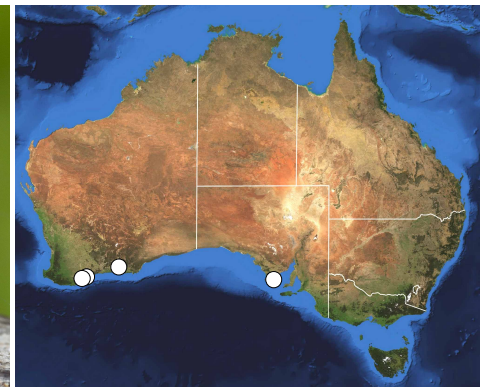
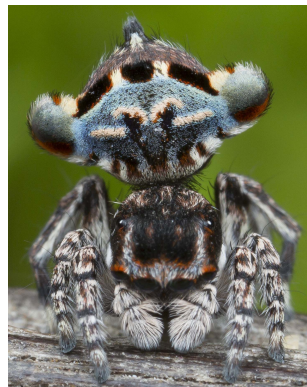
Ornamentation of the eye region varies across the range of *M. harrisi*. This male is from New South Wales.

***Maratus lobatus***

Otto & Hill 2016

Maratus lobatus Otto & Hill 2016b

This close relative of *M. harrisi* from the southern coastal region of Australia has a slightly different pattern of white stripes across the fan. Unlike *M. harrisi*, male *M. lobatus* do not raise legs III as they display their elevated and expanded fan to females.

**The mungaich group**

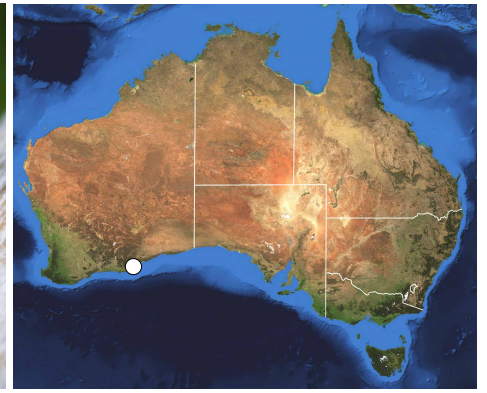
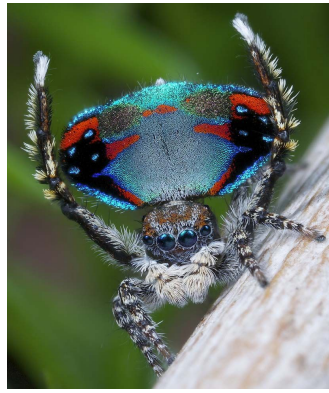
This large group, endemic to the southern part of Western Australia, includes species with very wide, brightly-coloured fans covered with a pattern of bright red scales on a background of iridescent scales. All males in the group extend legs III, but several (*M. avibus*, *M. bubo*, *M. caeruleus*, and *M. madelineae*) closely bracket the fan with legs III as they display.

Maratus avibus

Otto & Hill 2014

Maratus avibus Otto & Hill 2014a, 2016b

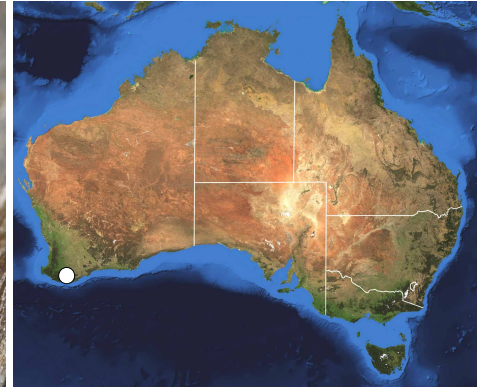
This is the mainland counterpart to the closely related *M. caeruleus*. Mating by *M. avibus* with *M. caeruleus* can result in viable hybrids. In the laboratory one male hybrid mated with a female *M. caeruleus* that laid eggs, resulting in several juvenile offspring. However two hybrid females that mated with hybrid males failed to produce any eggs.

***Maratus bubo***

Otto & Hill 2016

Maratus bubo Otto & Hill 2016b

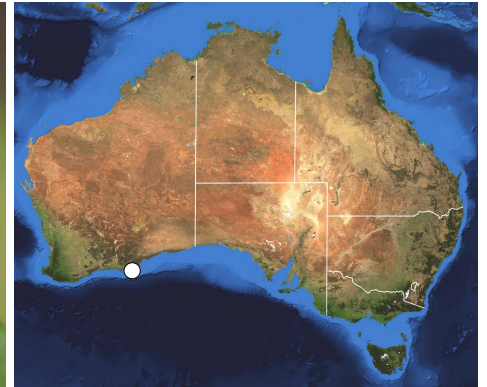
The pattern of the fan of *M. bubo* differs considerably from that of other members of this group, and resembles a primitive sketch of a horned owl (genus *Bubo*). Note how the fan is bracketed by the extended legs III.

***Maratus caeruleus***

Waldock 2013

Maratus caeruleus Waldock 2013, 2014; Otto & Hill 2014a, 2016b

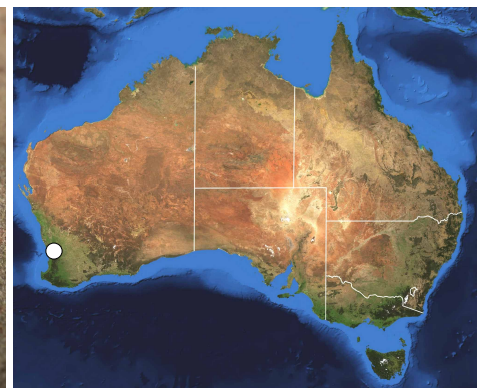
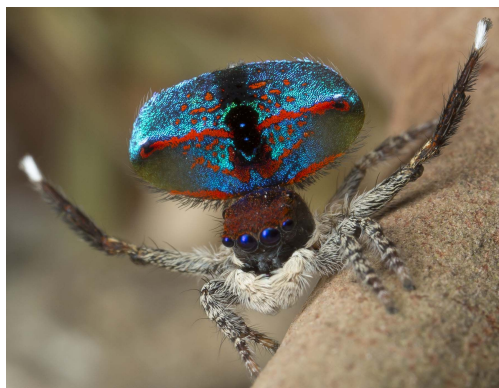
This large species is known only from Middle Island in the Recherche Archipelago just off the southern coast of Western Australia where the closely related *M. avibus* is found. It resembles *M. madelineae* but lacks the large central spot on the fan.

***Maratus hortorum***

Waldock 2014

Maratus mungaich : Waldock 1995 (in part); Otto & Hill 2012b (in part), 2014a (in part); *Maratus hortorum* Waldock 2014

This species is distinguished from *M. mungaich* by the presence of two small blue spots in the black central spot of the fan.

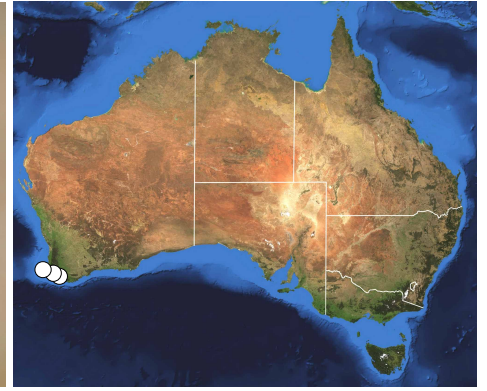


Maratus karrie

Waldock 2013

Maratus mungaich Waldock 1995 (in part); *Maratus* sp. 'Darlington's Peacock Spider' Hill & Otto 2011 (Darlington specimens in MCZ only); *Maratus* sp. A Otto & Hill 2011b, 2012b (Darlington specimens in MCZ only); *Maratus karrie* Waldock 2013, 2014; Otto & Hill 2014a, 2016b

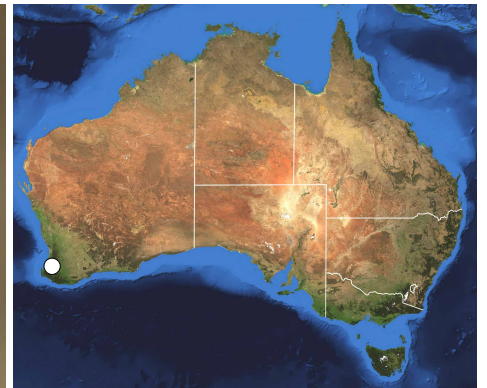
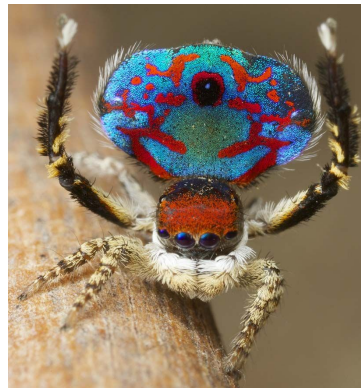
Males have a large black spot on each flap of the fan. They are similar to *M. sarahae* but much smaller and they occur in a different habitat.

***Maratus madelineae***

Waldock 2014

Maratus madelineae Waldock 2014; Otto & Hill 2016b

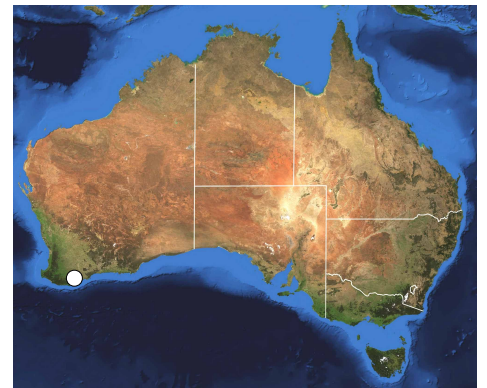
Males resemble *M. caeruleus* with respect to their colouration, but have a prominent posteromedian black spot and a more complex pattern of red scales on the fan.

***Maratus melindae***

Waldock 2013

Maratus mungaich : Waldock 1995 (in part); *Maratus melindae* Waldock 2013, 2014; Otto & Hill 2014a

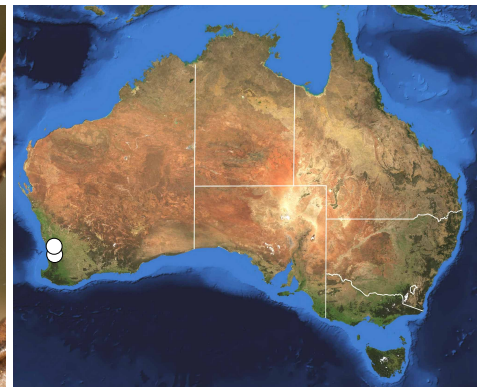
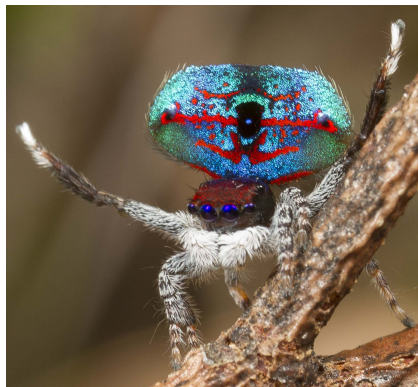
This species resembles *M. mungaich* but lacks a black patch on each flap of the fan. It has been found at Mt. Trio and at the foot of the Stirling Ranges, to the south. No photographs have been published.

***Maratus mungaich***

Waldock 1995

Maratus mungaich Waldock 1995, 2013, 2014; Hill 2009, 2010a; Otto & Hill 2011b, 2012b, 2014a, 2016b; Girard & Endler 2014; Hsiung et al. 2014

Male *M. mungaich* have a small black spot surrounded by red on each flap, and a single small blue spot at the center of the central black spot of the fan. Found inland from Perth.

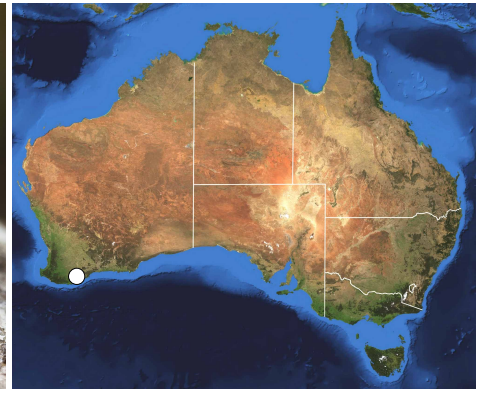


Maratus sarahae

Waldock 2013

'Darlington's Peacock Spider' Hill & Otto 2011 (photo by Framenau 2007 only); *Maratus* sp. A Otto & Hill 2011b, 2012b (all but Darlington MCZ specimens); *Maratus sarahae* Waldock 2013, 2014; Otto & Hill 2014a, 2016b; Girard & Endler 2014

This is a relatively large species, known only from the two highest peaks in the Stirling Ranges, Bluff Knoll and Ellen Peak.

**The pavonis group**

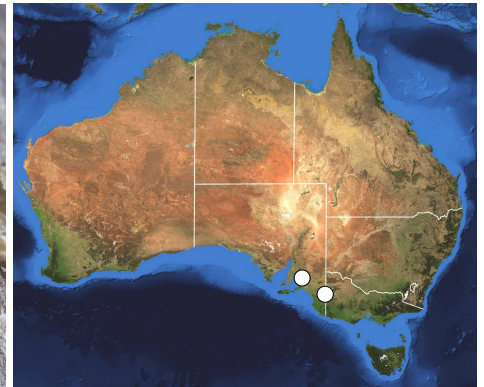
Dunn first used the Latin word for "peacock" (*pavo*) when he described *M. pavonis* in 1947. He later wrote an account of the display of this spider in a now-defunct Australian magazine, *Walkabout* (Dunn 1957). At the time, only two species in this group were known, *M. pavonis* and *M. splendens*. Males within this group can often be identified by the presence of a large red circle or "target" on the fan, but this is often obscured or replaced by a covering of light brown scales. Some males in this group do not even raise their fan as they display to females. Spiders of Western Australia presently identified as either *M. pavonis*, *M. pavonis* var. *brunneis*, or *M. pavonis* var. *nornalup* (Otto & Hill 2012c, 2012e; Baehr & Whyte 2016) are included here with *M. pavonis* but need further study. Unlike the eastern *M. pavonis*, the fan of these western spiders may have large lateral flaps or more light-brown scale cover, and the legs may have fewer markings.

Maratus leo

Otto & Hill 2014

Maratus leo Otto & Hill 2014d

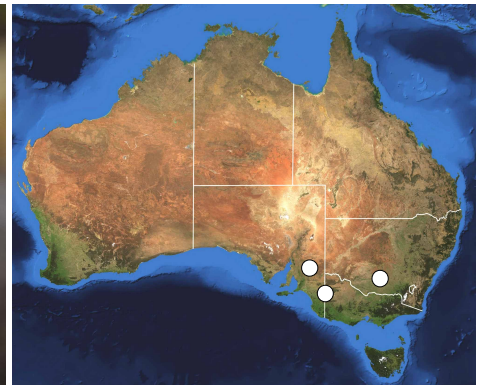
M. leo males are relatively cryptic and do not raise their fan when they display to females, but there are nonetheless a few iridescent blue-green scales on the dorsal opisthosoma. In some males the scales that form the circular figure of the fan are dark brown rather than dull red as shown here.

***Maratus literatus***

Otto & Hill 2014

Maratus pavonis var. *m-insignitis* Otto & Hill 2012c, 2012e; *Maratus literatus* Otto & Hill 2014d

Unlike the eastern *M. pavonis*, male *M. literatus* have a wide fan with flaps, and a red m-shaped figure across the eye region.

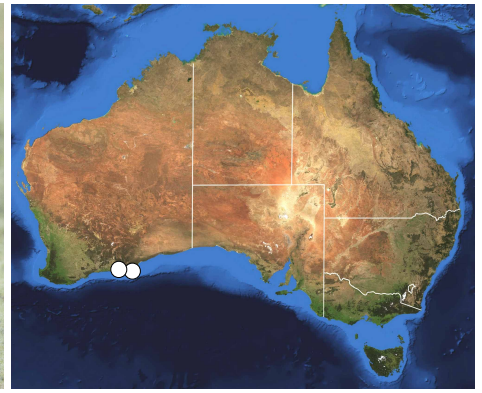


Maratus maritimus

Otto & Hill 2014

Maratus maritimus Otto & Hill 2014d

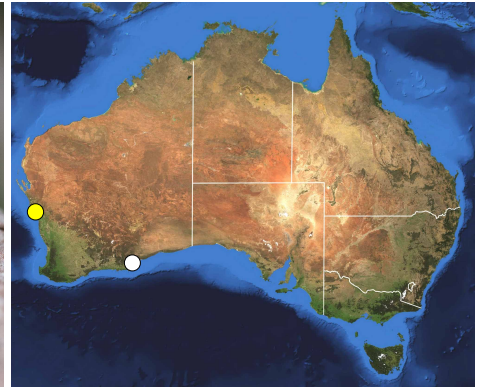
Males of this western species have only a narrow median line of iridescent scales on the fan. Like *M. leo*, they are cryptic and rely on movements of legs III to court females. They are found at lower elevations near the southern coast.

***Maratus montanus***

Otto & Hill 2014

Maratus montanus Otto & Hill 2014d

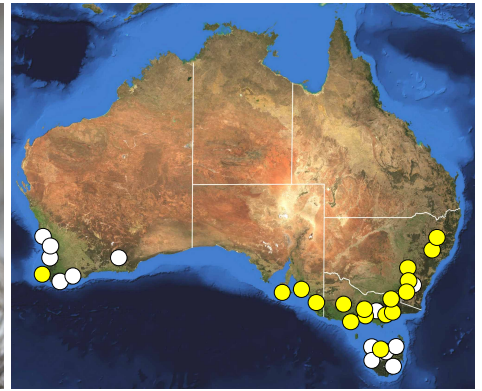
This species has been found at the top of Mt. Ragged and at Bluff Point near Geraldton in Western Australia. Males are similar to *M. maritimus* but they elevate their fan as they display to females.

***Maratus pavonis***

(Dunn 1947)

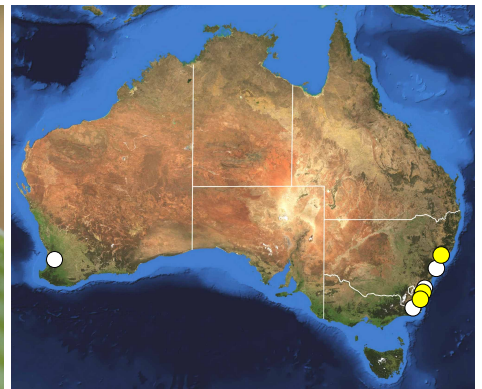
Saitis pavonis Dunn 1947, 1957; *Maratus pavonis* : Žabka 1991; Waldock 1993, 2007, 2008, 2015; Hill 2009, 2010; Otto & Hill 2010, 2011b, 2012c, 2012e, 2014d, 2013b; Hill & Otto 2011; Girard *et al.* 2011; *Maratus pavonis* var. *normalup* Baehr & Whyte 2016

This male is from Kangaroo Island. Western males have a wider fan with flaps and fewer bands on the legs.

***Maratus splendens***

(Rainbow 1896)

Attus splendens Rainbow 1896; *Saitis splendens* : Simon 1901a; Dunn 1947; *Saitis rainbowi* Roewer 1951; *Maratus rainbowi* : Waldock 2008; Hill 2009, 2010; *Maratus splendens* : Žabka 1991; Hill & Otto 2011; Otto & Hill 2011b, 2012c, 2012e, 2013b, 2014d; Girard *et al.* 2011; Foelix *et al.* 2013; Zhang & Maddison 2013; De Angelis *et al.* 2013; Girard & Endler 2014; Hsiung *et al.* 2014; Stavenga *et al.* 2016



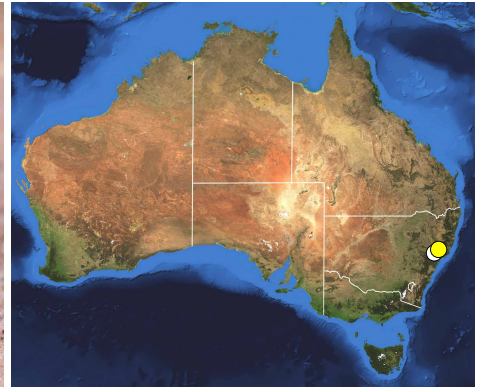
Males of this smaller species have a band of dark, iridescent blue scales between the PLE.

Maratus watagansi

Otto & Hill 2013

Maratus watagansi Otto & Hill 2013b, 2014d

Males of this cryptic eastern species also do not raise the fan as they display to females. Note the broad dorsal, median band of light brown scales. From the Watagans of eastern New South Wales. This is the only described peacock spider known to inhabit rainforest.

**The *spicatus* group**

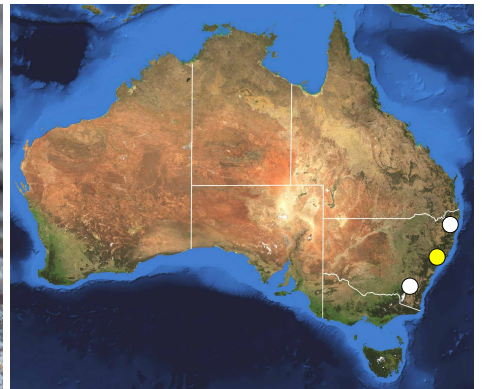
This group includes three very small (2.5-3 mm in body length) species. Males rear their colourful fan and wave it from side to side but do not extend legs III as they display to females. Legs III have no special markings and are close to legs IV in length. The male pedipalp of each species has a conical 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 that resembles that seen in members of the *chrysomelas* group, a group that may be closely related. The male of each of these species is nonetheless quite distinct.

Maratus purcellae

Otto & Hill 2013

Maratus purcellae Otto & Hill 2013a

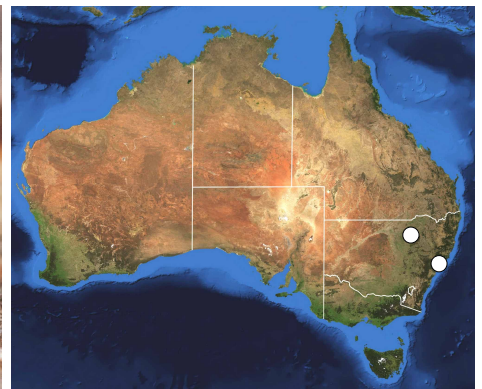
M. purcellae was first discovered in a Canberra garden. The dorsum of each pedipalp of the male is covered by a bright white line of scales, and the legs of the male are off-white with a cover of white setae.

***Maratus robinsoni***

Otto & Hill 2012

Maratus robinsoni Otto & Hill 2012c, 2012e; Hsiung et al. 2014

These small spiders can quickly bury themselves under sand grains. The iridescent scales of their fan are remarkable as they can produce all of the colours of the rainbow, depending on the relative direction of incident and refracted light.

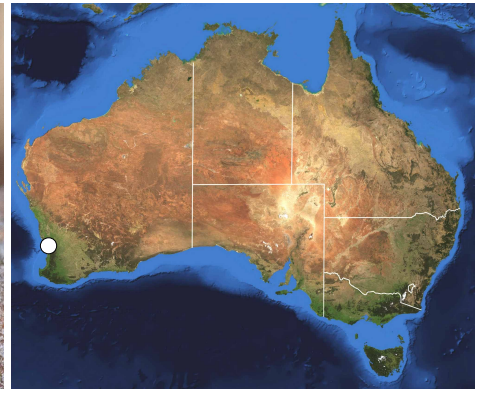
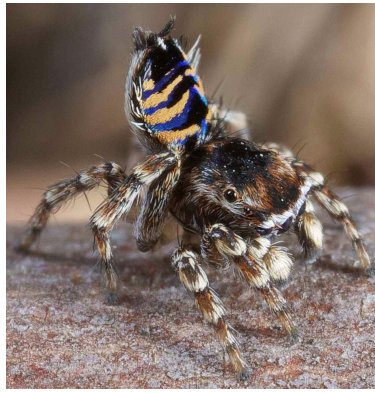


Maratus spicatus

Otto & Hill 2012

Maratus spicatus Otto & Hill 2012c, 2012e; Hsiung et al. 2014

Males of this small species have large spike-like setae fringing a fan marked with bright yellow chevrons on a blue background. These are frequently seen in and around Perth.

**The *tasmanicus* group**

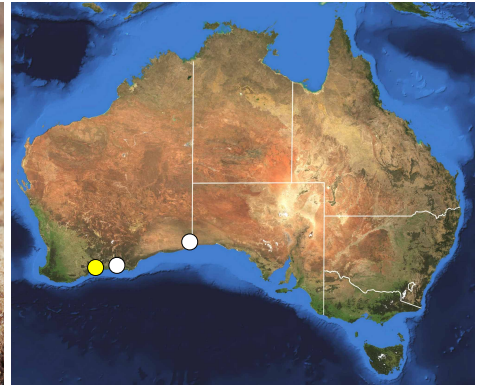
This group includes two closely related species, one southeastern and one southwestern. Males have a large triangular fan with lobate flaps, each flap bearing a large black spot.

Maratus australis

Otto & Hill 2016

Maratus australis Otto & Hill 2016b

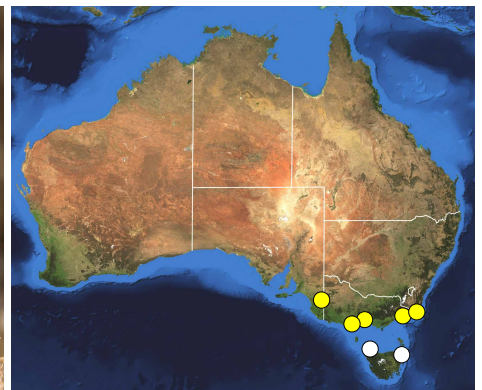
Males of this western species have a narrow black line running along the front of each pedipalp.

***Maratus tasmanicus***

Otto & Hill 2013

Maratus sp. C Otto & Hill 2011b; *Maratus tasmanicus* Otto & Hill 2013b; Waldock 2015; Otto & Hill 2016b

M. tasmanicus males are more orange in colour and their pedipalps are not striped. Some males have much brighter colours than the Tasmanian male shown here.

**The *velutinus* group**

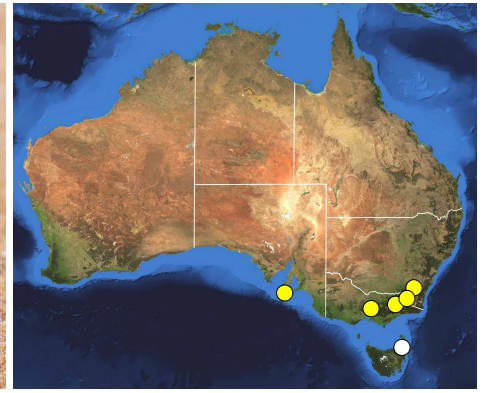
The two members of this group are similar but can be separated by the stripes on the carapace of *M. velutinus*. Males of both species have a velvety-black fan with elongated, black dorsal scales (or *squamous setae* after Waldock 2015) that extend to the rear. The fan is raised and moved from side to side but they do not raise legs III as they display to females.

Maratus proszynskii

Waldock 2015

Maratus proszynskii Waldock 2015

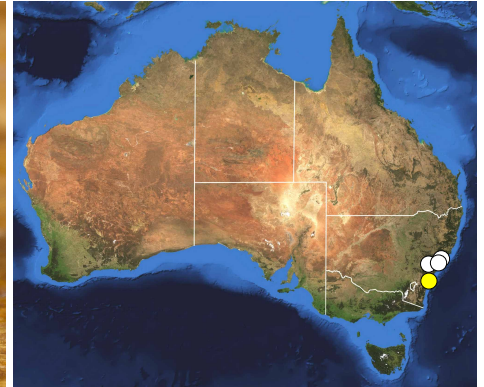
Waldock (2015) noted the similarity of this species to *M. velutinus*. The fan bears a short, narrow anteromedian stripe comprised of iridescent scales bounded by brown scales. This species was recently described from Tasmania but has also been found at several other locations. The male shown here is from Canberra.

***Maratus velutinus***

Otto & Hill 2012

Maratus velutinus Otto & Hill 2012c, 2012e; Waldock 2015

The male of this species has a stripe behind each AME.

**The *volans* group**

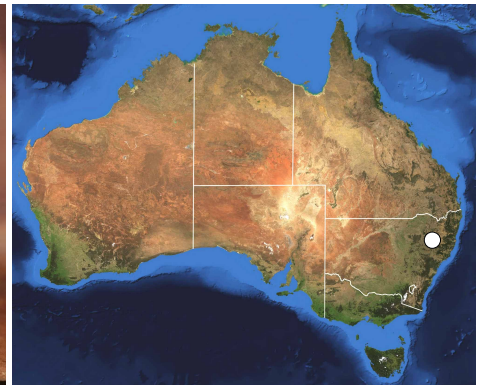
This group contains three of the most colourful peacock spiders. Males of all three species have a large, fringed fan with distinctive figures comprised of pigmented scales on a background of iridescent scales. Courtship display of all three is similar, but *M. pardus* tends to display the fan behind the extended legs III, *M. volans* in front of legs III, and *M. elephants* with one leg III in front of the fan and one leg III behind it. *M. elephants* and *M. pardus* are known from only a few localities, but *M. volans* is widely distributed along the east coast of Australia and is easily the best-known of all peacock spiders. The species name *volans* relates to the fact that Pickard-Cambridge (1874) was told that this spider used its flaps to fly (although he also guessed that they had a "sexual" function). A black and white sketch of a *Maratus volans* specimen was figured in an early guide to flying animals of the British Museum (Ridewood 1912). This was the only peacock spider featured in a popular guide to Australian spiders by Mascord (1970), who still thought that it might fly.

Maratus elephants

Otto & Hill 2015

Maratus elephants Otto & Hill 2015c

M. elephants has an unusual and finely-drawn figure on the front of the fan, resembling the head of an elephant with one ear on either flap. It is known from only a few sites in the interior of northeastern New South Wales.

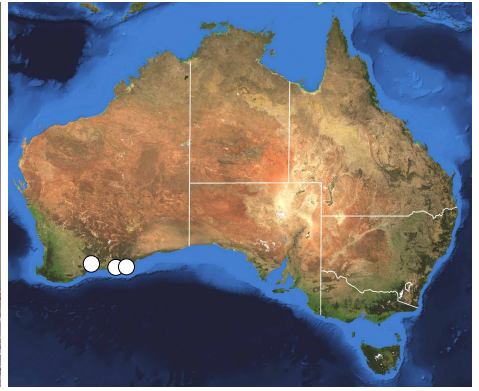


Maratus pardus

Otto & Hill 2014

Maratus pardus Otto & Hill 2014b

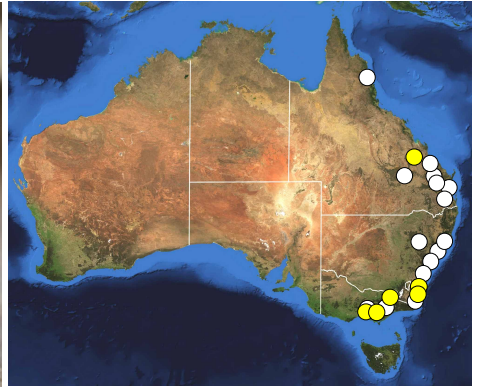
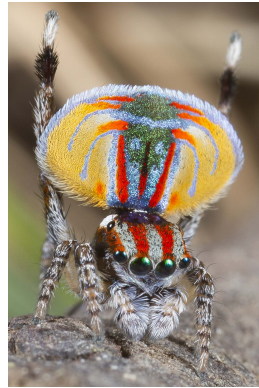
The male has prominent spots like a leopard, hence the name. Note the pair of vertical yellow-orange stripes on each flap of the fan. This species is known only from areas near the southern coast of Western Australia.

***Maratus volans***

(O. Pickard-Cambridge 1874)

Salticus volans O. Pickard-Cambridge 1874; *Maratus amoenus* Karsch 1878; Žabka 1987; *Saitis volans* : Simon 1901a; Ridewood 1913; Butler 1933; Dunn 1947; Mascord 1970; Prószyński 1984; *Maratus volans* : Žabka 1991; Waldock 1995, 2007, 2008; Nieuwenhuys 2008; Hill 2009, 2010; Otto & Hill 2010, 2011a, 2011b, 2014b; Girard et al. 2011; Foelix et al. 2013; Girard & Endler 2014; Hsiung et al. 2014; Girard & Elias 2015; Baehr & Whyte 2016

Each large flap of the fan of *M. volans* has three wide stripes comprised of brilliant yellow, pigmented scales.

**Species not assigned to a group**

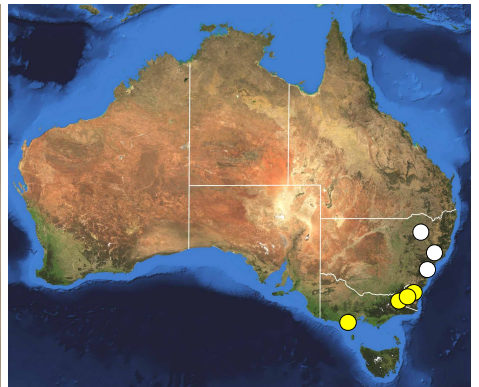
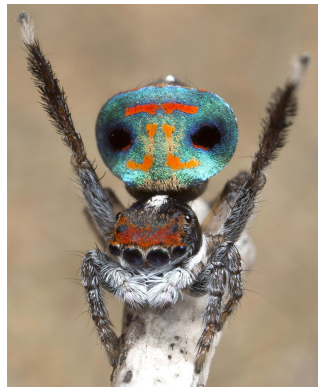
Each of the species shown here, including the type for *Maratus* (*M. amabilis*) is quite distinct and as a group they represent the great diversity of the Australian peacock spiders. *Saratus hesperus* is the only representative of a second genus of peacock spiders.

Maratus amabilis

Karsch 1878

Maratus amabilis Karsch 1878; Žabka 1987, 1991; Waldock 1995, 2007, 2008; Hill 2009, 2010a; Otto & Hill 2010, 2011b, 2016b

Type species for the genus *Maratus*. The large black spots on the flaps of this species were mentioned in the original description. Ornamentation of the eye region and fan differs in each location where *M. amabilis* is found. This male is from Sydney.

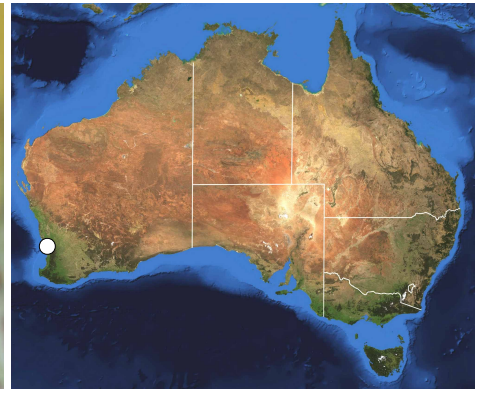


Maratus clupeatus

Otto & Hill 2014

Maratus sp. nov. Waldock 2007; *Maratus* species D Otto & Hill 2012c, 2012e; *Maratus clupeatus* Otto & Hill 2014c

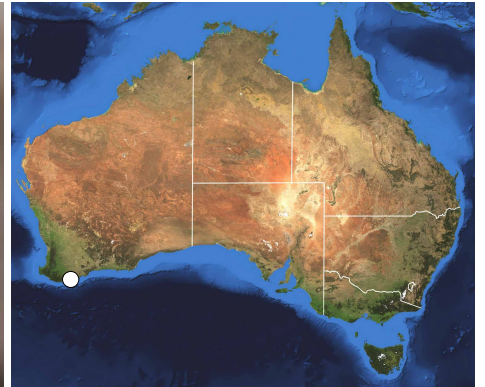
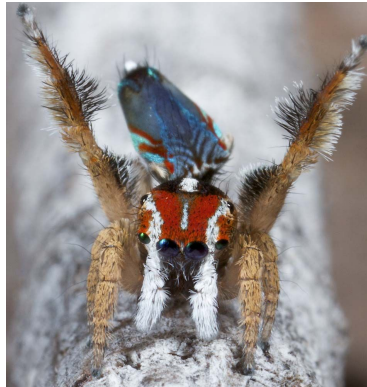
We have called this the *Gnangara Peacock Spider*, with reference to its occurrence in the Gnangara Mound north of Perth in Western Australia. The species name is a reference to the shield-like shape of the fan.

***Maratus linnaei***

Waldock 2008

Maratus linnaei Waldock 2008; Hill 2009, 2010; Otto & Hill 2011b, 2016b

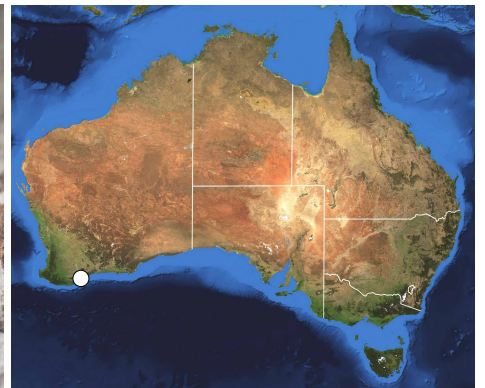
Male *M. linnaei* have long bristle-like setae on legs III and hold their bright white pedipalps to the front. All published records of this species are from Two Peoples Bay Nature Reserve in Western Australia but we have also seen it at two other locations to the west of Albany.

***Maratus personatus***

Otto & Hill 2015

Maratus personatus Otto & Hill 2015d

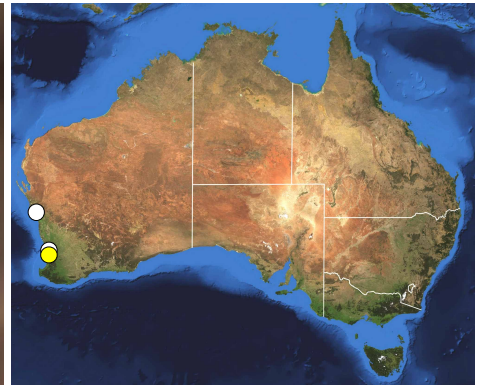
Male *M. personatus* have a bright blue mask and display with active movement of legs III, but do not raise the opisthosoma as part of this display.

***Maratus speciosus***

(O. Pickard-Cambridge 1874)

Salticus (Attus) speciosus O. Pickard-Cambridge 1874; *Saitis speciosus* : Simon 1901a; Dunn 1947; Hill 2009, 2010; Hill & Otto 2011; *Maratus speciosus* : Otto & Hill 2012c, 2012e, 2015b; Hill & Otto 2014; Girard & Endler 2014; Hsiung et al. 2014; Baehr & Whyte 2016

Known as the Coastal Peacock Spider, this spider is common on plants in coastal sand dunes in the vicinity of Perth. Males have a remarkable semaphore display, and a large fringe comprised of long, bicoloured setae around the fan.

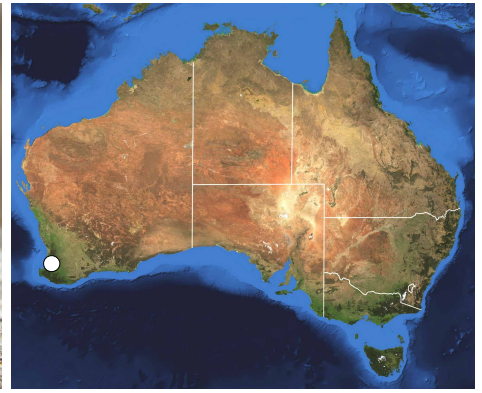


Maratus tessellatus

Otto & Hill 2016

Maratus tessellatus Otto & Hill 2016b

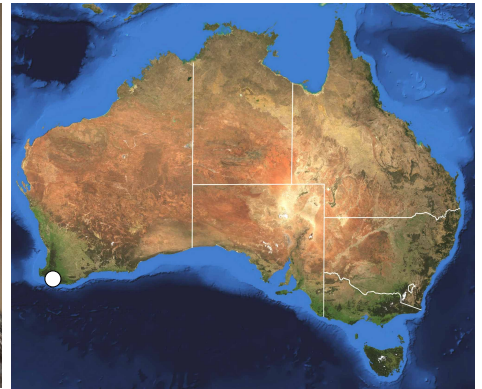
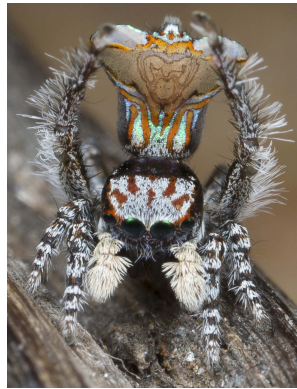
Males have a distinctive tessellated pattern of dark scales on their fan, but do not use this fan in courtship display, a display in which legs III are extended and rapidly waved in front of a female. This species is known only from Bunbury, Western Australia.

***Maratus vespa***

Otto & Hill 2016

Maratus vespa Otto & Hill 2016b

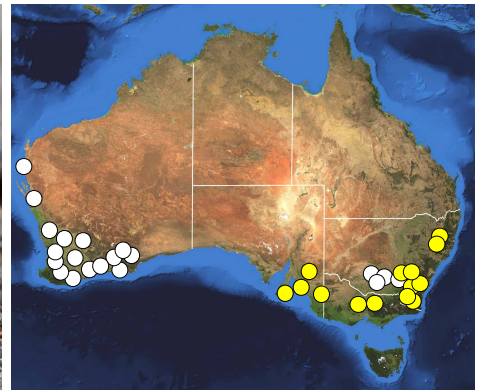
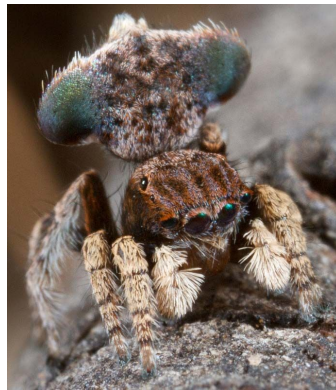
M. vespa males have a remarkable pattern of fine lines on the fan that resembles the front of a wasp. The male moves his fan to one side, then to a vertical position as shown here, and then to the other side as a watching female turns to follow his movement. This species is known only from Lake Jasper in southwestern Western Australia.

***Maratus vespertilio***

(Simon 1901)

Saitis vespertilio Simon 1901b; *Saitis vespertilis* Dunn 1947 (misspelled); *Maratus vespertilio*: Žabka 1991; Waldock 2008; Hill 2009, 2010; Otto & Hill 2011a, 2011b, 2012a

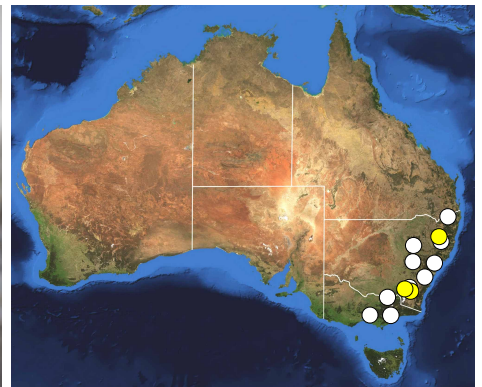
Males of this cryptically coloured species engage in prolonged ritual contests. The "Bat Peacock Spider" is widely distributed and appears to prefer drier habitats.

***Saratus hesperus***

Otto & Hill 2017

Saratus hesperus Otto & Hill 2017

Similar to other peacock spiders in many respects, the genitalia of *S. hesperus* males and females are quite different. Emergent instars are boldly spotted and the deep blue or purple of the fan is based on layering of the cuticle rather than scale structure. The species name, *hesperus*, is a Latinized version of the Greek name for the Evening Star (Venus).



Acknowledgements

We thank Barbara Baehr, Farhan Bokhari, Nick Burr, Chausino, David de Angelis, Jordan de Jong, Michael Doe, Linda Dowling, Michael Duncan, Jason Dunlop, G. B. Edwards, Damian Elias, Kristi Ellingson, Adam Fletcher, Volker Framenau, Anja Friederichs, Madeline Girard, Stuart Harris, Mark Harvey, Mark Helle, Val Hogan, Fred Hort, Jean Hort, Glenn Hoye, Paul Irvine, Joan P. Jass, Bradley Jenner, Richard Jones, Eddie Aloise King, Beth Kinsey, Ron Kinsey, David Knowles, Allan Lance, Andrew Leo, Elan Lewinsohn, Laura Leibensperger, John Lizamore, Stephanie Lizamore, Iain Macaulay, Karl Magnacca, Chris Martinez, Oscar Mendez, Peter McHugh, Peter McQuillan, Graham Milledge, Charlotte Miller, Mark Newton, Chris O'Toole, Norman I. Platnick, Jerzy Prószyński, Michaela Purcell, Nicole Quittner, Tomas Rak, Robert Raven, David B. Richman, Michael Rix, Martyn Robinson, Peter Robinson, Christine Rollard, Bob Rogers, Laurence Sanders, Michael Sanders, Joseph Schubert, Kai Schütte, Owen Seeman, June Shields, Kevin Shields, Helen Smith, Kerry Stuart, Geoff Urbas, Monique Urbas, Julianne Waldock, Robert Whyte, Jacqui Wilson, Graham Wise, Marek Żabka and Junxia Zhang for their important contributions to our study of peacock spiders in recent years. We also would like to acknowledge the Australian Capital Territory Environment, Planning and Sustainable Development Directorate, the Brisbane City Council, the Department of Environment, Water and Natural Resources, South Australia, the Department of Parks and Wildlife, Western Australia, the Ku-ring-gai Wildflower Garden, the New South Wales Department of Industry, the New South Wales National Parks and Wildlife Service, and Water New South Wales. Without their support the collection and documentation of many species would not have been possible. Unless otherwise credited all photographs are copyright © Jurgen C. Otto. Range maps are based on a satellite image supplied by the NASA Visible Earth project.

References

- Baehr, B. C. and R. Whyte. 2016.** The peacock spiders (Araneae: Salticidae: Maratus) of the Queensland Museum, including six new species. *Zootaxa* 4154 (5): 501-525.
- Butler, L. S. G. 1933.** The common and conspicuous spiders of Melbourne. *Victoria Naturalist* 49: 271-292.
- Davies, V. T. and M. Żabka. 1989.** Illustrated keys to the genera of jumping spiders (Araneae: Salticidae) in Australia. *Memoirs of the Queensland Museum* 27: 189-266.
- De Angelis, D., H. Davis, B. Jenner and J. de Jong. 2013.** A colourful addition to the spider fauna of Victoria: the peacock spider *Maratus splendens* (Rainbow, 1896) (Araneae: Salticidae). *The Victorian Naturalist* 130 (6): 224-231.
- Dunn, R. A. 1947.** A new salticid spider from Victoria. *Memoirs of the National Museum of Victoria* 15: 82-85.
- Dunn, R. A. 1957.** The Peacock Spider. *Walkabout*, April 1st, 1957: 38-39.
- Foelix, R. F., B. Erb and D. E. Hill. 2013.** Structural colors in spiders. In: *Spider Ecophysiology*, W. Nentwig, ed., Springer-Verlag. pp. 333-347.
- Girard, M. B. and D. O. Elias. 2015.** Female preference for multi-modal courtship: Multiple signals are important for male mating success in peacock spiders. *Proceedings of the Royal Society B: Biological Sciences* 282: 20152222. <http://dx.doi.org/10.1098/rspb.2015.2222>. p. 1-10.
- Girard, M. B. and J. A. Endler. 2014.** Peacock spiders. *Current Biology* 24 (13): pR588-R590.
- Girard, M. B., M. M. Kasumovic and D. O. Elias. 2011.** Multi-modal courtship in the peacock spider, *Maratus volans* (O.P.-Cambridge, 1874). *PLoS ONE* 6 (9): e25390: 1–10. (doi:10.1371/journal.pone.0025390)
- Hill, D. E. 2009.** Euophryine jumping spiders that extend their third legs during courtship (Araneae: Salticidae: Euophryinae: *Maratus*, *Saitis*). *Peckhamia* 74.1: 1-27.
- Hill, D. E. 2010.** Sunda to Sahul: Trans-Wallacean distribution of recent salticid genera (Araneae: Salticidae). *Peckhamia* 80.1: 1-60.
- Hill, D. E. and J. C. Otto. 2011.** Visual display by male *Maratus pavonis* (Dunn 1947) and *Maratus splendens* (Rainbow 1896) (Araneae: Salticidae: Euophryinae). *Peckhamia* 89.1: 1-41.
- Hill, D. E. and J. C. Otto. 2014.** Visual courtship display by the male Coastal Peacock Spider [Araneae: Salticidae: Euophryinae: *Maratus speciosus* (O. Pickard-Cambridge 1874)]. *Peckhamia* 119.1: 1-18.
- Hoye, G. A. and P. B. McQuillan. 2014.** *Maratus harrisi* (Araneae: Salticidae), a newly recorded peacock jumping spider for Tasmania. *Tasmanian Naturalist* 136: 78-82.

- Hsiung, B.-K., T. A. Blackledge and M. D. Shawkey. 2014.** Structural color and its interaction with other color-producing elements: perspectives from spiders. In: *The Nature of Light: Light in Nature V*, ed. R. Liang and J. A. Shaw. Proceedings of SPIE 9187, 91870B: 1-20.
- Karsch, F. 1878.** Diagnoses Attoidarum aliquot novarum Novae Hollandiae collectionis Musei zoologici Berolinensis [Descriptions of several new salticids from Australia in the collection of the Berlin Museum]. *Mittheilungen des Münchener Entomologischen Vereins* 2 (1): 22-32.
- Keyserling, E. 1883.** *Die Arachniden Australiens*. Nürnberg, 1: 1421-1489.
- Mascord, R. 1970.** *Australian spiders in colour*. A. H. and A. W. Redd Pty Ltd. Sydney. pp. 1-112.
- Nieuwenhuys, E. 2008.** Peacock spider, *Maratus volans*. Online at: http://www.xs4all.nl/~ednieuw/australian/salticidae/Peacock_spider_Maratus_volans.htm
- Otto, J. C. and D. E. Hill. 2010.** Observations of courtship display by a male *Maratus amabilis* Karsch 1878 (Araneae: Salticidae). *Peckhamia* 79.1: 1-16.
- Otto, J. C. and D. E. Hill. 2011a.** *Maratus vespertilio* (Simon 1901) (Araneae: Salticidae) from southern Australia. *Peckhamia* 92.1: 1-6.
- Otto, J. C. and D. E. Hill. 2011b.** An illustrated review of the known peacock spiders of the genus *Maratus* from Australia, with description of a new species (Araneae: Salticidae: Euophryinae). *Peckhamia* 96.1: 1-27.
- Otto, J. C. and D. E. Hill. 2012a.** Contests between male *Maratus vespertilio* (Simon 1901) (Araneae: Salticidae). *Peckhamia* 98.1: 1-17.
- Otto, J. C. and D. E. Hill. 2012b.** Description of Darlington's Peacock Spider (Araneae: Salticidae: Euophryinae: *Maratus* species A) from the Stirling Range National Park of Western Australia. *Peckhamia* 101.1: 1-21.
- Otto, J. C. and D. E. Hill. 2012c.** Notes on *Maratus* Karsch 1878 and related jumping spiders from Australia, with five new species (Araneae: Salticidae: Euophryinae). *Peckhamia* 103.1: 1-81.
- Otto, J. C. and D. E. Hill. 2012d.** Two new Australian peacock spiders that display inflated and extended spinnerets (Araneae: Salticidae: Euophryinae: *Maratus* Karsch 1878). *Peckhamia* 104.1: 1-28.
- Otto, J. C. and D. E. Hill. 2012e.** Notes on *Maratus* Karsch 1878 and related jumping spiders from Australia, with five new species (Araneae: Salticidae: Euophryinae), version 2. *Peckhamia* 103.2: 1-82.
- Otto, J. C. and D. E. Hill. 2013a.** A new peacock spider from Australia displays three 'sapphire gems' on a field of gold (Araneae: Salticidae: Euophryinae: *Maratus* Karsch 1878). *Peckhamia* 105.1: 1-8.
- Otto, J. C. and D. E. Hill. 2013b.** Three new Australian peacock spiders (Araneae: Salticidae: *Maratus*). *Peckhamia* 108.1: 1-39.
- Otto, J. C. and D. E. Hill. 2014a.** Spiders of the *mungaich* group from Western Australia (Araneae: Salticidae: Euophryinae: *Maratus*), with one new species from Cape Arid. *Peckhamia* 112.1: 1-35.
- Otto, J. C. and D. E. Hill. 2014b.** Description of a new peacock spider from Cape Le Grand, Western Australia, with observations on display by males and females and comparative notes on the related *Maratus volans* (Araneae: Salticidae: Euophryinae: *Maratus*). *Peckhamia* 114.1: 1-38.
- Otto, J. C. and D. E. Hill. 2014c.** Description of a new peacock spider from the Gnangara Mound north of Perth, Western Australia (Araneae: Salticidae: Euophryinae: *Maratus*). *Peckhamia* 115.1: 1-8.
- Otto, J. C. and D. E. Hill. 2014d.** Peacock spiders of the *pavonis* group from southern Australia (Araneae: Salticidae: Euophryinae: *Maratus*). *Peckhamia* 117.1: 1-62.
- Otto, J. C. and D. E. Hill. 2015a.** Two new peacock spiders of the *calcitrans* group from southern Queensland (Araneae: Salticidae: Euophryinae: *Maratus*). *Peckhamia* 121.1: 1-34.
- Otto, J. C. and D. E. Hill. 2015b.** Adult display by a penultimate male Coastal Peacock Spider (Araneae: Salticidae: Euophryinae: *Maratus speciosus*). *Peckhamia* 122.1: 1-6.
- Otto, J. C. and D. E. Hill. 2015c.** *Maratus elephants*, a new member of the *volans* group from New South Wales (Araneae: Salticidae: Euophryinae). *Peckhamia* 123.1: 1-19.
- Otto, J. C. and D. E. Hill. 2015d.** *Maratus personatus*, a masked peacock spider from Cape Riche, Western Australia (Araneae: Salticidae: Euophryinae). *Peckhamia* 127.1: 1-30.
- Otto, J. C. and D. E. Hill. 2016a.** *Maratus fimbriatus*, a new peacock spider from the Darling Riverine Plains of New South Wales, with a review of the *Maratus chrysomelas* group (Araneae: Salticidae: Euophryini). *Peckhamia* 136.1: 1-24.
- Otto, J. C. and D. E. Hill. 2016b.** Seven new peacock spiders from Western Australia and South Australia (Araneae: Salticidae: Euophryini: *Maratus*). *Peckhamia* 141.1: 1-101.
- Otto, J. C. and D. E. Hill. 2017.** Five new peacock spiders from eastern Australia (Araneae: Salticidae: Euophryini: *Maratus* Karsch 1878 and *Saratus*, new genus). *Peckhamia* 147.1: 1-86.
- Pickard-Cambridge, O. 1874.** On some new genera and species of Araneida. *The Annals and Magazine of Natural History*. Series 4, volume 14, Issue Number 81, Paper 24: 169–183, plate XVII.
- Prószyński, J. 1984.** *Atlas rysunkow diagnostycznych mniej znanych Salticidae*. *Zeszyty Naukowe WSRP, Siedlce*. Figs. 1-177.
- Rainbow, W. J. 1896.** Descriptions of some new Araneidae of New South Wales. No. 7. *Proceedings of the Linnean Society of New South Wales* 21: 628-633.
- Rainbow, W. J. 1911.** A census of Australian Araneidae. *Records of the Australian Museum* 9: 107-319.

- Roewer, C. F. 1951.** Neue Namen einiger Araneen-Arten. Abhandlungen herausgegeben von Naturwissenschaftlicher Verein zu Bremen 32: 437-456.
- Ridewood, W. G. 1913.** *Guide to the exhibition of specimens illustrating the modification of the structure of animals in relation to flight.* British Museum of Natural History, Special Guide 6: i-viii, 1-80.
- Simon, E. 1901a.** *Histoire naturelle des Araignées*, Paris 2: 381-668.
- Simon, E. 1901b.** Etudes arachnologiques. 31e. Memoire. L. Descriptions d'espèces nouvelles de la famille des Salticidae (suite). Annales de la Societe Entomologique de France 70: 66-76.
- Simon, E. 1903.** *Histoire naturelle des Araignées*, Paris 2: 669-1080.
- Simon, E. 1909.** Lief. 12. Araneae, 2me partie. In: *Die Fauna Sudwest-Australiens. Ergebnisse der Hamburger sudwestaustralischen Forschungsreise 1905 herausgegeben von Prof. Sr. W. Michaelson und Dr. R. Hartmeyer.* Band II, Lieferung 9–13. Verlag von Gustav Fischer in Jena. 155–212.
- Stavenga, D. G., J. C. Otto and B. D. Wilts. 2016.** Splendid coloration of the peacock spider *Maratus splendens*. Journal of the Royal Society Interface 13: 20160437. <http://dx.doi.org/10.1098/rsif.2016.0437>. pp. 1-8.
- Waldock, J. M. 1993.** Peacocks of the spider world. Australian Natural History 24:10-11.
- Waldock, J. M. 1995.** A new species of *Maratus* from southwestern Australia (Araneae: Salticidae). Records of the Western Australian Museum. Supplement No. 52: 165-169.
- Waldock, J. M. 2002.** Redescription of *Lycidas chrysomelas* (Simon) (Araneae: Salticidae). Records of the Western Australian Museum 21: 227-234.
- Waldock, J. M. 2007.** What's in a name? Or: why *Maratus volans* (Salticidae) cannot fly. Western Australian Museum. Online at: http://www.australasian-arachnology.org/download/Maratus_cannot_fly.pdf
- Waldock, J. M. 2008.** A new species of *Maratus* (Araneae: Salticidae) from southwestern Australia. Records of the Western Australian Museum 24: 369-373.
- Waldock, J. M. 2013.** A review of the peacock spiders of the *Maratus mungaich* species-group (Araneae: Salticidae), with descriptions of four new species. Records of the Western Australian Museum 28 (1): 66-81.
- Waldock, J. M. 2014.** Two new species of peacock spider of the *Maratus mungaich* species-group (Araneae: Salticidae) from south-western Australia. Records of the Western Australian Museum 28 (1): 66-81.
- Waldock, J. M. 2015.** A new species of peacock spider, *Maratus prozysniskii* sp. nov. (Araneae: Salticidae: Euophryini), from Tasmania, with a review of *Maratus* in Tasmania, Australia. Records of the Western Australian Museum 30: 144-150.
- Žabka, M. 1987.** Salticidae (Araneae) of Oriental, Australian and Pacific Regions, II. Genera *Lycidas* and *Maratus*. Annales Zoologici 40(11): 451-482.
- Žabka, M. 1991.** Studium taksonomiczno-zoogeograficzne nad Salticidae (Arachnida: Araneae) Australii. Wyższa Szkoła Rolniczo-Pedagogiczna W Siedlcach. Rozprawa Naukowa 32: 1-110.
- Zhang, J. and W. P. Maddison. 2013.** Molecular phylogeny, divergence times and biogeography of spiders of the subfamily Euophryinae (Araneae: Salticidae). Molecular Phylogenetics and Evolution 68: 81–92.
- Zhang, J. and W. P. Maddison. 2015.** Genera of euophryine jumping spiders (Araneae: Salticidae), with a combined molecular-morphological phylogeny. Zootaxa 3938 (1): 1-147.