

Notes on *Maratus* Karsch 1878 and related jumping spiders from Australia, with five new species (Araneae: Salticidae: Euophryinae), version 2¹

Jürgen C. Otto² and David E. Hill³

¹ Changes to Peckhamia 103.1 are listed on page 82 (Appendix 11)

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

³ 213 Wild Horse Creek Drive, Simpsonville, South Carolina 29680-6513, USA *email* platycryptus@yahoo.com

KEY WORDS: Euophryinae, *Hypoblemum*, *Jotus*, *Lycidas*, *Maratus*, *Saitis*, peacock spider, *Prostheclina*

Abstract. *Maratus* Karsch 1878 is redefined as a genus of endemic Australian Peacock Spiders, to include *Lycidas* Karsch 1878 based on reexamination of the type of that species, *L. anomalus* Karsch 1878. Related spiders are depicted, including *Jotus auripes* L. Koch 1881, *Prostheclina pallida* Keyserling 1882, and other spiders with elongated legs III that comprise the *Saitis* group: the European *Saitis barbipes* (Simon 1868) (type of the genus *Saitis* Simon 1876), two new species of Australian *Saitis* (*S. mutans* and *S. virgatus*), *Hypoblemum albovittatum* sensu Žabka & Pollard 2002, three species of *Lycidas* that are transferred to *Maratus* (*Habrocestum chrysomelas* Simon 1909, *Ergane nigromaculata* Keyserling 1883, and *Habrocestum speculiferum* Simon 1909), one species of *Saitis* that is transferred to *Maratus* (*Salticus speciosus* O. Pickard Cambridge 1874), three new species of *Maratus* (*M. robinsoni*, *M. spicatus* and *M. velutinus*), and one additional unnamed species of *Maratus* (*Maratus* species D). Two new varieties of *M. pavonis* (Dunn 1947) are described, and three new locality records for *M. splendens* (Rainbow 1896) are reported, greatly extending its known distribution.

Introduction

Recently Zhang (2012) completed an extensive study of the molecular phylogeny of euophryine salticids. In this study she concluded that one clade comprised of predominantly Australian genera (*Hypoblemum*, *Jotus*, *Lycidas*, *Maileus*, *Maratus*, *Saitis*, *Prostheclina*) included species that were so closely related that all of these genera should be recognized as synonyms of a single genus, *Saitis* Simon 1876. Zhang's analysis of the likely relationships of spiders within these genera was based on only 11 species, however, almost all of which were not identified at the species level. These were labelled as *Jotus auripes*, *Hypoblemum* cf. *albovittatum*, *Hypoblemum* sp., *Lycidas* cf. *griseus*, *Lycidas* cf. *vittatus*, *Maileus* cf. *fuscus*, *Maratus* cf. *amabilis*, *Maratus* sp., *Prostheclina* sp., *Saitis barbipes*, and cf. *Saitis* sp. Based on this analysis, Zhang proposed the transfer of 45 species, almost all not included in her DNA study, into the genus *Saitis*. Here we will refer to this group as '*Saitis* sensu Zhang (2012)'.

Resolution of the phylogenetic relationships between genera in this group is challenging for a number of reasons. It is likely that many and perhaps most of the euophryine species needed to resolve these relationships have not yet been described. Even where species have been described, assignment to genera and published descriptions tend to rely heavily on similarities in the structure of male pedipalps or female epigyna, which in this group tend to be very similar even when other structures are quite different. In many cases, only one sex has been described. As we will discuss here, even the type species of some genera, including *Hypoblemum*, *Jotus*, and *Lycidas*, are not well-known.

Fortunately we have been able to locate populations of the type species of *Jotus* and *Lycidas*. Based on our study of these types and related species with respect to their original descriptions, we are confident that the original separation of genera in this group can be presently maintained, with the exception of *Lycidas* Karsch 1878. Based on the type species *L. anomalus* Karsch 1878, we synonymize this genus with

Maratus Karsch 1878. Žabka (1987) noted the similarity of *Maratus* and *Lycidas*, and this similarity is supported by the photographs of *L. anomalus* that we present here, as well as its behaviour. Žabka suggested that the two genera could be separated by the presence of a 'vast scutum' in *Maratus*. However, *M. pavonis* (Dunn 1947) was described from individuals that had but a simple plate or scutum on the opisthosoma with no lateral flaps, and *M. linnaei* (Waldock 2008) also has no flaps. Some Australian *M. pavonis* do in fact have these flaps (Hill & Otto 2011), and in future work we will also describe two new species of *Maratus* that are very closely related, one with prominent flaps and the other with no trace of them, providing further evidence that this character is insufficient to define *Maratus* and *Lycidas* as separate genera. With reference to *L. chrysomelas* (Simon 1909), Waldock (2002) also described this lack of 'lateral flaps', and proposed two more characters to separate *Lycidas* and *Maratus*: less separation of the embolus and 'conductor' in male *Lycidas*, and large copulatory canals in female *Lycidas*. However, neither character applies to the type species, *L. anomalus*. Here we refer to the 'conductor' of these spiders as the lower (or inner) ring of the embolus. Zhang (2012) calls this simply a 'lamella along embolus'. Consequently, the definition of *Maratus* that we present here includes some of the species described under *Lycidas*, or later transferred to that genus, including *L. anomalus*. The genus *Jotus* has sometimes been considered a synonym of *Lycidas* based on the similarity of genitalia (Žabka 1987, 1991). In this paper we present photographs of *Jotus auripes* to show that this is quite a distinctive species, with unusual modifications of legs I and II in males that bear little resemblance to *L. anomalus*.

Hypothetical phylogeny of *Maratus* and related euophryines

The hypothetical or working phylogeny of the group of related Australian euophryines that we will present here is shown in Figure 1. This presentation provides a view of nested clades and ancestral species within the context of an evolutionary tree proceeding from bottom to top, and is the equivalent of a cladogram. The only major change that we are proposing with respect to existing genera lies in the placement of species presently assigned to *Lycidas*. Because Karsch (1878) created *Lycidas* and *Maratus* in the same publication, we have been able to take the better known of the two names, *Maratus*, to represent a genus of peacock spiders.

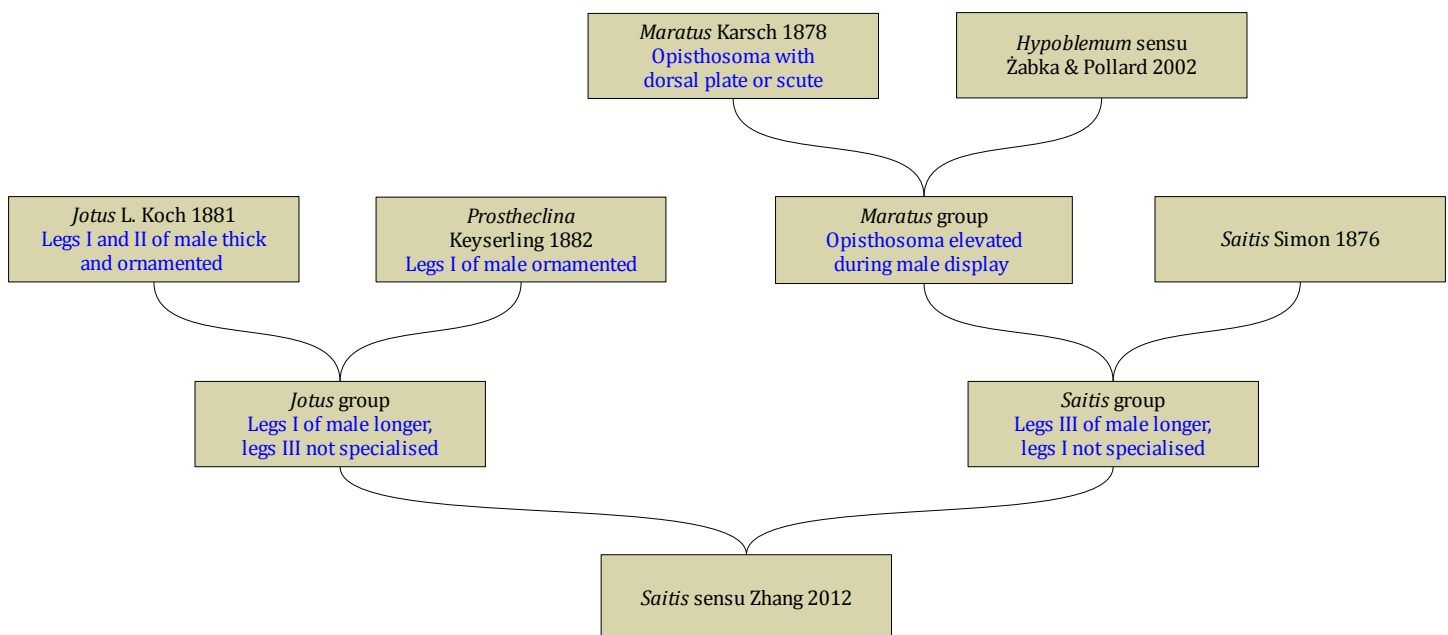


Figure 1. Chart of taxa referred to in this paper, showing their hypothetical relationship and some defining characters. Note that *Lycidas* is not shown as we treat it as a synonym of *Maratus*. All of these species are contained within the genus *Saitis* sensu Zhang 2012. It is likely that the discovery of new Australian spiders will lead to the definition of new genera, particularly within the *Saitis* group.

Note on the Peacock Spiders (*Maratus*)

Genus *Maratus* Karsch 1878

M. amabilis Karsch 1878, type species designated by Žabka 1991

Maratus is here defined as the genus of *peacock spiders*, a group of mostly small and compact Australasian euophryines in which the adult males have a plate (the *fan*) of dense scales, often brilliantly coloured and highly iridescent, on the dorsal opisthosoma. Often contrasting figures or patterns comprised of pigmented scales are superimposed on a background of iridescent scales. Whereas the scales of the dorsal opisthosoma of salticids are usually aligned front to back in the direction of the moult (Hill 1979), scales on this plate often radiate laterally from the center.

These salticids also have a long and highly flexible pedicel, allowing males to elevate the opisthosoma and display its dorsal pattern to females as part of their courtship display. In male *M. vespertilio* Simon 1901b (Otto and Hill 2012), the elevated opisthosoma is also an important part of agonistic interaction with conspecific males. *Maratus* species often have one or more extensible lateral flaps or dense lateral fringes of setae associated with the dorsal opisthosomal plate. Many have the ability to flatten this plate when it is elevated, and to rotate the elevated plate from side to side during their display. As members of the '*Saitis* group' almost all have relatively long legs III, often richly decorated, that also play a prominent role in their courtship display (Hill 2009, Otto & Hill 2010, 2011, Girard *et al.* 2011, Hill & Otto 2011). Legs I and II are short by comparison and about the same length.

Female *Maratus*, like those of related euophryines, tend to vary little in generally cryptic appearance, and both the female epigynum and the male pedipalp also tend to vary little between species. Females are typically compact and cryptic in appearance, their bodies covered with a variegated pattern of mixed white to grey, tan or brown scales. The epigynum is simple, with a pair of prominent, circular anterior windows (fossae), and a pair of oval spermathecae of comparable size to the rear. Published records of the appearance of male pedipalps vary according to the style and perspective of the artist, but are relatively simple and typically euophryine in appearance with a flat, circular, horizontal coil terminating antero-laterally with the slightly projecting apex of the embolus, often with a smaller chitinous semi-circular coil just beneath it, also terminating antero-laterally beneath the apex of the larger, outer coil. In drawings prepared from a strictly ventral perspective, only a single, ventral coil and apex are visible. The RTA (retrolateral tibial apophysis) also tends to be simple with a slightly blunt tip. Epigyna and male pedipalps in all species for which they are known are distinctly different from those of *Saitis barbipes*.

Introduction to species accounts

The species that will be depicted here, with respect to the clades shown in Figure 1, are:

***Jotus* group.** Legs I modified or ornamented in males, legs III not specialized and shorter.

***Jotus* L. Koch 1881.** Žabka (1987) previously merged *Jotus* with *Lycidas*, but it is our view that the type species of these genera are quite different.

1. *Jotus auripes* L. Koch 1881, type species for *Jotus* L. Koch 1881

***Prostheclina* Keyserling 1882.** Until the recent description of six new species (Richardson & Žabka 2007), this genus was monotypic.

2. *Prostheclina pallida* Keyserling 1882, type species for *Prostheclina* Keyserling 1882

Saitis group. This is the group previously identified as *euophryine jumping spiders that extend their third legs during courtship* (Hill 2009). The use of elongated legs III in the display of most males within this group is remarkable. These spiders also often have relatively short legs I and II, so that the use of legs III during courtship display precludes the simultaneous use of legs I for protection. In many other salticids like *Thiodina*, for example, the role of elevated legs I in protecting a male from the attack of a previously mated female is a general feature of courtship (Hill 2012). Of equal importance is the use of legs III in locomotion, particularly as they are used to provide power to a jump. Male spiders in this group often hold the elongated femora of legs III in a vertical position when walking.

Saitis. For reference, we include an account of the European spider *Saitis barbipes* (Simon 1868), as well as two new Australian species. The genus *Saitis* still includes a number of species that are not closely related, but it is a useful holding place for the collection of similar spiders until we know enough to split these into separate genera within the *Saitis* group.

3. *Saitis barbipes* (Simon 1868), type species for *Saitis* Simon 1876
4. *Saitis mutans*, new species
5. *Saitis virgatus*, new species

Maratus group. In this group, male spiders use not only their extended legs III, but also their elevated opisthosoma to display to females or to males of the same species. Evidence that the two genera that we presently place in this group are closely related includes not only similarities in their courtship display, but also a close similarity between male pedipalps, with a circular embolus, and female epigyna. The pedicel is large and extremely flexible, and may be rotated by more than 180° by mating females.

Hypoblemum sensu Żabka & Pollard 2002. We have some reservations about the use of this genus name that will be discussed in the species account. This spider is important, because it behaves much like a *Maratus* without a dorsal opisthosomal plate, but looks more like a *Saitis*.

6. *Hypoblemum albovittatum* sensu Żabka & Pollard 2002

Maratus. We elevate this genus to represent the endemic Australian *peacock spiders*, including a number of species previously assigned to either *Lycidas* or *Saitis*. Males have a dorsal opisthosomal plate covered with a dense array of scales. We previously compiled a list of known species, including unnamed species A, B and C (Otto & Hill 2011). Here we name three new species, and provide a photographic record of one more unnamed species.

7. *Maratus anomalus* (Karsch 1878), new combination (from *Lycidas*)
8. *Maratus chrysomelas* (Simon 1909), new combination (from *Lycidas*)
9. *Maratus nigromaculatus* (Keyserling 1883), new combination (from *Lycidas*)
10. *Maratus pavonis* (Dunn 1947), new varieties
11. *Maratus robinsoni*, new species
12. *Maratus speciosus* (O. Pickard-Cambridge 1874), new combination (from *Saitis*)
13. *Maratus speculiferus* (Simon 1909), new combination (from *Lycidas*)
14. *Maratus spicatus*, new species
15. *Maratus splendens* (Rainbow 1896), new locality records
16. *Maratus velutinus*, new species
17. *Maratus* species D (Gnangarra Peacock Spider)

Species accounts

1. *Jotus auripes* L. Koch 1881, type species for *Jotus* L. Koch 1881

Jotus auripes L. Koch 1881. — Simon 1901a

Lycidas auripes. — Žabka 1987

Jotus auripes. — Davies & Žabka 1989; Žabka 1991

Published descriptions of this distinctive species (L. Koch 1881, Davies & Žabka 1989) are quite good, although only the original description (Appendix 1) describes its unique colouration. At the same time, this remains a little-known species.

Previously, the spider that we identify as *Jotus auripes* has been reported only from Sydney, New South Wales. However, *Jotus auripes* frequently gets confused with other species (possibly unnamed) that have similar abdominal markings (*e. g.* Atkinson 2010, Zhang 2012) and any existing record of this species requires scrutiny. Here (Figures 2-3) we illustrate the male and possibly the female of this species from You Yangs Regional Park in Victoria, about 40 km west of Melbourne. In Figure 4, we show males from the Sydney area that are somewhat lighter in colouration and have middorsal patches of white setae on the carapace. The femora of legs I and II of males are wide, covered with bright red-orange setae on the anterior side. Very long setae projecting laterally from the pedipalps are brilliantly iridescent, and long fringes of white setae at the top of each pedipalp form a continuous horizontal line with long white setae of the clypeus of this spider. The anterior eye row of the male overhangs the clypeus (Figure 4:3-4), allowing the large fringed pedipalps to be pulled back under the anterior eyes. Legs III have no special modifications.

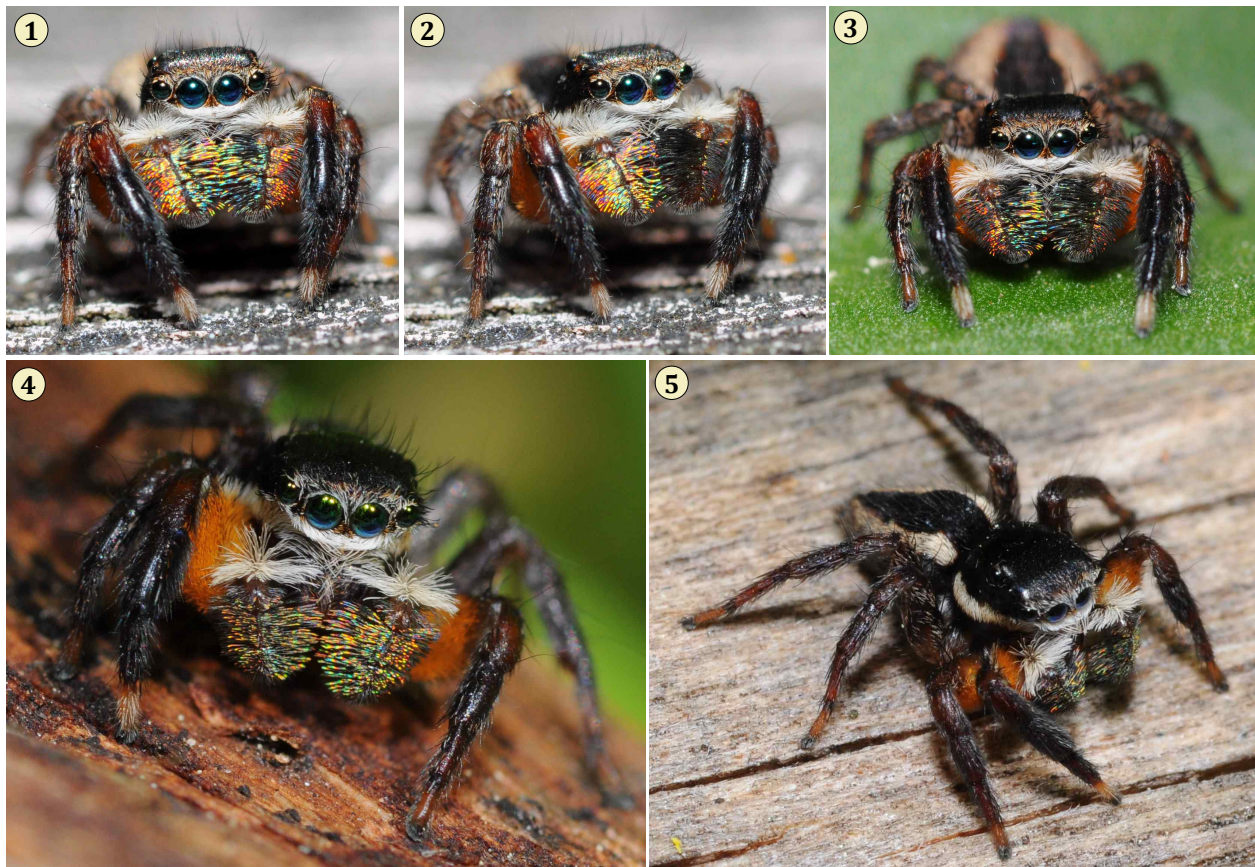


Figure 2. Male *Jotus auripes* from You Yangs Regional Park, about 40 km west of Melbourne, Australia. **1-4,** Face views of an adult male. Notice (2) how the iridescent long setae vary from dark to brilliantly multi-coloured, depending on their orientation. **5,** Oblique view of the same male, revealing the bright orange setae on the anterior femora of legs I and II. Photographs Copyright © Mark Helle, used with permission.



Figure 3. Presumed female *Jotus auripes* from You Yangs Regional Park, about 40 km west of Melbourne, Australia. 1-4, Face views of an adult male. There are no obvious specializations of the legs, but this female also has broad white lateral carapace bands. Photographs Copyright © Mark Helle, used with permission.



Figure 4. Male *Jotus auripes* from the Wildflower Garden Reserve in the Sydney suburb of St. Ives (SEP 2012). 1-2, Dorsal views. 3, In this stance, the bright red-orange femora of legs I and II are visible to the front of the spider. 4, Front view with chelicerae concealed by the many long iridescent setae of the pedipalps. Multi-hued light from these setae is highly directional, mostly toward the front. 5, Pedipalps lowered, revealing the overhang of the first eye row over the clypeus. 6-8, Oblique views.

During their courtship display (Figure 5), males assume an erect stance on legs II-IV and move pedipalps and legs I up and down.



Figure 5. Four sequential but not consecutive frames from a video of a male *Jotus auripes* from the Wildflower Garden Reserve displaying to a nearby female. Pedipalps and legs I were moved up and down as the spider maintained an erect stance on legs II-IV.

The male pedipalp (Figure 6) differs little from that of many *Saitis* group euophryines in having a circular outer loop of the embolus partly concealing a semi-circular inner loop, but the tip of the latter is quite prominent, almost as large as that of the outer loop. It is likely that this inner loop, often very fine compared to the outer loop, is present but also concealed in ventral illustrations of the male pedipalp of many other euophryine species. There are also very small teeth along the distal edge of the retrolateral tibial apophysis (RTA), a detail that may also be found but not reported in other euophryines. It is likely that these teeth help the male to secure the pedipalp during the mating process.

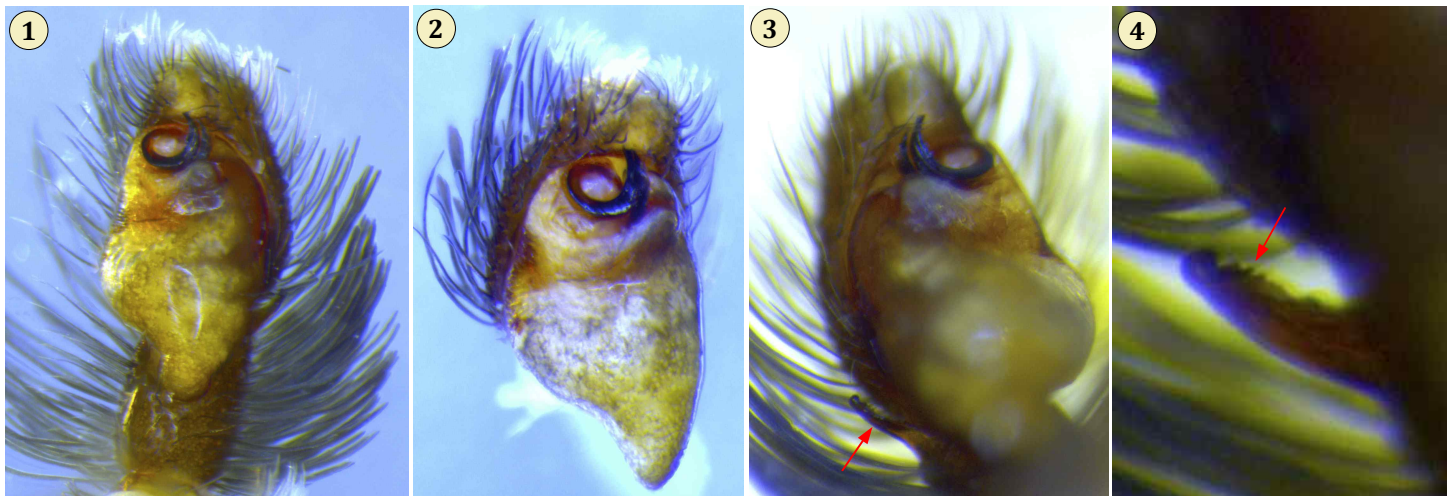


Figure 6. Pedipalp of male *Jotus auripes* from the Wildflower Garden Reserve. **1-2**, Two ventral views of the left pedipalp of two different males, showing the thick outer loop of the embolus, with a partially concealed but equally thick inner loop under its apex. **3**, Oblique ventral view of a right pedipalp, showing the retrolateral tibial apophysis (RTA, arrow). **4**, Detail from (3), showing the blunt tip and the fine teeth along the distal margin of the RTA.

2. *Prostheclina pallida* Keyserling 1882, type species for *Prostheclina* Keyserling 1882

Prostheclina pallida Keyserling 1882. — Davies & Žabka 1989; Richardson & Žabka 2007

As is the case with *Jotus*, the femur of legs I and II is relatively thick, but only legs I of male *Prostheclina* are elongated and ornamented for use in display. These spiders are also relatively long-legged and have no special modifications of the pedipalps for display.

Until recently, *P. pallida* was the only species associated with this genus. The original description (Keyserling 1882; Appendix 2) includes a female and a male. However, Davies & Žabka (1989) could not locate Keyserling's original male specimen, and they suggested that it was not conspecific with the female, which they used to define and to redescribe this species. At this point there is no way to tell if this is true, but fortunately the female has distinctive markings that facilitate its identification (Figure 7).

Keyserling's description of the colouration and setation of the male was, however, quite good, and the subsequent description (Davies & Žabka 1989) did not include any information about colouration.



Figure 7. *Prostheclina pallida* from eastern Australia. **1-3**, Males from The Gap, northwest of Brisbane, Queensland. **4**, Male from Obi Obi, about 100 km north of Brisbane, Queensland, with bristled legs I outstretched. **5-6**, Females from The Gap. **7-9**, Male from Seal Rocks, north of Newcastle, New South Wales (23 JAN 2009, J. Otto). The Queensland spiders shown here (1-6, identified by Robert Whyte) have a middorsal band of white scales on the carapace, a feature not seen in the male from Seal Rocks. Black spots around the eyes are associated with pigment of the lateral eye capsules that can be seen through the translucent cuticle. Photographs 1-6 Copyright © Robert Whyte, used with permission.

Recently six new species of *Prostheclina* were described, accompanied by a second redescription of *P. pallida* (Richardson & Žabka 2007). Apart from differences in size, Richardson & Žabka documented differences in colouration or scalation, and characterized these spiders as foliage dwellers in the wetter areas of eastern Australia. This agrees with the lack of specialization of legs III in this genus; elongated legs III can be found in many ground-dwelling salticids of the *Saitis* group. *P. pallida* has the widest known distribution of the group, found in many localities from the southeastern corner of Queensland to Adelaide, within 200 km of the coast. The other species have been found from northern Queensland to Tasmania.

3. *Saitis barbipes* (Simon 1868), type species for *Saitis* Simon 1876

Attus barbipes Simon 1868

Saitis barbipes. — Simon 1876; Žabka 1987; Metzner 1999; Hill 2009

Although it may well be true that there are no real *Saitis* previously described from Australia (Richardson & Žabka 2007), *S. barbipes* has close affinities with the Australasian euophryines that we consider part of the *Saitis* group. We also think that there may be a good number of Australian *Saitis* that have not been described. We include the well-known European *S. barbipes* here for comparison with these Australian species. The Mediterranean species of *Saitis* have a largely allopatric distribution with most localities of record situated along the northern coast of the Mediterranean (Figure 8). These spiders have been most often found near sea ports or islands, with a center of diversity in Crete where four species have been reported. If the real diversity of this genus turns out to be Australian, then it is possible that these Mediterranean species represent a relatively recent introduction into the area in historic times, either as a result of shipping or in association with the introduction of Australian plants into Mediterranean gardens.

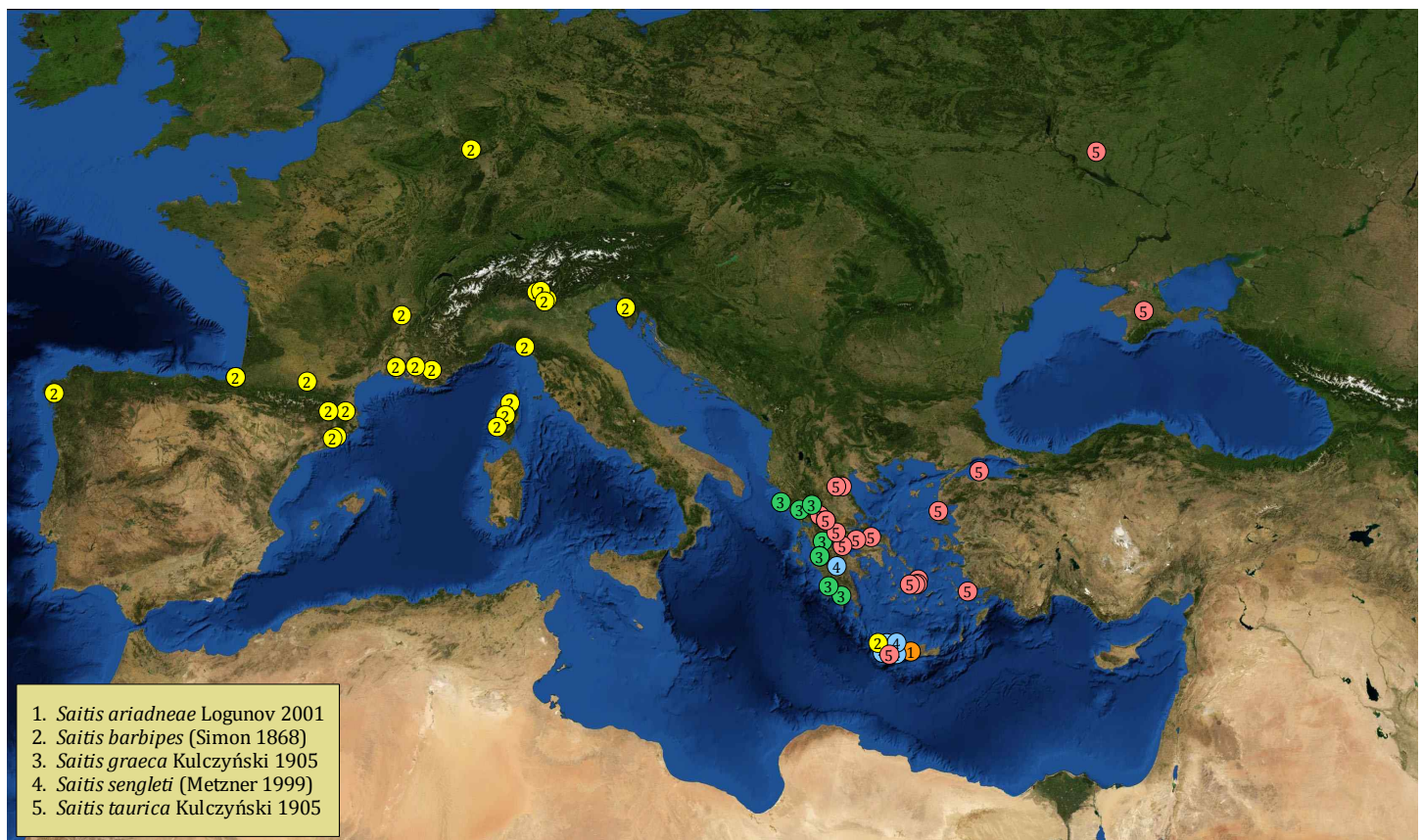


Figure 8. Localities associated with five Mediterranean species of *Saitis*. Except for Crete, these species are largely allopatric in distribution. In addition to the localities shown here, there are also scattered records from countries to the north and east, including Romania and Russia. *S. barbipes* has also been found at Cape Verde. Localities are based on Metzner (1999, 2012), Proszynski (2012) and more recent photographic records including the spiders shown in Figure 9. The background image is based on the NASA *Blue Marble*, a combination of bathymetric modeling and satellite imaging.

Like most *Maratus* species, male *S. barbipes* (Figure 9) have relatively long legs III which they extend laterally in a series of semaphore movements during courtship (Hill 2009). For the most part, these displays are known to include primarily up-and-down bilateral movement of the laterally extended legs III, but no elevation of the opisthosoma, and no specialized decoration of the dorsal opisthosoma. Opisthosomal bobbing that is observed in the courtship of this species agrees with that seen in many salticids, as well as in many other spiders. The Mediterranean *Saitis* species vary with respect to the relative size and shape of the embolus of the male pedipalp (Metzner 1999, 2012, Hill 2009).

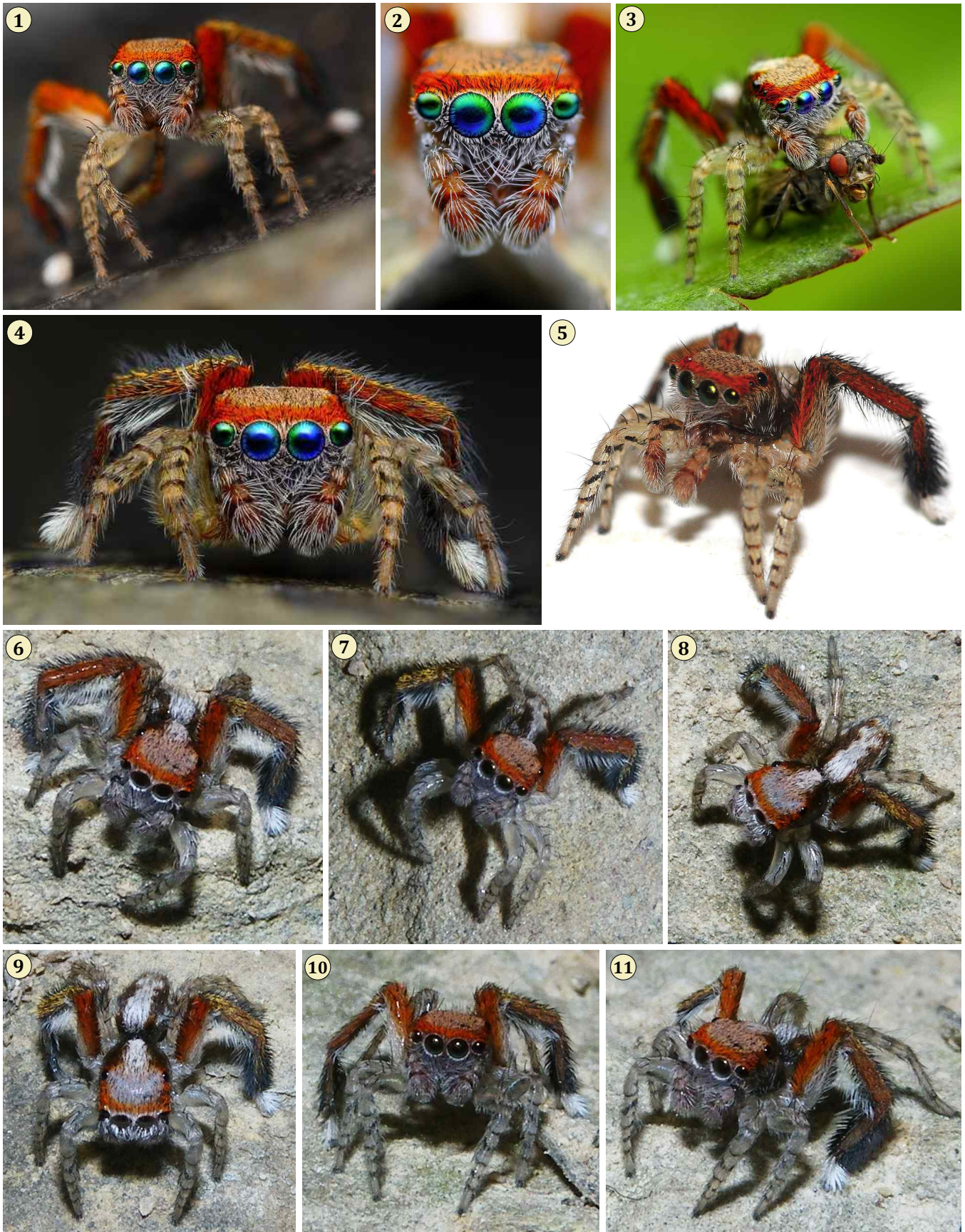


Figure 9. Adult male *Saitis barbipes* (Simon 1868) from Spain. **1-4**, Barcelona, Spain (MAY 2010), Copyright © Tomas Rak, used with permission. **4**, Image compiled from a stack of 11 images to improve depth of field. **5**, Rianjo, Galicia, Spain (14 SEP 2011), Copyright © Chausino, used with permission. **6-11**, Sant Jaume de Frontanyà, Spain, 15 APR 2009, Copyright © Óscar Méndez, used with permission.

The genus *Saitis* Simon 1876, based on the type species *S. barbipes*, is in need of revision. Over the years many different euophryines, from almost all continents, have been moved into this genus or out of it. A cursory review of descriptions available for species presently placed in this genus suggests that only a limited number of these, including *S. graeca* (Simon 1868), *S. sengleti* (Metzner 1999) and *S. taurica* Kulczyński 1905 are closely related to the type. Several African spiders placed in this genus by Peckham & Peckham (1903; *leighi*, *mundus*, *sapiens*) are quite different.

4. *Saitis mutans*, new species

Type specimens. This species has been found only at Newcastle, New South Wales (32° 59' 50.42" S, 151° 42' 17.22" E, 15 SEP 2012, J. Otto coll.). The holotype (♂) will be deposited with 7 male and 20 female paratypes, all from this locality, in the Australian Museum, Sydney.

Etymology. The species name (*mutans*) is the Latin word for *changing*, a reference to the fact that females collected at the type locality were highly variable in appearance.

Diagnosis. In general appearance and the pattern of body colouration, male *S. mutans* resemble most closely the Mediterranean *S. graeca* Kulczyński 1905, *S. sengleti* (Metzner 1999), and *S. taurica* Kulczyński 1905. Like *S. taurica*, *S. mutans* has a dark lateral sclerite proximal to the embolus, but unlike any of these species it has a thick extension or flange along the proximal arc of the embolus (Figure 10). In addition, a median band or patch of off-white scales does not extend beyond the anterior half of the eye region (ocular quadrangle) in *S. mutans*.

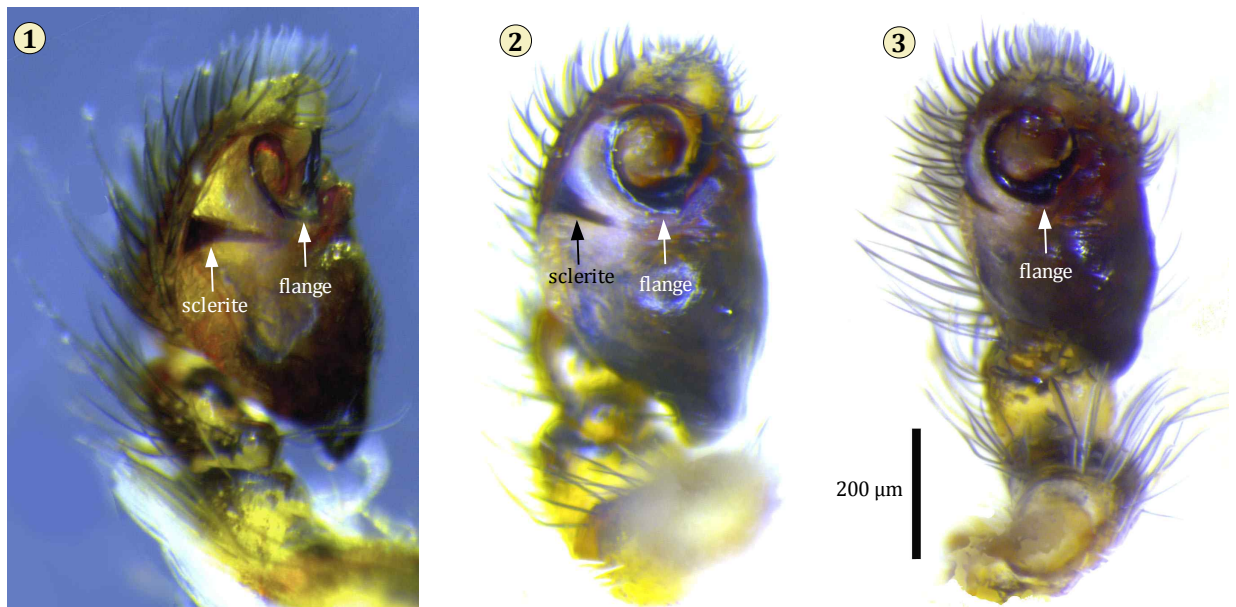


Figure 10. Left pedipalp of a male *Saitis mutans* from Newcastle, New South Wales. The acute lateral sclerite resembles that of *S. taurica*, but that species does not have the thick extension or flange along the proximal arc of the embolus shown here.

Description of male. Six males ranged from 3.35 to 3.72 mm in length as measured from the front of the AME to the tip of the spinnerets. Unlike females, males varied little appearance. Colouration is generally cryptic or variegated, with mixed orange-brown, brown, and white to off-white setae on a brown to dark brown surface (Figures 11-12). Four darker stripes or patches are present in the front half of the eye field: one pair comprised of brown to light-orange-brown setae above and behind each PLE, and one pair extending behind each AME, uniting at the median in front of the PLE to form a dark and sometimes indistinct V-shaped figure. Also in the front half of the eye field, between the darker stripes, are three short stripes or patches of white to off-white setae, one at the median, and one at each side extending

toward the rear between the AME and ALE. The carapace also has a broad band of lighter (white to off-white) setae on each side. Below the anterior eyes are white setae, and below these longer tan setae extend below the AME over the clypeus. The dorsal opisthosoma, oval in shape, has a pattern similar to that of some females, with mostly white setae in a broad band at the midline, surrounded by brown to red-brown setae on either side. To each side of the midline band is a pair of indistinct white spots, with a larger pair of white spots, which may be fused into a single transverse band, behind this, and a patch of white setae at the rear, on the anal tubercle. At the front end of the midline band is a narrow tuft of long white setae that extend forward to make contact with the prosoma.

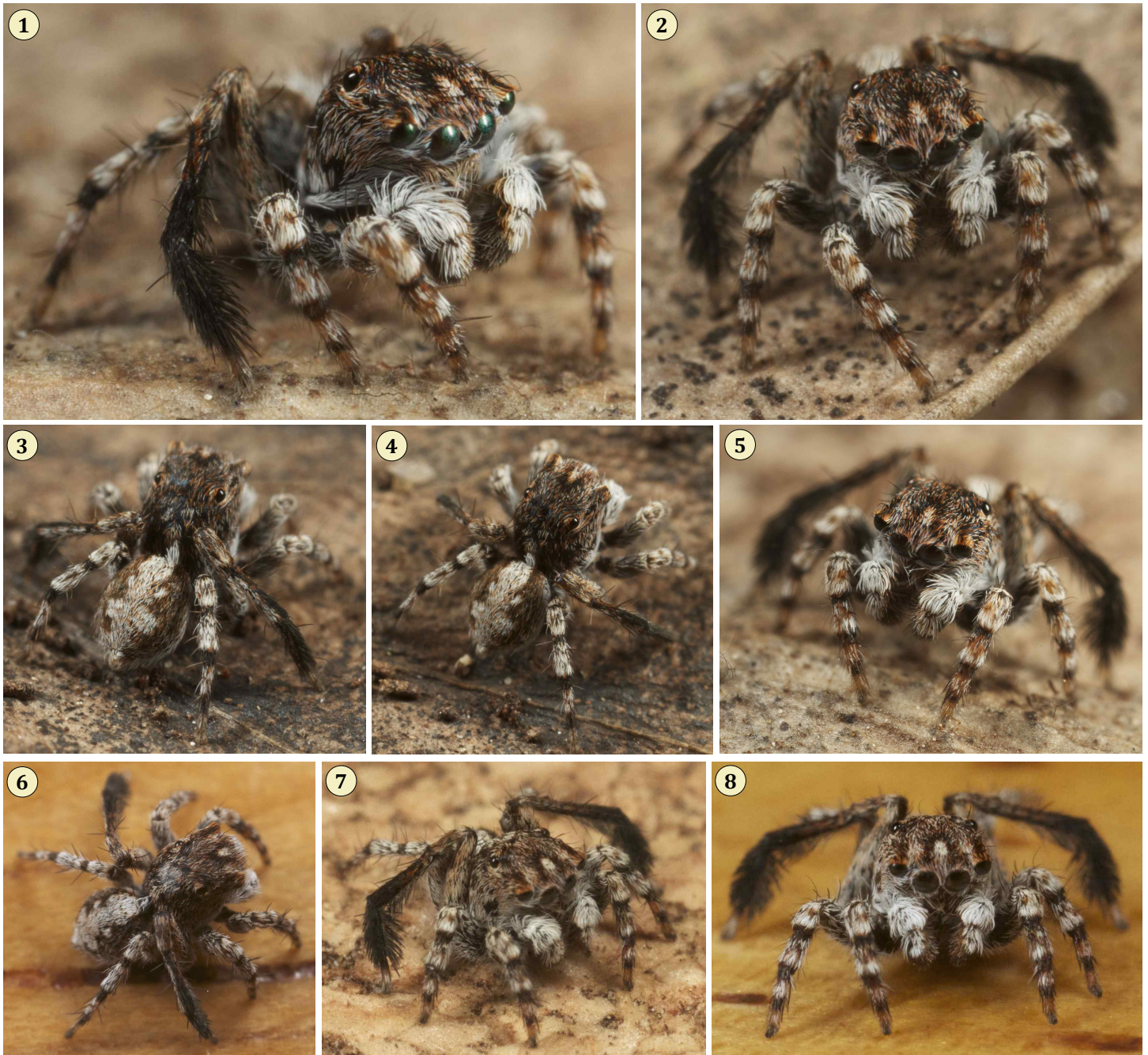


Figure 11. Male *Saitis mutans* from Newcastle, New South Wales. This stance, with femora III held in a near vertical position and patella-tibia III extended laterally, is typical of *Saitis* species. These have less orange-brown colouration on the proximal tibiae III, and on the medial side of the pedipalps, than the holotype male (Figure 12).

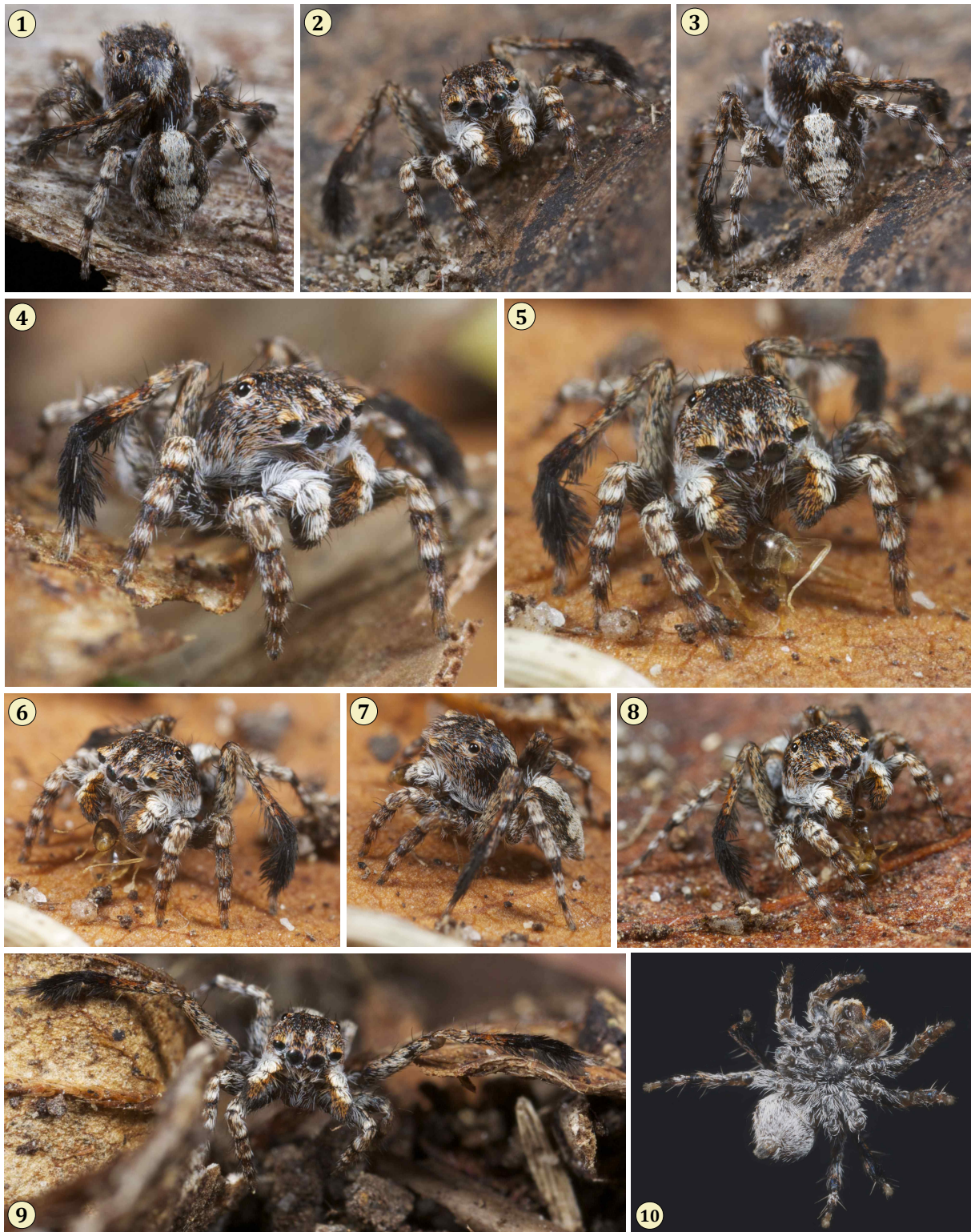


Figure 12. Holotype male *Saitis mutans* from Newcastle. **5-8**, Feeding on an ant. **9**, Displaying to a female with legs III extended and pedipalps held to the sides. **10**, Uniform colouration of underside.

Legs I and II short and about the same length, leg IV longer, and leg III by far the longest. Except for the darker parts of legs III, the legs are mostly brown with a covering of white setae and dark brown to black rings on each segment. Proximal tibia III with variable red-brown or dark orange setae. Distal tibia to proximal tarsus III dark, particularly in front, fringed with long black to black-brown setae. Distal tarsus III lighter in colour, and may have some shorter white setae. Pedipalps covered with long white setae above, dark brown setae distally, with variable orange-brown or brown setae medially. These medial setae are exposed when the male holds the pedipalps to the sides during courtship (Figure 12:9). The

sternum and coxae are dark with scattered off-white setae. The underside of the opisthosoma is uniformly covered with off-white setae (Figure 12:10).

Description of female. Females (n=19) longer than males, ranging from 3.72 to 4.12 mm in length as measured from the front of the AME to the tip of the spinnerets. The epigynum (Figure 13) resembles that of both *S. taeniata* Keyserling 1883 and *S. taurica* Kulczyński 1905, but the females of those species have a different colour pattern.

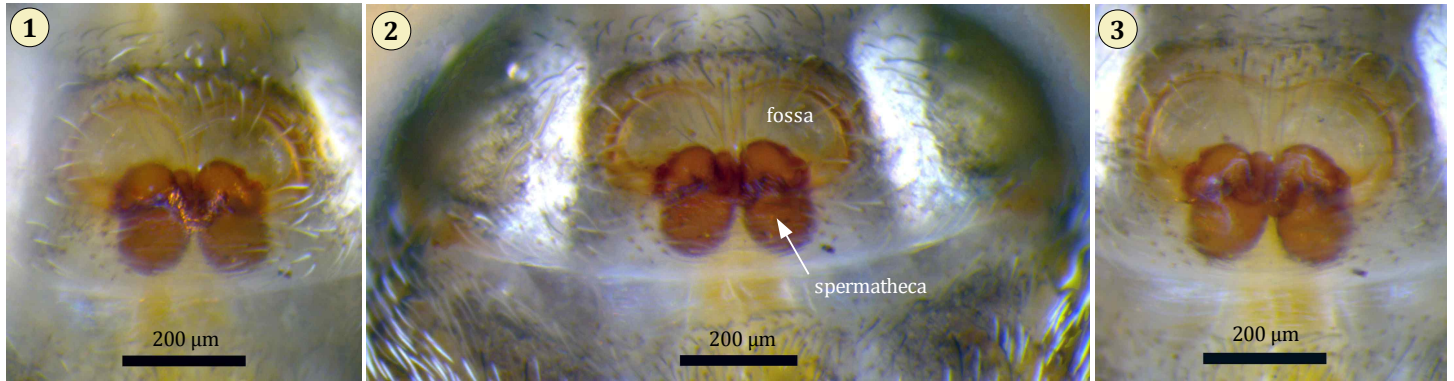


Figure 13. Three views, with varying illumination, of the epigynum of a female *Saitis mutans* from Newcastle, New South Wales. This epigynum, with a relatively small, circular spermathecae, resembles that of both *S. taeniata* and *S. taurica*.

Many females have a cryptic colour pattern similar to that of the males (Figure 14), but others have either a more uniform gray to tan pattern, or a a boldly contrasting pattern of light and dark scales (Figure 15). As in males, legs I and II are about the same and short, legs IV are longer, and legs III are the longest. All legs of the female have a similar pattern, most covered with off-white setae with dark segmental rings.

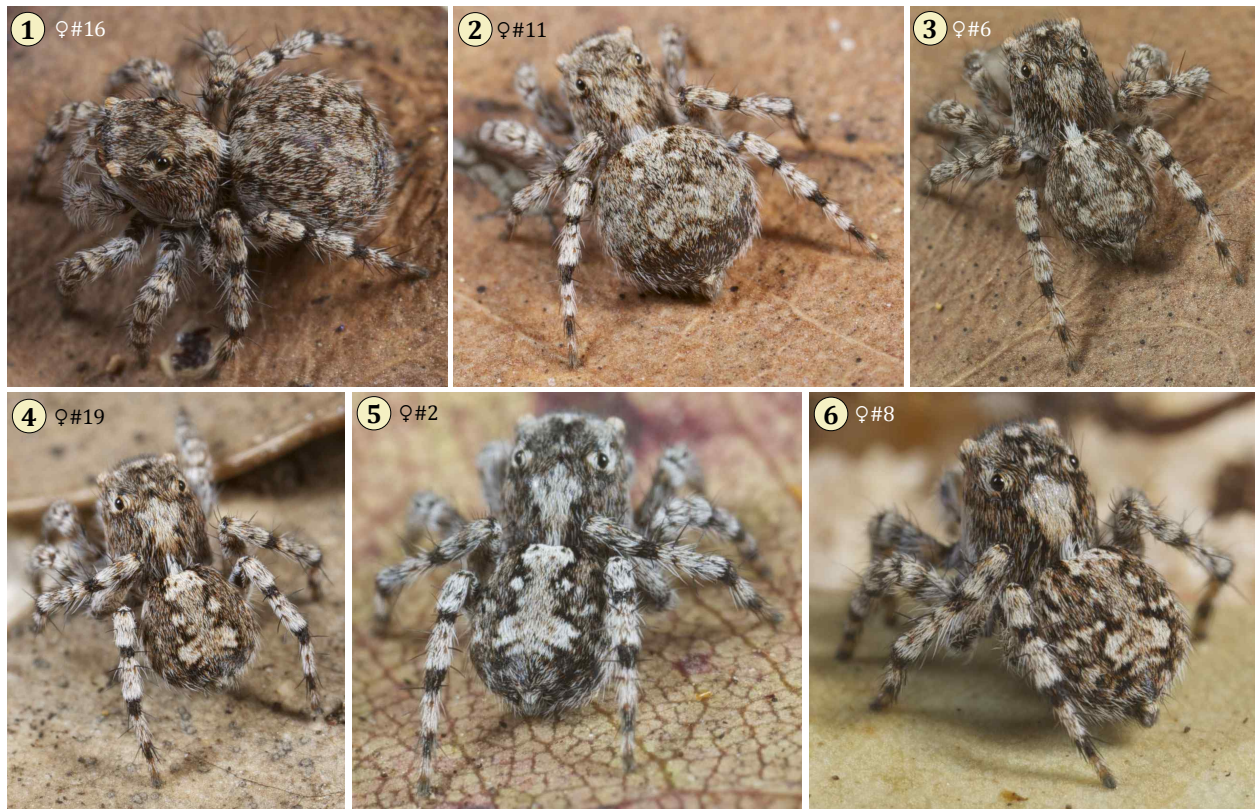


Figure 14. Numbered (♀#) paratype *S. mutans* females with colouration similar to that of males. This resemblance includes the presence of a narrow tuft of long white setae at the front of the opisthosoma. Note the presence of lighter scale patches above the ALE, and a broad median tract of lighter scales behind the PLE.

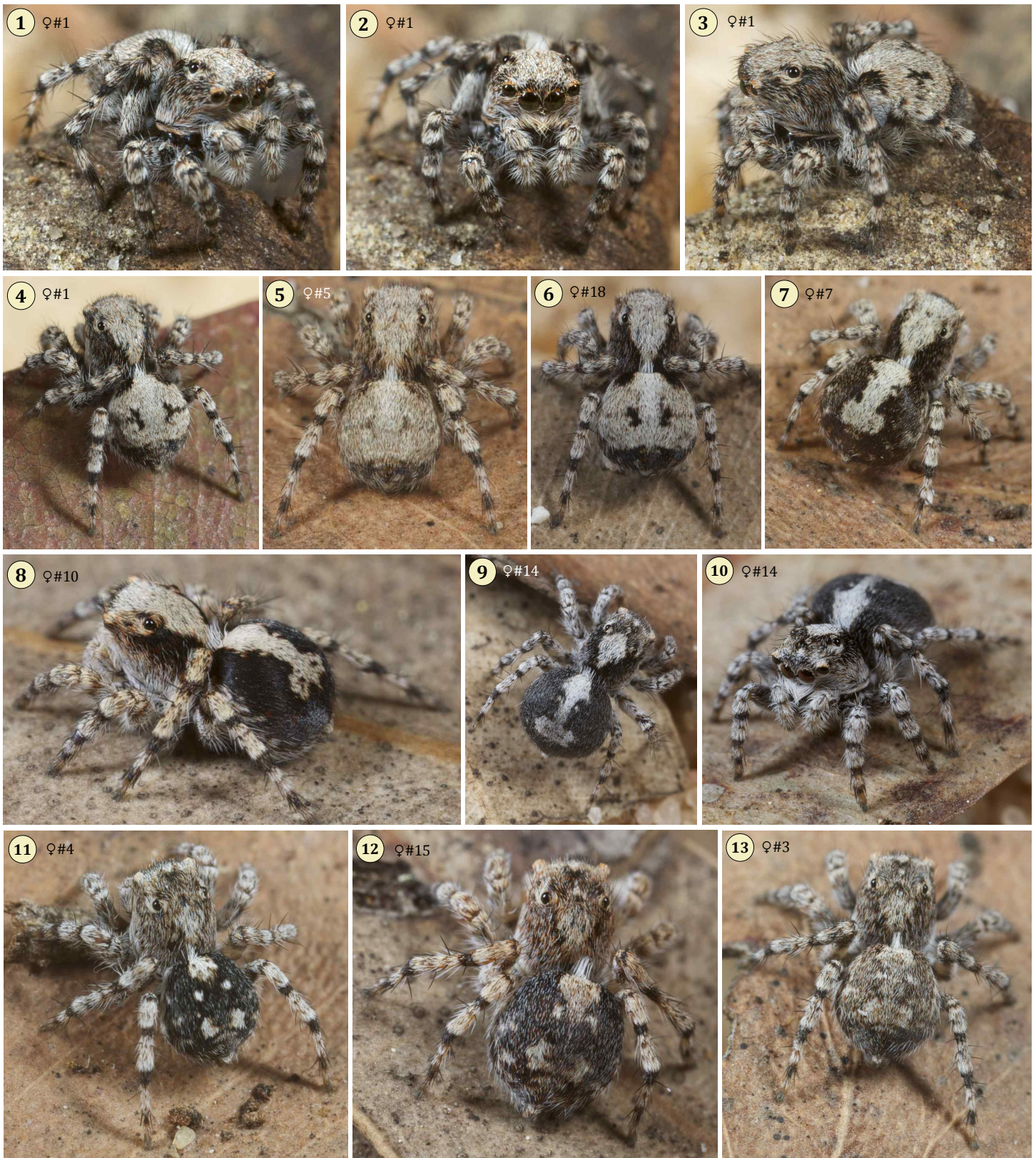


Figure 15. Numbered (♀#) paratype *Saitis mutans* females with different colouration. Female (13) is closest to the male pattern, with a pair of smaller spots to the front of the dorsal opisthosoma, and the larger, rear spots joined to form a single median band. **1-4**, Four views of one female with a relatively uniform pattern of tan scales, but with darker areas on the postero-lateral prosoma. Note (2) the presence of long tan scales on the clypeus, and some dark orange-brown scales around the anterior eyes, features also seen in males. **5-6**, Two females also with a relatively uniform pattern of scales. **7-8**, Two females with extensive dark lateral areas on both prosoma and opisthosoma, contrasting with a light median band. **9-10**, Two views of another female with dark lateral bands. This individual had mostly black and white, but not tan, setae. **11-13**, Three other females with different patterns, but without dark areas on the prosoma.

The courtship display of the male *Saitis mutans* (Figures 16-17) includes simple semaphore movements of the laterally extended legs III, very much like the display of *S. barbipes* (Hill 2009), with neither elevation of the opisthosoma nor flexion of metatarsi III as seen in many *Maratus* (Otto & Hill 2010, 2011; Girard et. al 2011; Hill & Otto 2011).

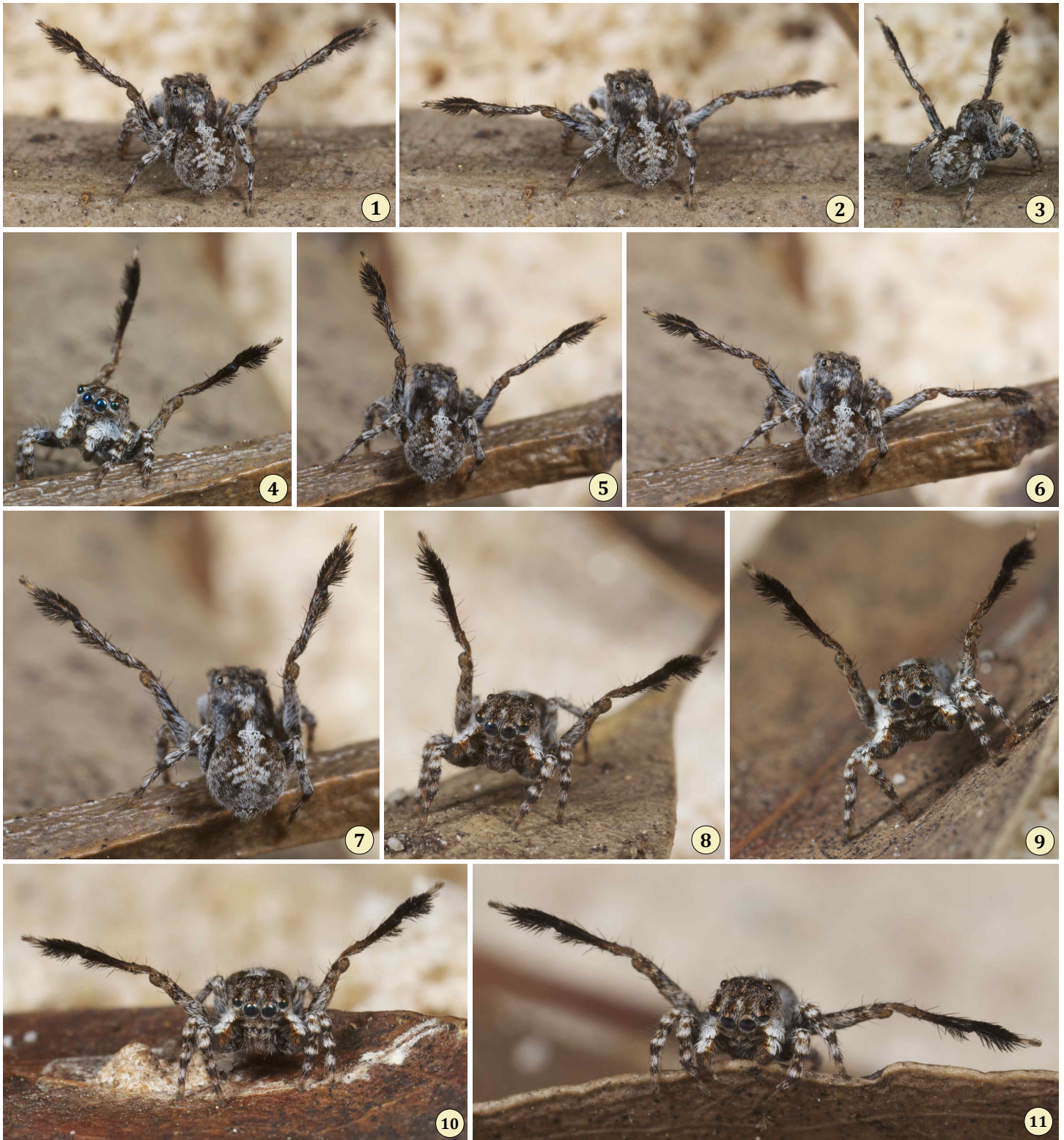


Figure 16. Some semaphore positions assumed by a male *Saitis mutans* (paratype ♂#4) as it displayed to a female. Note the separation of the pedipalps to expose the chelicerae as legs III were extended laterally and moved up and down.



Figure 17. Composite from two photographs (for focus) to show the position of a displaying male *Saitis mutans* (upper left, with pedipalps held apart and legs III extended) relative to a watching female.

5. *Saitis virgatus*, new species

Type specimens. The holotype (♂#3), four paratype males and two paratype females were collected in Ku-ring-gai Chase National Park, New South Wales (33° 35' 21.31" S, 151° 16' 3.10" E, 7-14 OCT 2012, J. Otto coll.). One additional paratype male is from Newcastle, New South Wales (32° 59' 40.43" S, 151° 42' 3.61" E, 6 OCT 2012, J. Otto coll.) and another is from Rocky Hall near Eden, New South Wales (36° 54' 52.4" S, 149° 29' 19.4" E, 8 OCT 2012, S. Harris and A. Cruz coll.). The holotype and all paratypes will be deposited in the Australian Museum, Sydney.

Etymology. The species name (*virgatus*) is the Latin word for *striped*, a reference to the fact that males have two prominent transverse white or off-white bands across the dorsal opisthosoma.

Diagnosis. The structure of the pedipalp (Figure 18) and the long, fringed legs III are typical of *Saitis*. However, male *Saitis* tend to have a variegated pattern of scales on the dorsal opisthosoma with a lighter-coloured central figure, and *S. virgatus* has solid, contrasting transverse bands. Females have a bold and relatively detailed pattern of light and dark lines, sometimes indistinct, on the opisthosoma.

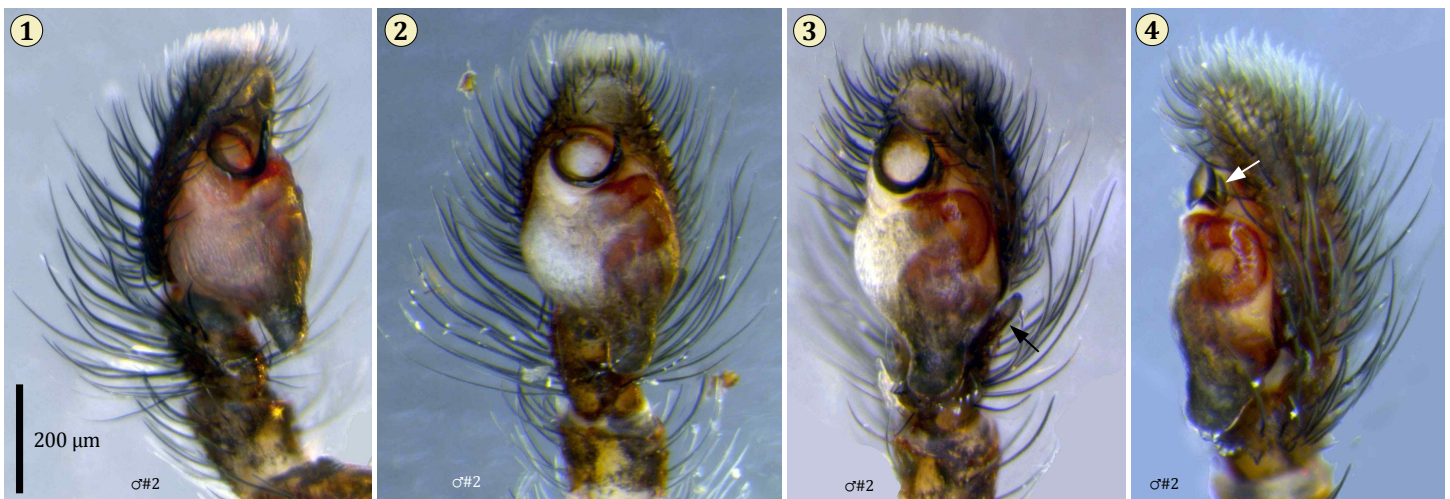


Figure 18. Four views (1, medial-ventral, to 4, lateral) of the left pedipalp of a male *Saitis virgatus* from Ku-ring-gai Chase National Park. **3**, The RTA (arrow) is simple and blunt. **4**, The apex of the inner ring of the embolus (arrow) is small but distinct. In all respects this pedipalp is very similar to that of other members of the *Saitis* group, including *Maratus*.

Description of male. Length 4.37-4.47 mm (n=6). The apex of the circular outer ring of the embolus projects distally on the lateral side, and beneath this is a smaller apex of a partial inner (lower) ring. The RTA is simple and blunt. The carapace is dark, with a median tract of off-white setae extending from the middle of the eye region, ending just after the carapace begins to fall off steeply at the rear (Figures 19-20). Some red-orange scales are placed around the lateral eyes, and around the top of the AME. The clypeus is covered with grey setae, of the same colour as grey setae of the basal parts of the pedipalps. The chelicerae are covered with orange setae that are often concealed when the pedipalps are held above them. The lateral margins of the carapace are marked by a narrow band of white setae. Legs I and II are shorter, dark brown to black. Legs III and IV are black with patches of white scales. Legs III are by far the longest, with a prominent ventral fringe of long black setae extending from the tibia to the metatarsus. The tibiae and metatarsi III also have fringes of long white setae extending to the rear. Tarsi are brown, except for those of legs III that are covered with white setae, contrasting with the black metatarsi. The dorsal opisthosoma has a background cover of black setae, with a white anterior transverse band and an off-white posterior transverse band with separated from the spinnerets by a band of black setae. In males from the Eden Hinterland, the anterior band was separated by black setae at the median (Figure 20:4-6). The endites, labium, and coxae are brown, the sternum darker brown (Figure 21). The underside of the opisthosoma is uniform brown.



Figure 19. Holotype male ($\sigma^{\#}3$) *Saitis virgatus* from Ku-ring-gai Chase National Park. **1**, Note the red-orange scales above the anterior eyes, the two transverse bands or stripes on the dorsal opisthosoma, and the long white setae extending to the rear of leg LIII. **2**, Legs I and II are about the same in length and appearance, shorter than legs III and IV. From the front, the prominent black ventral setae of leg LIII are in full view. Separation of the dark pedipalps reveals the bright orange colour of the chelicerae. **3**, Rear view, showing what appears to be a phoretic mantispid larva encircling the pedicel, just to the front of the anterior opisthosomal band. **4**, Face view. **5**, Oblique view from the front, showing both the black and the white setae of leg LIII. Here the spider appears to be prepared for a jump powered by legs III. **6**, Dorso-lateral view. Note the thin band of white setae on the lateral margin of the carapace.



Figure 20. Other male *Saitis virgatus*. 1-3, Male from Ku-ring-gai Chase National Park. When the pedipalps are held together (1), the bright orange colour of the chelicerae is not visible. The grey basal setae match the colour of the clypeal setae. 4-6, Male from Rocky Hall near Eden, New South Wales. The anterior band of males found at this locality was interrupted.



Figure 21. Underside of male *Saitis virgatus* from Ku-ring-gai Chase National Park. 1, Ventral view of holotype male walking on glass. 2, Ventral view of paratype male specimen.

Description of female. Length 4.89-5.88 mm (n=2). Large posterior spermathecae of the epigynum are adjacent to each other, and about the same size as the clear fossae. A pair of smaller anterior spermathecae are also visible through the transparent cuticle (Figure 22). In general structure, the epigynum is similar to that of *Saitis mutans* (Figure 13), but the posterior spermathecae are proportionately much larger.

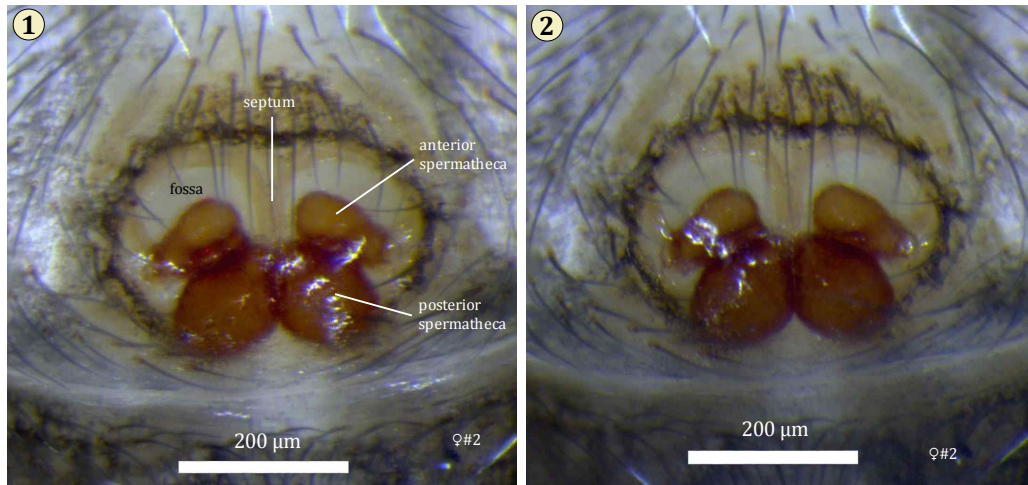


Figure 22. Two views of the epigynum of a female *Saitis virgatus* from Ku-ring-gai Chase National Park. The posterior spermathecae are close together, similar in size to the fossae. These structures, in the colour shown here, are visible due to the transparency of the overlying cuticle.

Carapace black, with a median and dorsal-lateral bands of off-white scales. Some red-orange scales surround the eyes. The legs and opisthosoma are also black, with patches of mostly off-white scales or setae. Legs I and II shorter and about the same size, legs III and IV longer. The scale pattern of the dorsal opisthosoma is distinctive and bold, with a prominent posterior transverse band surrounded by chevrons, and a less distinct series of longitudinal lines, particularly toward the front and sides (Figure 23).



Figure 23. Two different (1-3, 4-6) female *Saitis virgatus* from Ku-ring-gai Chase National Park. **1**, Rear view, showing posterior transverse band of opisthosoma, and chevrons to the front and rear of this band. **4**, Lateral view showing red-orange scales around the eyes. Compared to most *Saitis* group females, this female is relatively dark and boldly patterned.

The underside of the female is also dark, and may show a mottled pattern of light and dark cuticle along the ventral opisthosoma (Figure 24). The spinnerets are grey basally, and black distally.

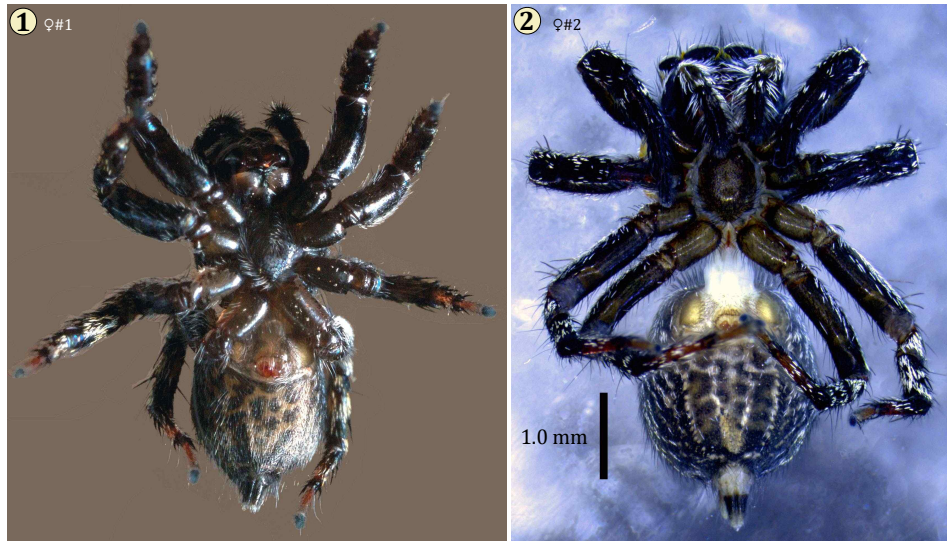


Figure 24. Underside of female *Saitis virgatus* from Ku-ring-gai Chase National Park. **1**, Ventral view of living female (♀#1) walking on glass surface. **2**, Underside of paratype female specimen (♀#2). Note the mottled pattern of the ventral opisthosoma. The orange spermathecae can be seen through the transparent cuticle of the epigynum.

When courting females, male *S. virgatus* often vibrate legs III in an extended, lateral position (Figure 25).



Figure 25. Two sequences (1-3, 4-5) showing interactions of a male and female *Saitis virgatus* from Ku-ring-gai Chase National Park. In the first sequence, the female responded to the approach of the male from the rear by raising legs III (3). Males often vibrated legs III in a laterally extended position, but did not raise the opisthosoma, during their display.

6. *Hypoblemum albovittatum* sensu Žabka & Pollard 2002

Hypoblemum albovittatum. — Žabka & Pollard 2002; Paquin *et al.* 2010
(NOT *Habrocestum albovittatum* Keyserling 1882. Misidentification)
Euophrys parvula. — Forster & Forster 1972; Jackson & Willey 1995
(NOT *Euophrys parvula* Bryant 1935. Misidentification)

As a member of the *Saitis* group with a male display that includes elevation and movement of the flattened and elevated prosoma from side to side (Jackson & Willey 1995), but lacking the dorsal opisthosomal plate (fan) of a male *Maratus*, this synanthropic species may represent an important transitional group.

The genus *Hypoblemum* was originally created by Peckham & Peckham (1885) to accommodate a different species, *Acmaea (Drepanephora) villosa* Keyserling 1883. Although *H. villosa* is considered to be the type of this genus, no specimens that match the description of this species are known (Žabka & Pollard 2002). We examined a single male labeled *Acmaea/Hypoblemum villosum* from the Peckham collection at the MCZ (MCZ 127694, Sydney), but even this was quite different from Keyserling's original description of that species. *H. villosum* as described has chelicerae shorter than patellae I, a very low clypeus (at most 1/8 of AME diameter), and many other characters which separate it from both *H. albovittatum* Keyserling 1883 and *H. albovittatum* sensu Žabka & Pollard 2002 (Appendix 3). Thus there is no reason to assume that the latter species is properly placed within the genus *Hypoblemum*.

We also examined male (MCZ 126797, Sydney, n=6) and female (MCZ 126798, New South Wales, n=2) spiders that were labeled *Habrocestum/Hypoblemum albovittatum* in the Peckham collection at Harvard, and none of these agreed with Keyserling's original description of that species (Appendix 4). However, they did agree with Žabka & Pollard's (2002) description of *Hypoblemum albovittatum*. Since Forster & Forster (1972) erroneously identified this spider as *Euophrys parvula* Bryant 1935, a spider that even by its brief original description was very different, a series of publications on its biology have used that name. Spiders from Australia that generally agree with the description of *H. albovittatum* sensu Žabka & Pollard 2002, as well as with published photographs of *Euophrys parvula* sensu Jackson & Willey 1995, are shown in Figures 26-27.

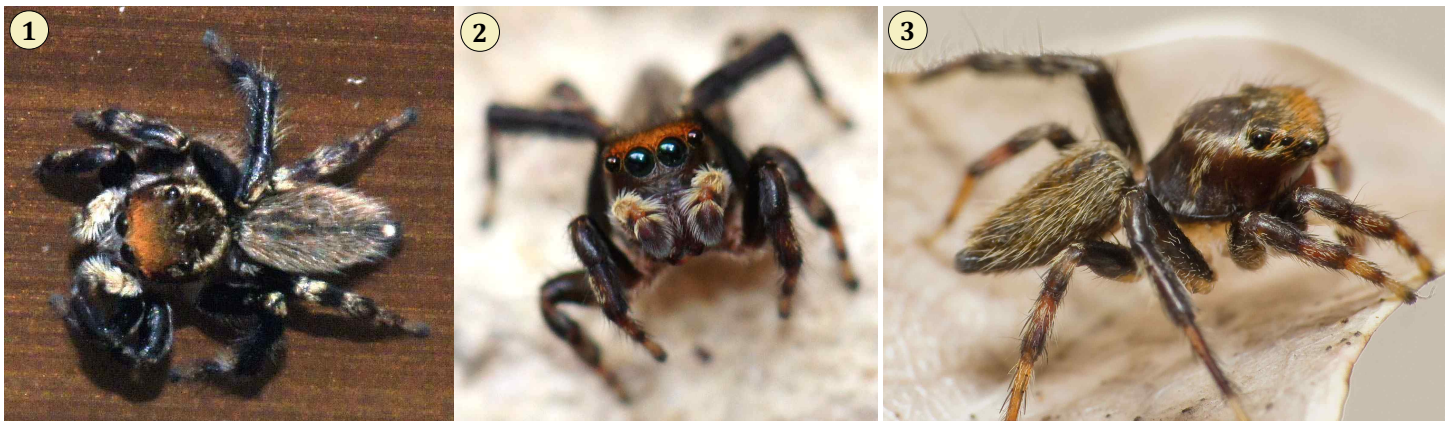


Figure 26. Adult male cf. *Hypoblemum albovittatum* sensu Žabka & Pollard 2002 from Australia. These common and widely distributed synanthropic spiders are distinguished by their long, dark legs III, red-orange setae of the antero-dorsal carapace, brown-tipped pedipalps with long white setae on top, and an elongate opisthosoma covered with dense gray-brown setae, with a median stripe. The small white spot above the anal tubercle is also seen in many *Maratus* species. **1-2**, Perth area, Western Australia. Copyright © Beth Kinsey, used with permission. **3**, The Gap, northwest of Brisbane, Queensland. Copyright © Robert Whyte, used with permission.



Figure 27. More adult male cf. *Hypoblemum albovittatum* sensu Žabka & Pollard 2002 from Australia. **1-2**, Stoney Creek, in southeastern Queensland. Copyright © Robert Whyte, used with permission. **3-5**, Melbourne area, Victoria. Copyright © Mark Helle, used with permission.

7. *Maratus anomalus* (Karsch 1878), new combination

Lycidas anomalus Karsch 1878. — Proszynski 1984; Žabka 1987; Žabka 1991

Because this is the designated type species for *Lycidas* Karsch 1878 (Žabka 1991), its placement in *Maratus* Karsch 1878 makes *Lycidas* a synonym of *Maratus*. We previously compiled and published an extensive series of photographs of both males and females of this species from Sydney (Hill 2009, pp. 23-24, figs. 28-29), without recognizing its identity. The original description by Karsch (1878), is republished here with a translation (Appendix 5). Both Proszynski (1984) and Žabka (1987) examined the male type specimen of this species and published drawings of its left pedipalp. These drawings are compared to new photographs of that same type specimen in Figure 28. The pedipalps of males collected recently in Sydney are also shown, for comparison, in Figure 29. The male pedipalp of *M. anomalus* differs little from published drawings of the male pedipalp of other *Maratus* species (*e. g.*, Proszynski 1984, Žabka 1987, Waldock 1995, Otto & Hill 2011). Depending on the perspective of the observer, these drawings depict either a single outer coil of the embolus, with a single distal-lateral terminus, or that outer coil with a shorter and thinner inner coil beneath it, ending with a smaller distal-lateral terminus beneath that of the outer coil. Other differences between published drawings may also be due to the style of the artist.

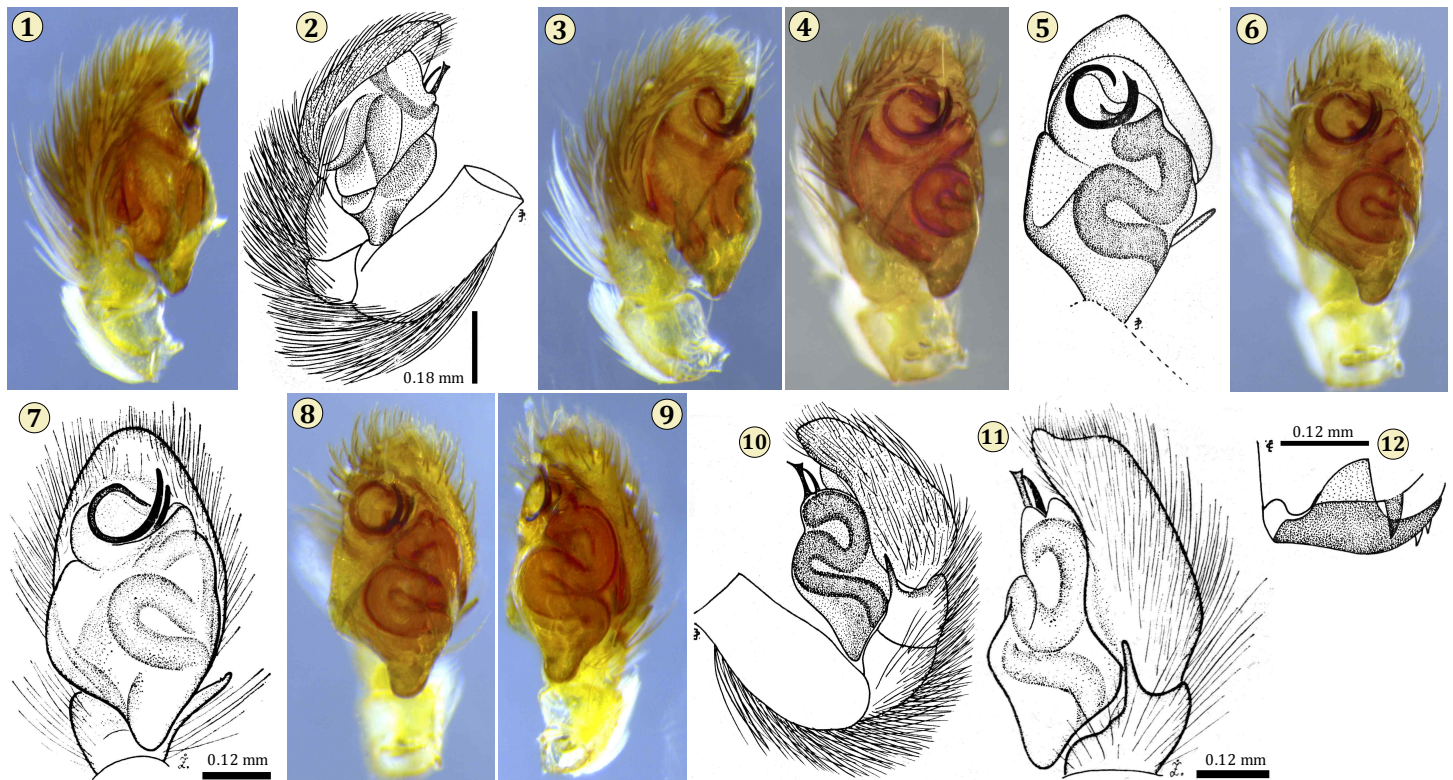


Figure 28. Left pedipalp of the male type specimen of *Maratus anomalus* (Karsch 1878) from New South Wales, housed in the Museum für Naturkunde in Berlin. The images are organized to represent rotation from a medial or anterior view (1) to a lateral or posterior view (11). In views 3-5, only the outer coil of the embolus can be seen. In other views, a smaller inner coil beneath the outer coil can also be seen. All photographs shown here are new. Other images are taken from Proszynski (1984: 2, 5, 10 and chelicera in 12) and Žabka (1987: 7 and 11), used here with permission.

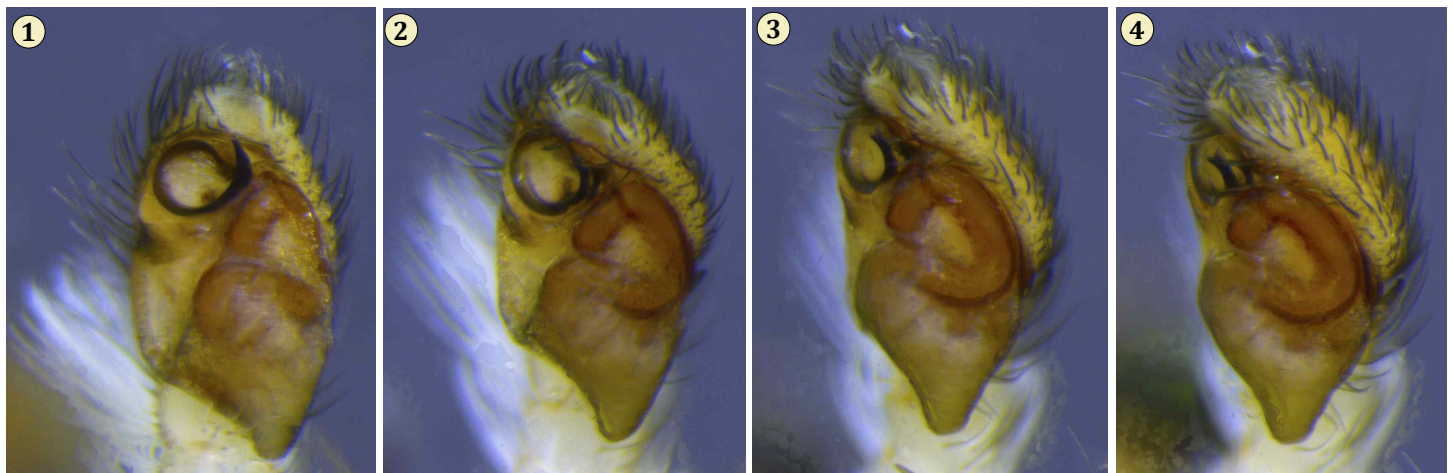


Figure 29. Photographs of the left pedipalp of a male *M. anomalus* from Ku-ring-gai Chase National Park, Sydney. **1**, Ventral view. **4**, Lateral view. In a ventral view, the smaller inner coil of the embolus is concealed behind the larger outer coil.

Although the pedipalp of male *Maratus* is of limited use in the identification of species, other features that have been neglected in earlier descriptions of *M. anomalus* allow these spiders to be readily identified. Some of these features are illustrated here for the type specimen (Figure 30), and also for more recent specimens from the vicinity of Sydney (Figure 31). The type specimen described by Karsch (1878) was broken apart, and the opisthosoma was in relatively poor condition, but many of the original scales were still in place. Karsch described the opisthosoma as laterally compressed, obviously an artifact of its condition, with a dark and shining dorsal surface. After brief air-drying, however, the green to blue to purple iridescent scales of the dorsal opisthosomal plate could still be seen in their original orientation, retaining their original structural colours after more than 134 years in alcohol (Figure 30:6).

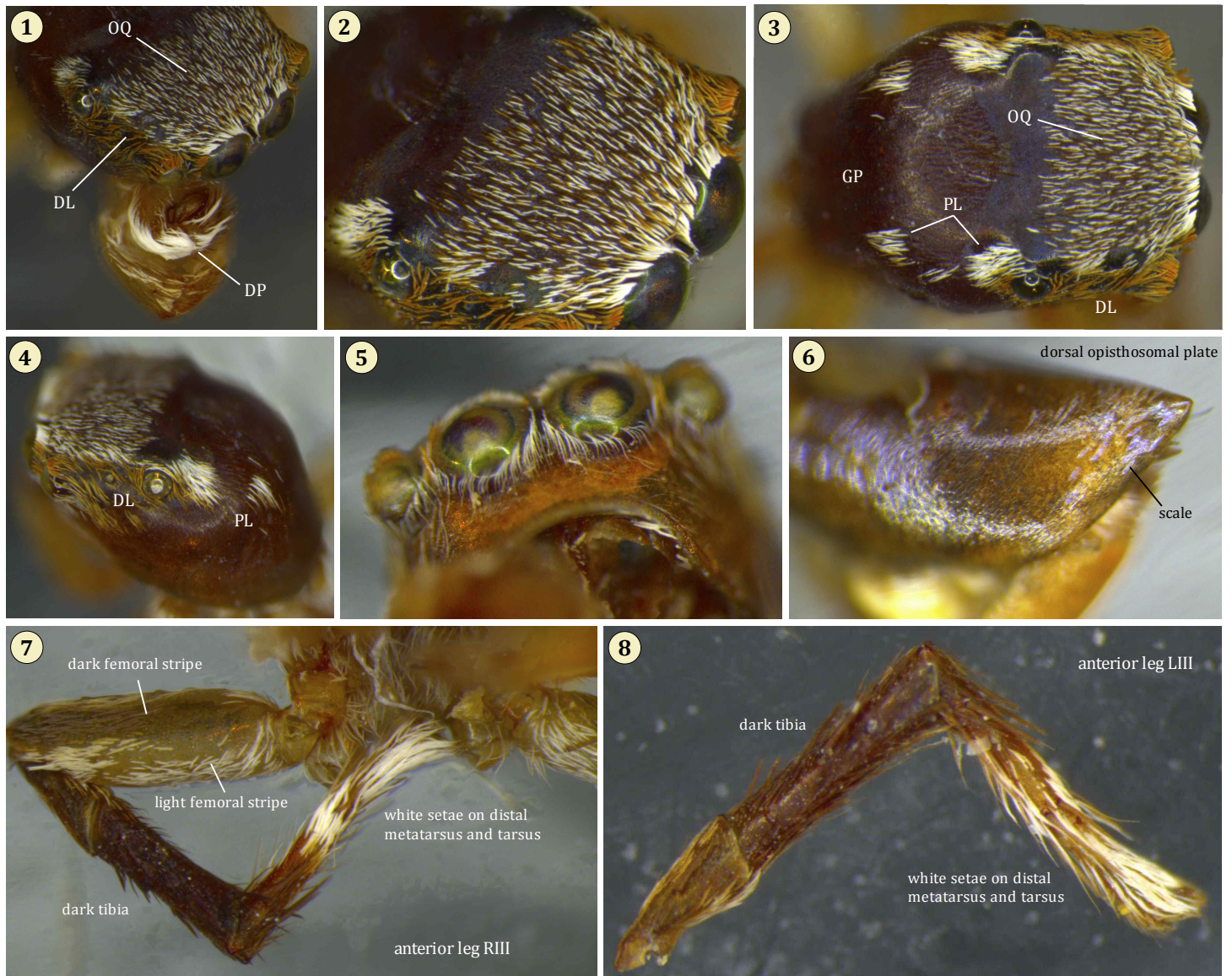


Figure 30. Other views of the male type specimen of *M. anomalus*, with characters useful in the identification of this species. **1**, Dorsal view of anterior carapace and right pedipalp (DP). The ocular quadrangle (OQ) is covered uniformly with light scales and a few interspersed orange scales. A dorso-lateral band (DL) of orange scales extends from the lateral margin of the AME to the posterior margin of the PLE. **2**, Detail of ocular quadrangle. **3**, Dorsal view of carapace, also showing remaining white scales of the postero-lateral tracts (PL), and the glabrous posterior slope (GP). **4**, Lateral view of carapace. **5**, Front eye row from below. **6**, Dorsal opisthosomal plate, with iridescent scales. **7**, Anterior leg RIII. Note the dark femoral stripe. **8**, Anterior leg LIII.

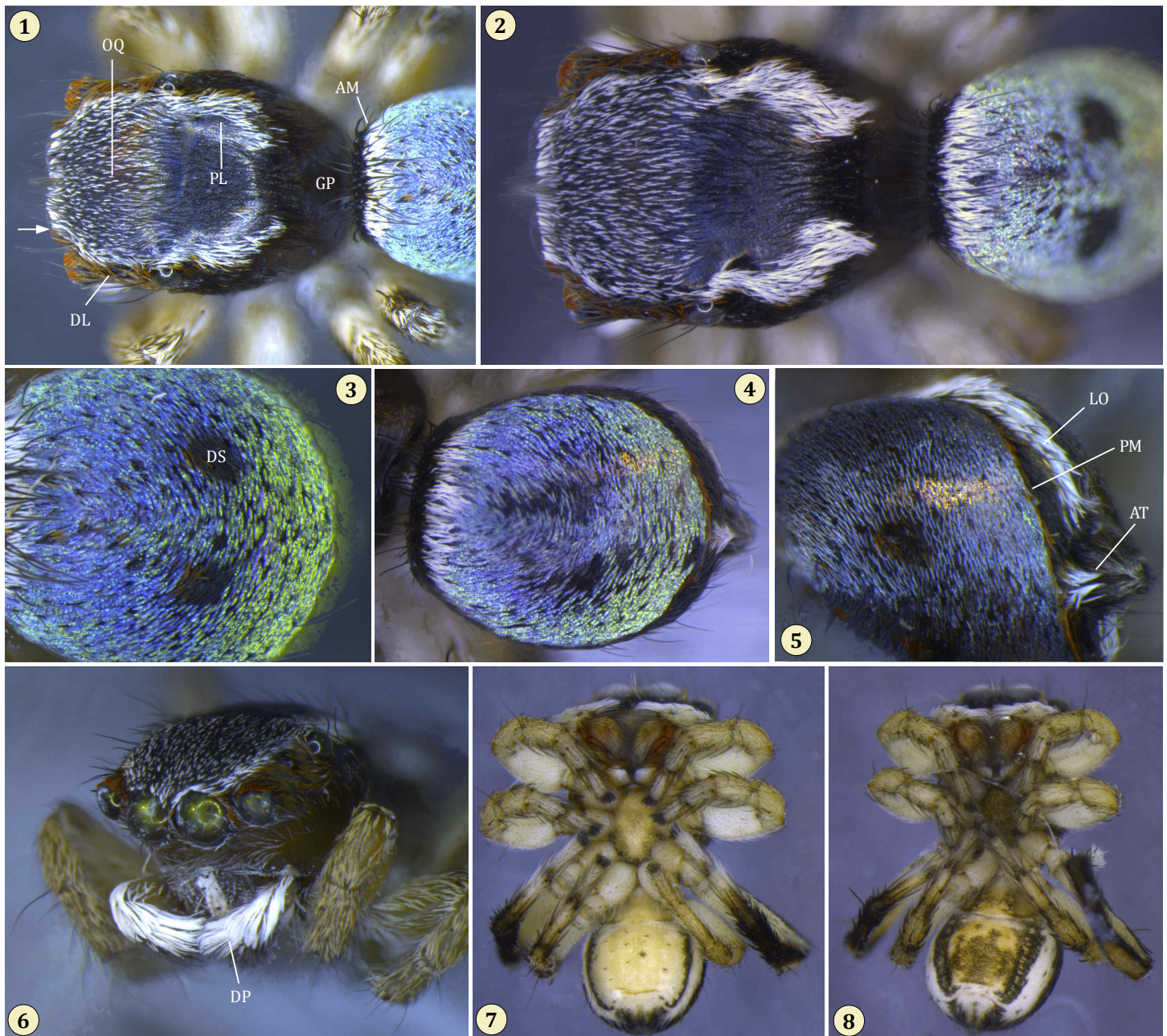


Figure 31. Recently collected male *M. anomalus* from Ku-ring-gai Chase National Park, about 30 km north of Sydney, Australia (NOV 2008 or OCT 2010). **1**, Dorsal view showing ocular quadrangle (OQ), postero-lateral tract of white scales (PL), glabrous posterior slope of carapace (GP) and long black setae, followed by white scales, of the anterior margin of the opisthosoma (AM). The dorso-lateral tract of orange scales extends from the lateral margin of the AME (arrow) to just behind the PLE, on each side. **2**, Dorsal view of another specimen. **3**, Detail of iridescent (generally purple to blue to green) scales on dorsal opisthosomal plate. The dark dorsal spots (DS) are better defined in some specimens than in others. In most salticids (including *Saitis*), scales of the dorsal opisthosoma are aligned in the direction of the moult, from front to back (Hill 1979). On the dorsal opisthosomal plate of *Maratus*, however, these tend to be aligned concentrically or laterally, from the center outwards as shown here. **4**, Dorsal opisthosoma of a different specimen. **5**, Oblique view of dorsal opisthosoma of yet another specimen, showing dark orange scales along the sharp posterior margin of the plate (PM), white setae above the anal tubercle (AT) as found in many *Maratus*, and a prominent fringe of white setae along the lateral margins of the opisthosoma (LO). **6**, Front view, showing lack of markings on legs I and II, and prominent dorsal fringes of long white setae on the pedipalps (DP). **7-8**, Ventral views of two specimens, showing dark areas on the tibiae of legs III. Note also the position of the distal segments of the pedipalps beneath the dorsal fringes of long white setae, at top.

Several male *M. anomalus* that we have identified from the collections of the Australian Museum in Sydney are shown in Figure 32.

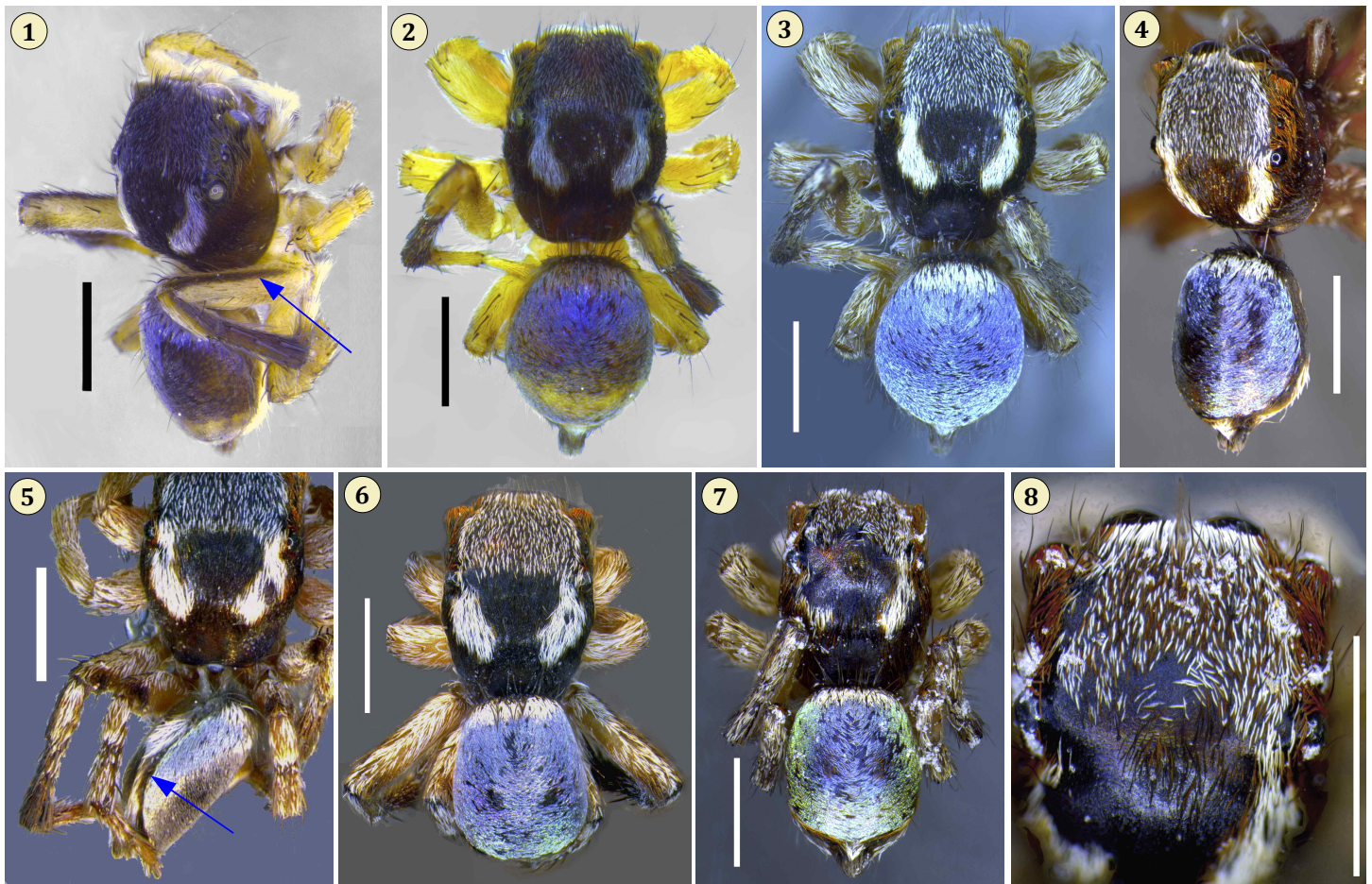


Figure 32. Male *Maratus anomalus* from the Australian Museum in Sydney. **1-3**, Three views of a specimen from Bribie Island, to the north of Brisbane in Queensland (KS.70099, 29 AUG-3 SEP 1998, N. Power coll.). Note the dark anterior femoral stripe (1, arrow). View (3) shows this specimen after air drying, which provides a better view of its original appearance. **4**, Specimen from Maroota State Forest, New South Wales (KS.73325, 26 OCT 1979, G. A. Webb coll.). **5-6**, Specimens from Gibba Swamp, New South Wales (KS.87188, 25-27 NOV 2001, D. Bickel coll.). In (5) the abrupt lateral margin of the dorsal opisthosomal plate is clearly visible (arrow). **7**, Specimen from Pomingalarna Park, 8 km west of Wagga Wagga, New South Wales (KS.101339, 15 OCT 2001, C. Car coll.). **8**, Detail of dorsal carapace from (7), showing a higher density of scattered dark orange scales in the ocular quadrangle than in the other specimens that have been examined. Each scale bar is equal to 1.0 mm.

Living adult males are shown in Figures 33-35. When viewed from the front (Figure 33:1-2), the black anterior stripe extending from the femur to the proximal metatarsis of legs III is prominent, even when these legs are not extended. As do other *Maratus* species, as they display males extend and flex legs III, and elevate their opisthosoma so that it can be seen from the front (Figure 35:1-3).

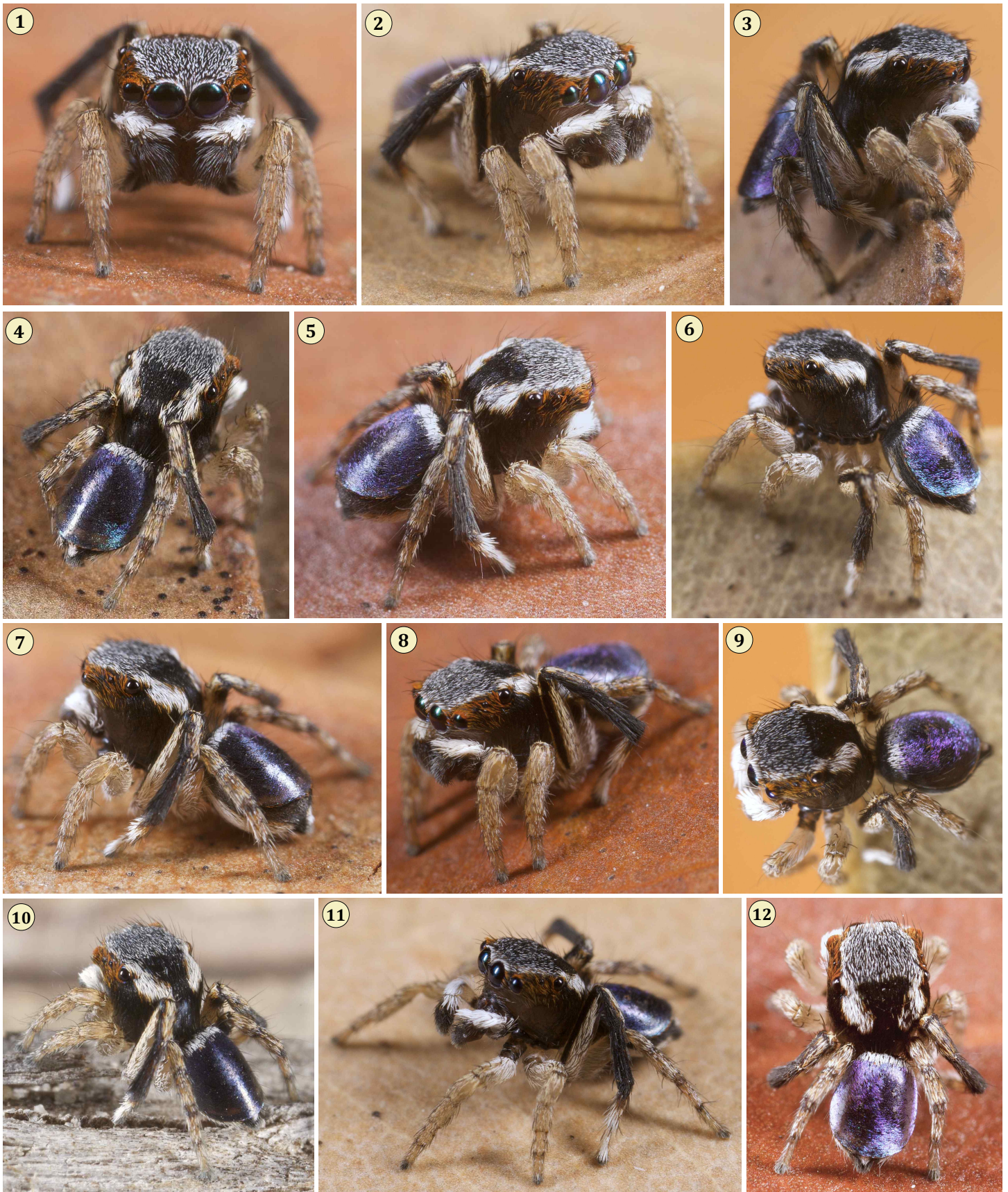


Figure 33. Male *Maratus anomalus* from Ku-ring-gai Chase National Park (NOV 2008 or OCT 2010). The prominent black stripe of the anterior femur extends across the front of the patella and tibia to the proximal metatarsis, where it is replaced with prominent white setae of the distal metatarsus and tarsus. In these views the iridescent dorsal opisthosomal plate, which overhangs the dorsal opisthosoma somewhat, is black to blue or purple in colour.

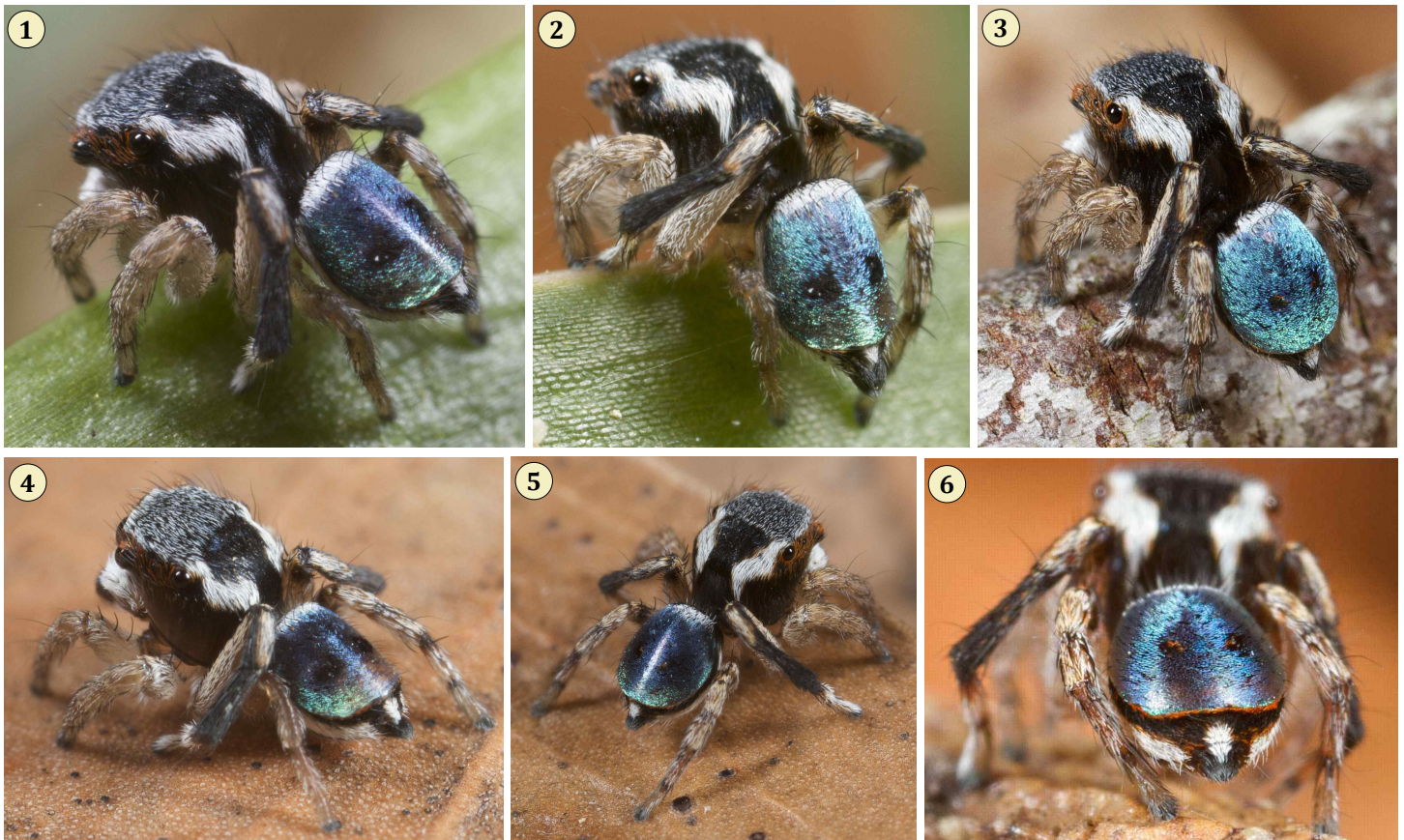


Figure 34. Five different (1-2, 3, 4, 5, 6) male *Maratus anomalus* from Ku-ring-gai Chase National Park (NOV 2008 or OCT 2010). The dorsal opisthosomal plate of these spiders reflected more green than those shown in Figure 11. Note the fringes of dark orange scales at the rear margin of the plate, and the rear margin of the opisthosoma below it, in (6).

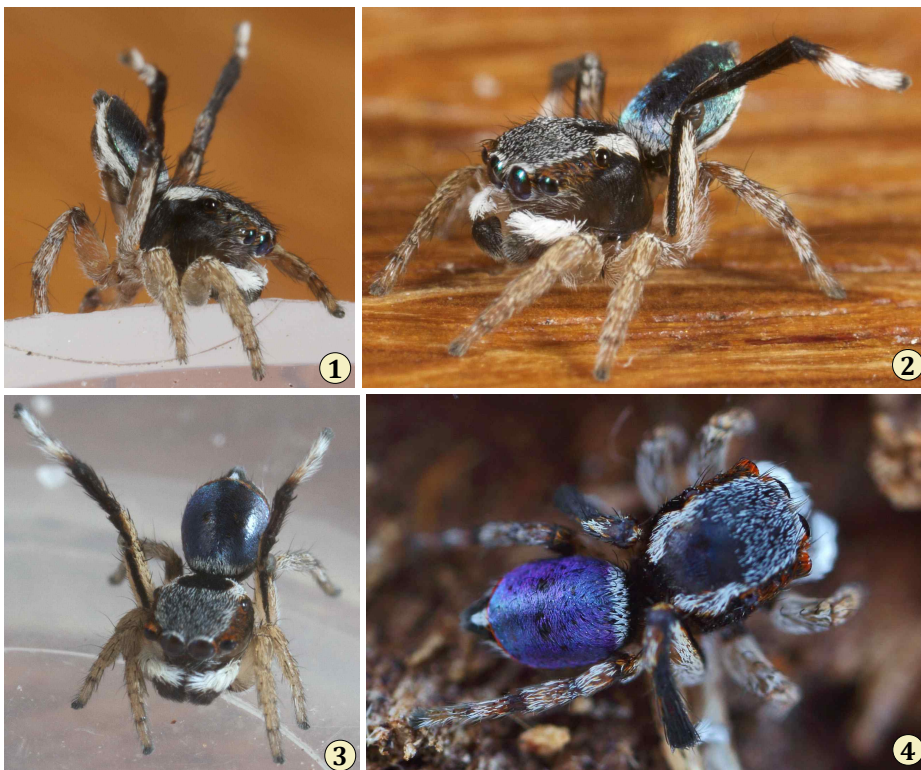


Figure 35. 1-3, Courtship display by male *M. anomalus* from Ku-ring-gai Chase National Park (OCT 2010), with extended and flexed legs III, and elevated opisthosoma. 4, Male *M. anomalus* from Newcastle, New South Wales (32° 59' 49.54" S, 151° 42' 16.12" E, JAN 2012, P. Robinson coll.). Photo (4) Copyright © Peter Robinson, used with permission.

Female *Maratus anomalus* have not been described previously, and more study of the interactions of males and females will be necessary before we will be completely confident in their identification. A female that was found near the male from Bribie Island (Figure 32:1-3) is shown in Figure 36, and its epigynum is compared here with epigyna of two similar females from Sydney. Photographs of living females collected with male *M. anomalus* in Sydney are also shown in Figure 37. As with other *Maratus* species, the cryptic colours of these females provide few characters to support their identification. In addition, epigyna of different *Maratus* species are quite similar to these, and, if possible, reliable identification based on epigyna may ultimately require an extensive study of both interspecific and intraspecific variation in their structure. Localities for all of these specimens are shown in Figure 38.

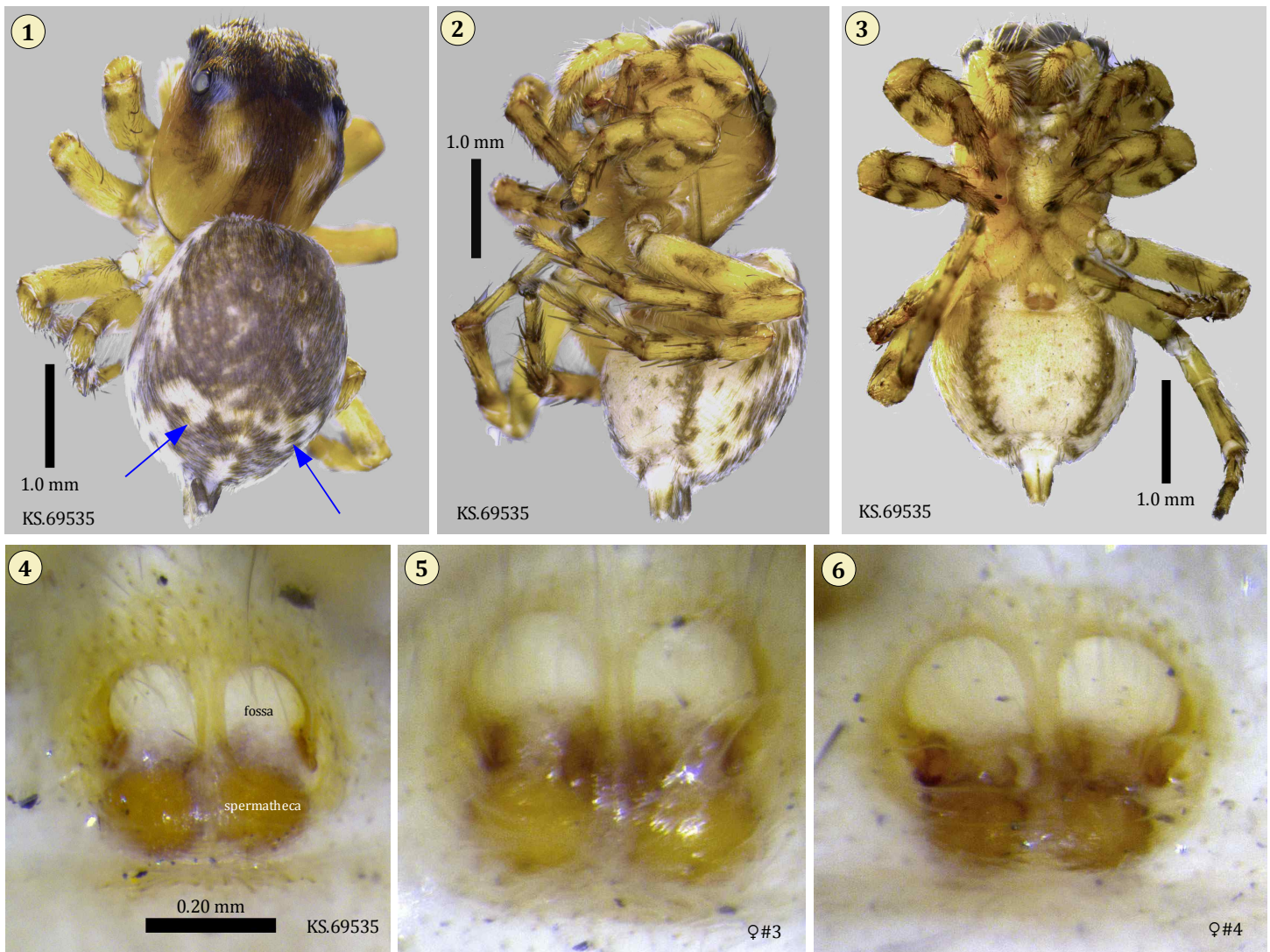


Figure 36. 1-4, Bribie Island female associated with *Maratus anomalus* from the collection of the Australian Museum in Sydney (KS.69535, 29 AUG-3 SEP 1997). 1, Dorso-lateral view. The white markings of the postero-dorsal opisthosoma (arrows) help to identify females of this species. 2, Ventro-lateral view. 3, Ventral view. 4, Epigynum. Spermathecae are about the same size as the fossae (windows) in this species. 5-6, Epigyna of two similar females collected with male *M. anomalus* at Ku-ring-gai Chase National Park (OCT 2010).

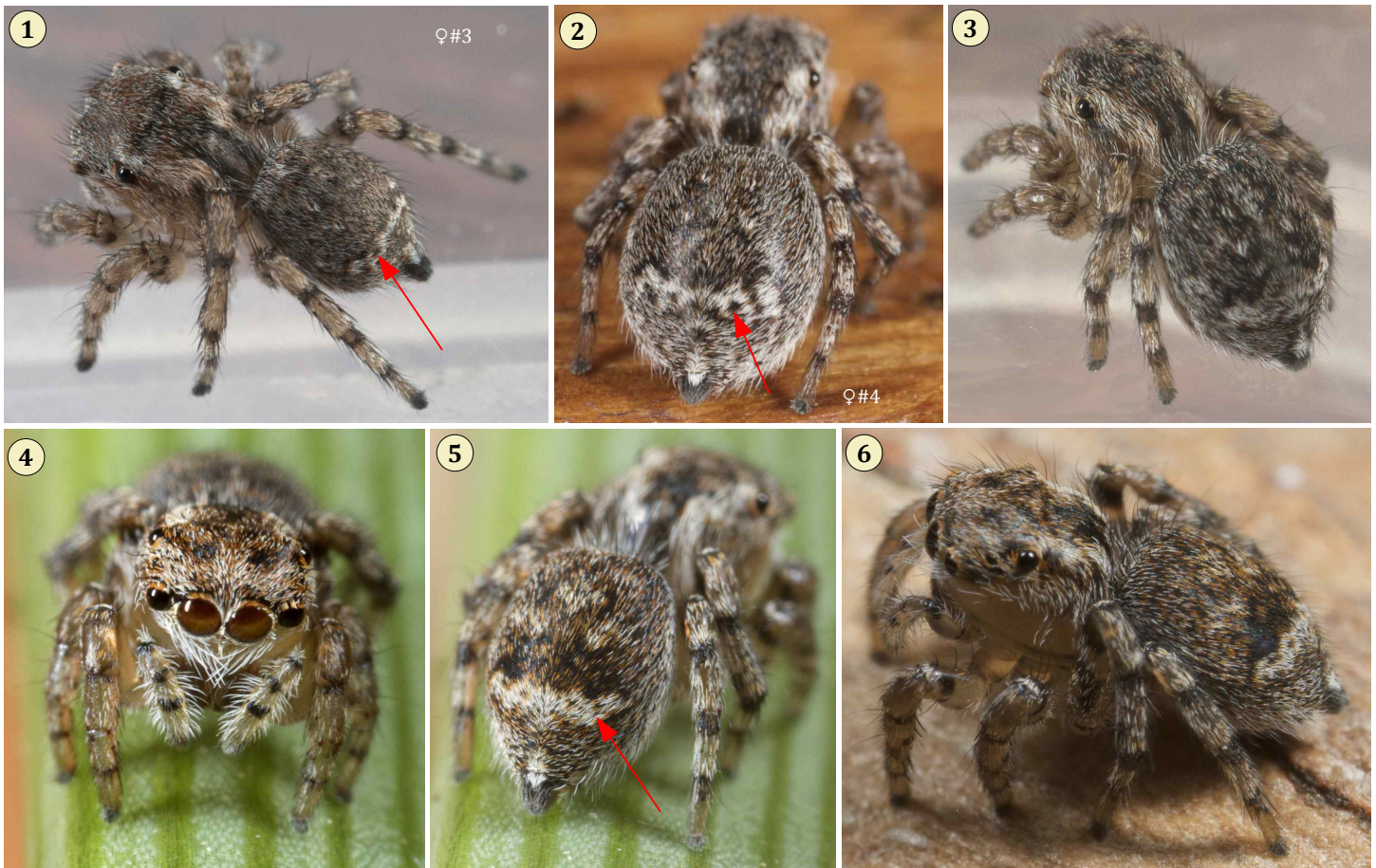


Figure 37. Four different (1, 2, 3, 4-6) females found with male *Maratus anomalus* at Ku-ring-gai Chase National Park (OCT 2010). 1-2, Living spiders corresponding to epigyna shown in Figure 23, 5-6. 3, and 4-6, The epigyna of these two females have not been examined, but they resemble the other two females. A contrasting, irregular transverse band of white scales on the postero-dorsal opisthosoma (arrows) is present in females of this species. Note also the dark annulation of the pedipalps (4), the dark annulation of the longer legs III and IV, and the tuft of white scales above the anal tubercle.

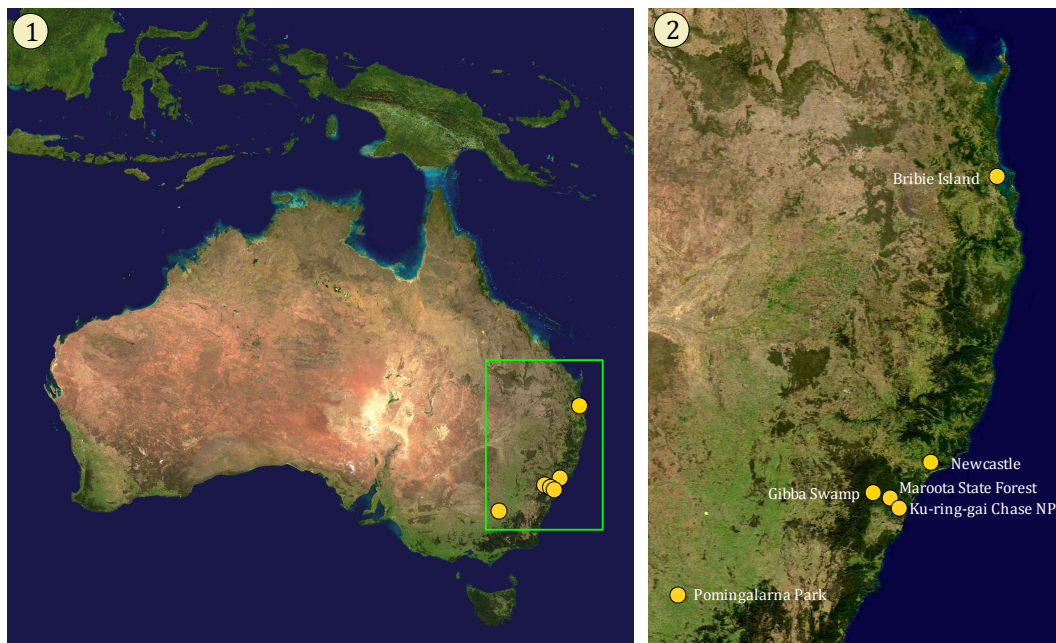


Figure 38. *Maratus anomalus* localities, all in southeastern Australia: Bribie Island (S 27°03' 30", E 153°11'32"), Gibba Swamp (S 33°11', E 150°41'), Maroota State Forest (S 33°31', E 150°59'), Pomingalarna Park (8 km W of Wagga Wagga, S 35°15', E 147°04'), Newcastle, and Ku-ring-gai Chase National Park. Satellite background courtesy of NASA Visible Earth.

8. *Maratus chrysomelas* (Simon 1909), new combination

Habrocestum chrysomelas Simon 1909

Lycidas chrysomelas. — Žabka 1987; Žabka 1999; Waldock 2002

This spider is widely distributed in Australia, and easy to identify. In her redescription, Waldock (2002) listed many localities where it has been found in the north, south and west. As with other species of *Maratus*, males display with extended legs III and the elevated opisthosoma (Figure 39). See Appendix 6 for the original description of this species.

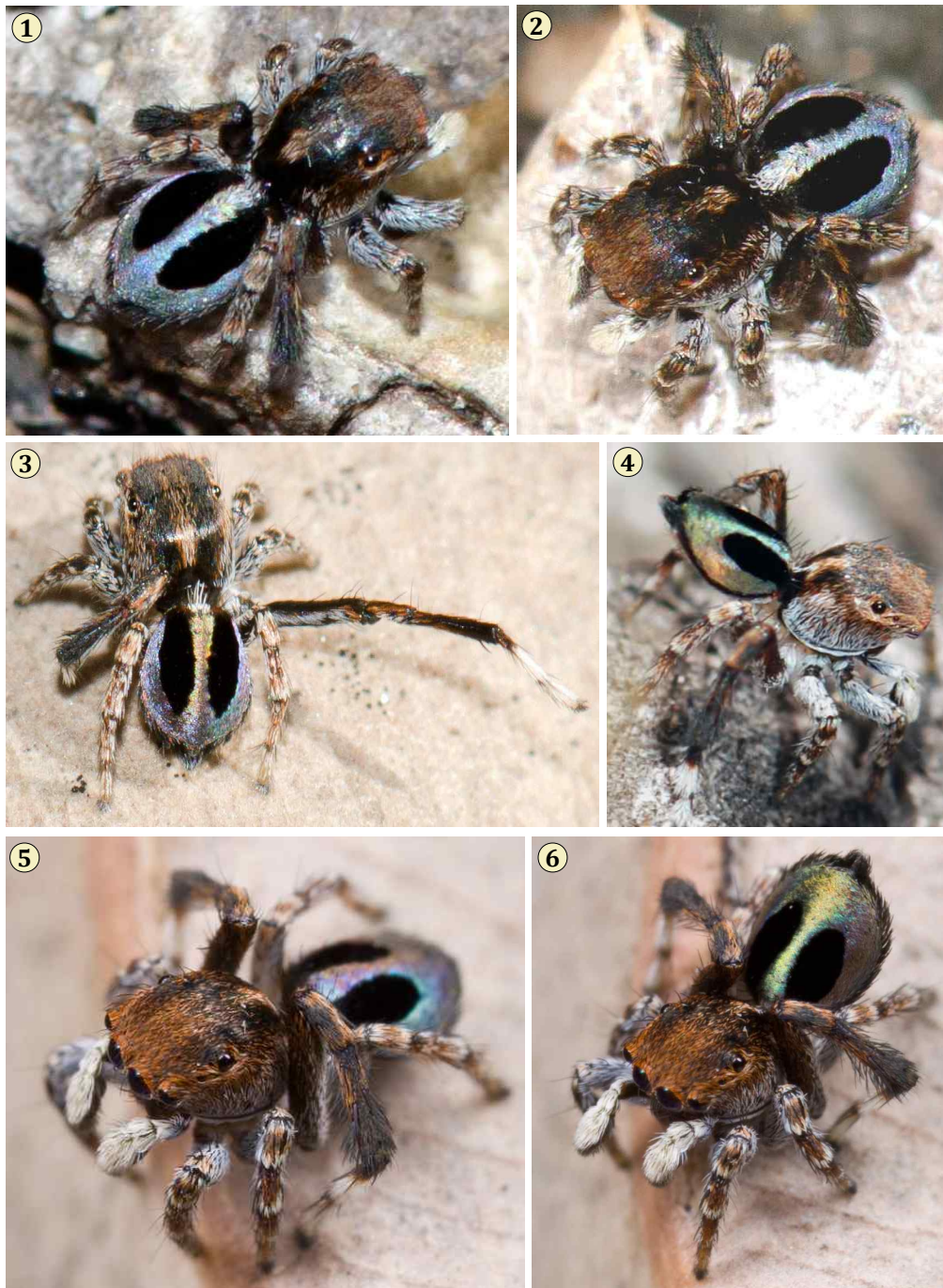


Figure 39. Adult male *Maratus chrysomelas* from the Canning River East Branch in Western Australia. **1-4**, Copyright © Jean and Fred Hort, used under a [Creative Commons Attribution 2.0 Generic](https://creativecommons.org/licenses/by/2.0/) license. **5-6**, Two views of the same male. Notice how the colour of the iridescent scales changes with movement of the opisthosoma. In display this can be fully elevated and flattened or expanded laterally. Copyright © Farhan Bokhari, used by permission.

9. *Maratus nigromaculatus* (Keyserling 1883), new combination

Ergane nigromaculata Keyserling 1883

Thorellia nigromaculata. — Rainbow 1911

Spilargis nigromaculata. — Simon 1903

Lycidas nigromaculatus. — Žabka 1987; Žabka 1991

This is another *Maratus* that is easy to recognize, but little known. The photographs shown here (Figure 40) represent the first record of this spider since Keyserling described a single male specimen from Rockhampton on the Queensland Coast in 1883 (Appendix 7). Žabka (1987) illustrated the pedipalp of this specimen, by then missing its distinctive opisthosoma, and suggested that it was closely related to *M. chrysomelas*. The colouration of the pedipalps of the two species is also very similar.

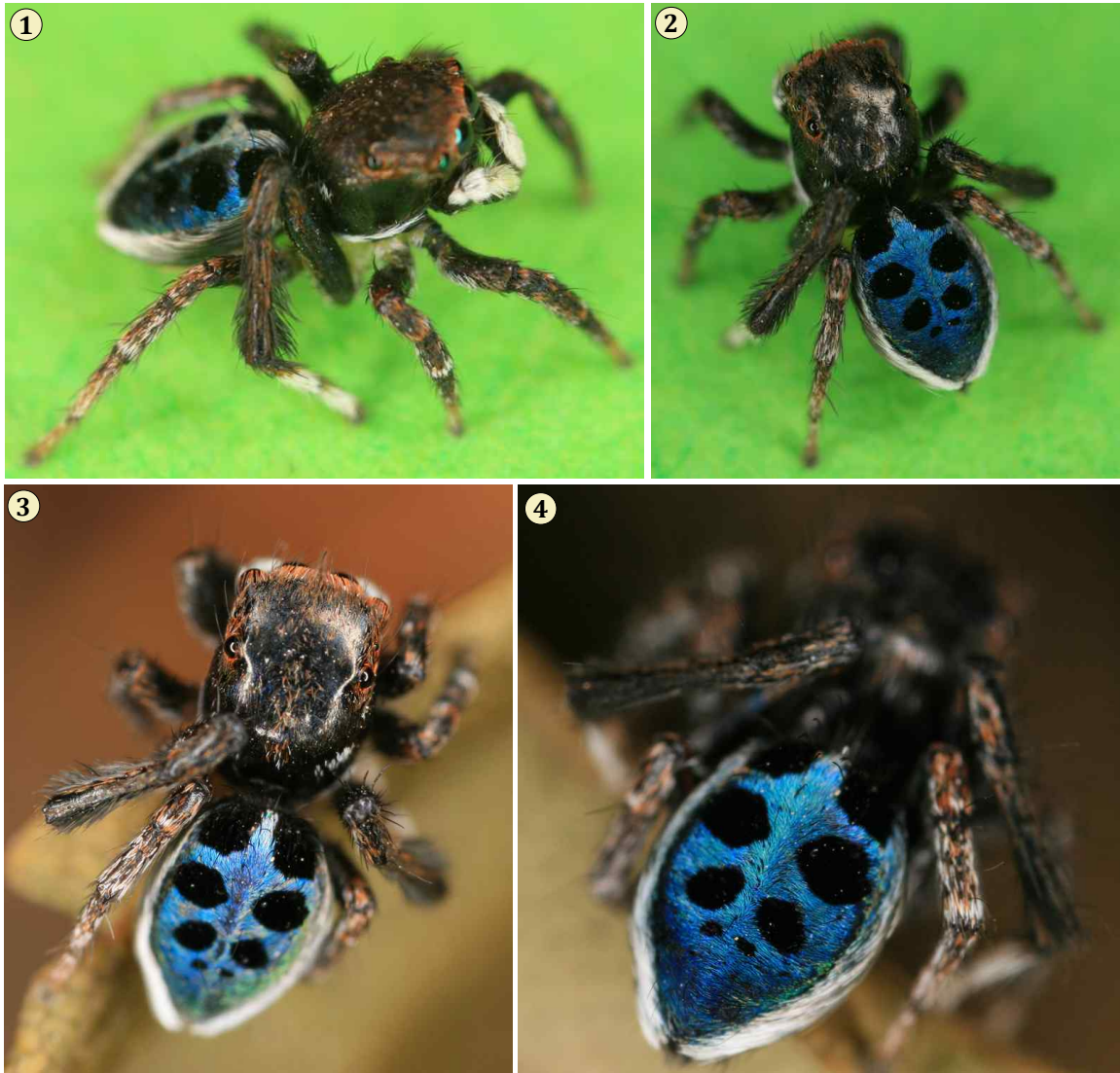


Figure 40. Adult male *Maratus nigromaculatus* photographed by Chris Martinez at Wynnum, Brisbane, Queensland (NOV 2008). This spider may have been imported to that area with some turf from the vicinity of Fernvale, just to the west of Brisbane. All femora and much of the carapace are jet black. **1**, Note the glabrous black surface of the lateral carapace. Both the metatarsus and tarsus III of this species are covered with white setae. **4**, A closer view of the opisthosoma reveals the transverse alignment of iridescent setae on the dorsal opisthosomal plate, flanked by long white setae. All photos Copyright © Chris Martinez, used by permission.

10. *Maratus pavonis* (Dunn 1947), new varieties

Saitis pavonis Dunn 1947

Maratus pavonis. — Žabka 1991; Hill 2009; Hill & Otto 2011; Otto & Hill 2011

Dunn (1947) described this as a species without significant lateral extensions (*flaps*) of the dorsal opisthosomal plate. Males of the first new variety shown here (*m-signitis*), from Coleambally in south-central New South Wales (22 SEP 2012), have a distinct 'm' pattern comprised of orange setae surrounded by off-white setae on the rear 2/3 of the ocular quadrangle (Figure 41). Most male *M. pavonis* that have been described have a uniform field of brown to orange setae covering the ocular quadrangle (Dunn 1947, Hill & Otto 2011, Otto & Hill 2011). This form has also been found at Wogollow Farm, Benerembah, about 50 km north of Coleambally on the opposite side of the Murrumbidgee River (34° 23' 10" S, 145° 50' 11" E, 18 NOV 2010; Dews 2010).

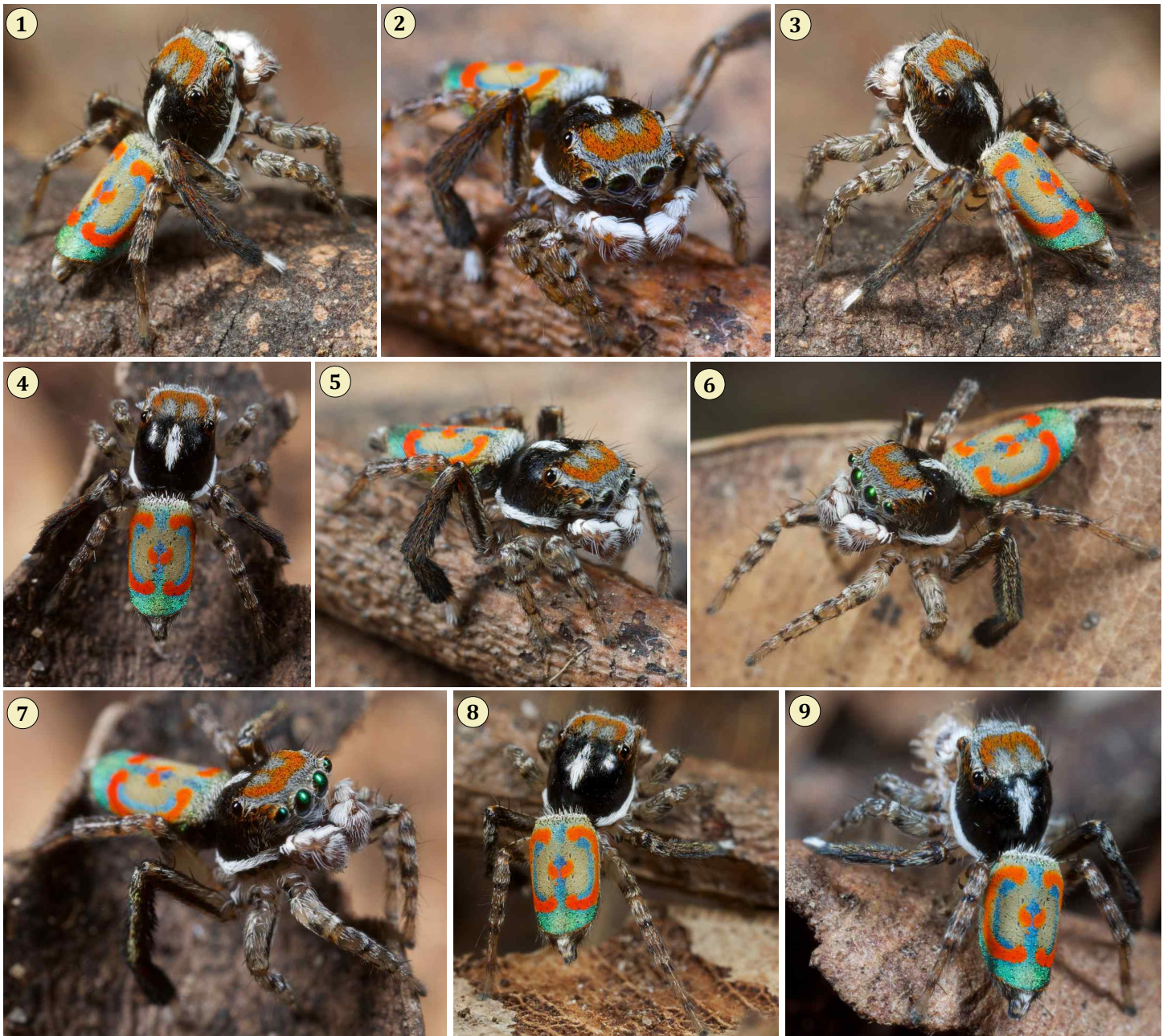


Figure 41. Adult male *Maratus pavonis* from Coleambally, about 500 km west of Sydney (22 SEP 2012). With a distinct 'm' pattern occupying part of the ocular quadrangle, this variety (*m-signitis*) has only been found in south-central New South Wales. Except for the marginal and median white bands, the posterior carapace of this variety is shiny black and glabrous.

A very different variety of *M. pavonis* has been found by David Knowles near the southern boundary of Watheroo National Park, about 187 km north of Perth, Western Australia (Figure 42; 30° 18' 11.47" S, 115° 52' 34.60" E, OCT 2012). Males of this variety (*brunneis*) are characterized by an extensive area of tan to light-orange scales on the dorsal opisthosomal plate, replacing many or most of the bright red-orange and iridescent blue-green scales that are found in other populations of this species. In addition, the eye region (*ocular quadrangle*) and a large part of the lateral carapace are covered with tan or light-brown scales. The median carapacial band is truncated at the rear and is covered with off-white or tan, rather than white, scales. In general these males have a subdued colouration, consistent with selection for concealment in an arid habitat.

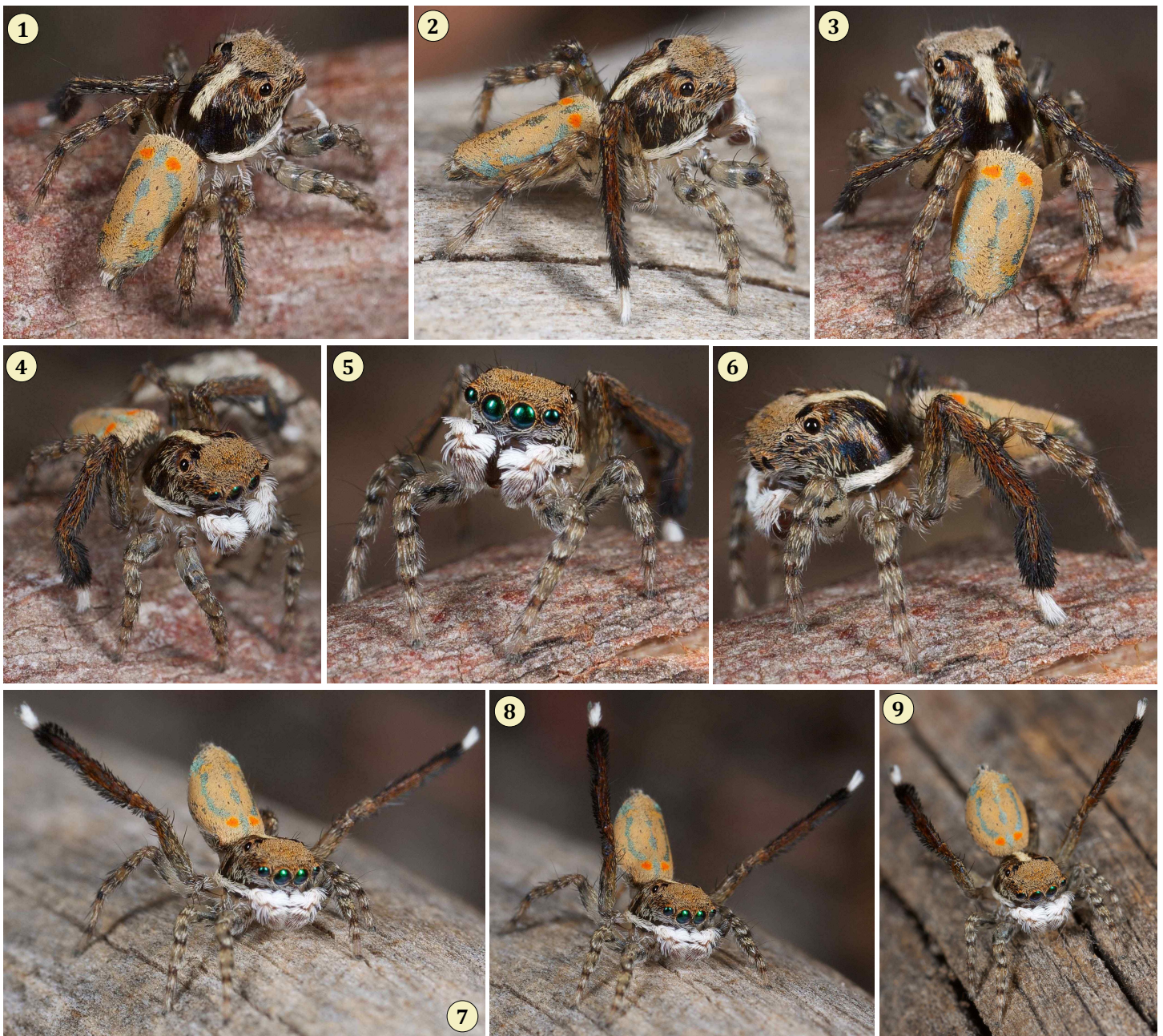


Figure 42. Adult male *Maratus pavonis* from the vicinity of Watheroo NP in Western Australia. This variety (*brunneis*) is quite subdued in colouration. 7-9, Three positions assumed during display to a female *Maratus*.

11. *Maratus robinsoni*, new species

Type specimens. The holotype (♂#3) and two paratype (♂#1 and ♂#2) male specimens are from Newcastle, New South Wales (32° 59' 50.42" S, 151° 42' 17.22" E, 15 OCT 2012, J. Otto and P. Robinson coll.) Two more paratype males were later collected at the same location (22 OCT 2012, P. Robinson coll.). A fifth male paratype was found at the cemetery at Pilliga, New South Wales (30° 21' 31.23" S, 148° 53' 17.82" E, 2 OCT 2012, J. Otto coll.). A sixth male paratype (KS.58735, Munmorah State Recreation Reserve, 33° 12' 46" S, 151° 34' 57" E, 27 NOV 1997, L. Wilkie coll.) was already in the collection of the Australian Museum. The holotype and all paratypes will be deposited in the Australian Museum, Sydney.

Etymology. This species is named for Peter Robinson, who first photographed a male at Newcastle in November of 2011, and collected the holotype.

Diagnosis. The male embolus (Figure 43:6-7) is similar to that of *M. chrysomelas* as drawn by Waldock (2002), but *M. robinsoni* is only about half the length of that species, the pedipalps are shorter, the unique colour pattern and the rotund shape of the dorsal opisthosoma is quite different (Figure 43:5), and legs III are not ornamented.

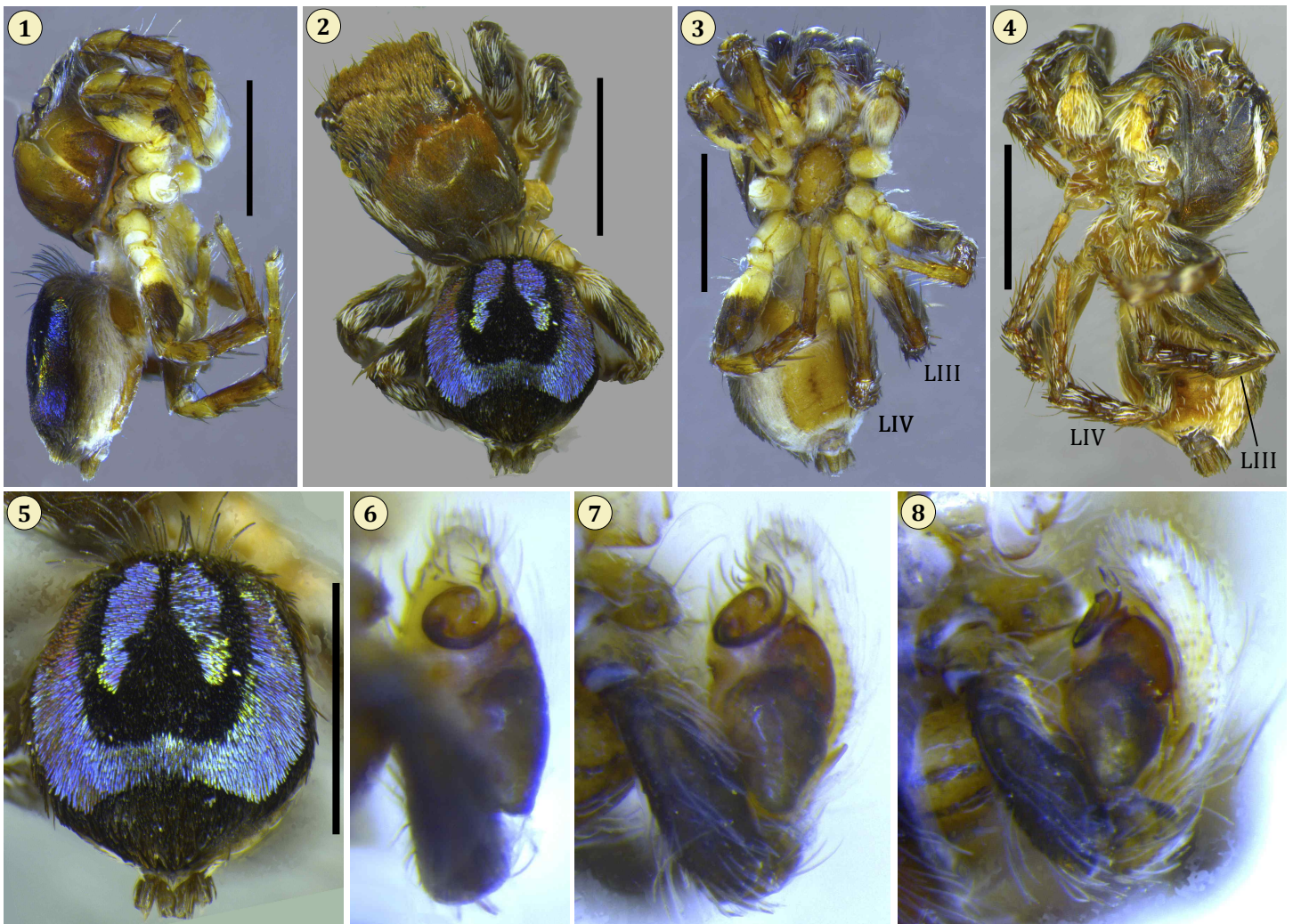


Figure 43. Paratype male *Maratus robinsoni* from the collection of the Australian Museum in Sydney (KS.58735, Munmorah). **1**, Right lateral view. **2**, Dorsal view. **3**, Ventral view. **4**, Oblique left lateral-ventral view. **5**, Detail of dorsal opisthosomal plate. **6**, Ventral view of left pedipalp. **7**, Oblique ventral-lateral view of left pedipalp. **8**, Lateral view of left pedipalp. All scale bars are 1.0 mm. The carapace of is cracked and legs RIII and LI are missing. Most of the distinctive scalation of the carapace and dorsal opisthosoma is still intact in this specimen.

Description of male. This small (body length 2.35-2.88 mm, n=5) but very colourful species has a nearly circular dorsal opisthosomal plate (*fan*) with fields of vividly iridescent scales that reflect light directionally at frequencies that span the visible spectrum (Figures 44-47), on a dark background.



Figure 44. Adult male *Maratus robinsoni* found on top of Pine Heath (*Astroloma pinifolium*) near a sandy track at Newcastle, New South Wales (32° 59' 50.42" S, 151° 42' 17.22" E, NOV 2011, P. Robinson coll.). The brilliant iridescent colours of scales on the opisthosomal plate of this spider range through all colours of the visible spectrum, and are highlighted by surrounding areas of jet-black scales. All photos Copyright © Peter Robinson, used by permission.

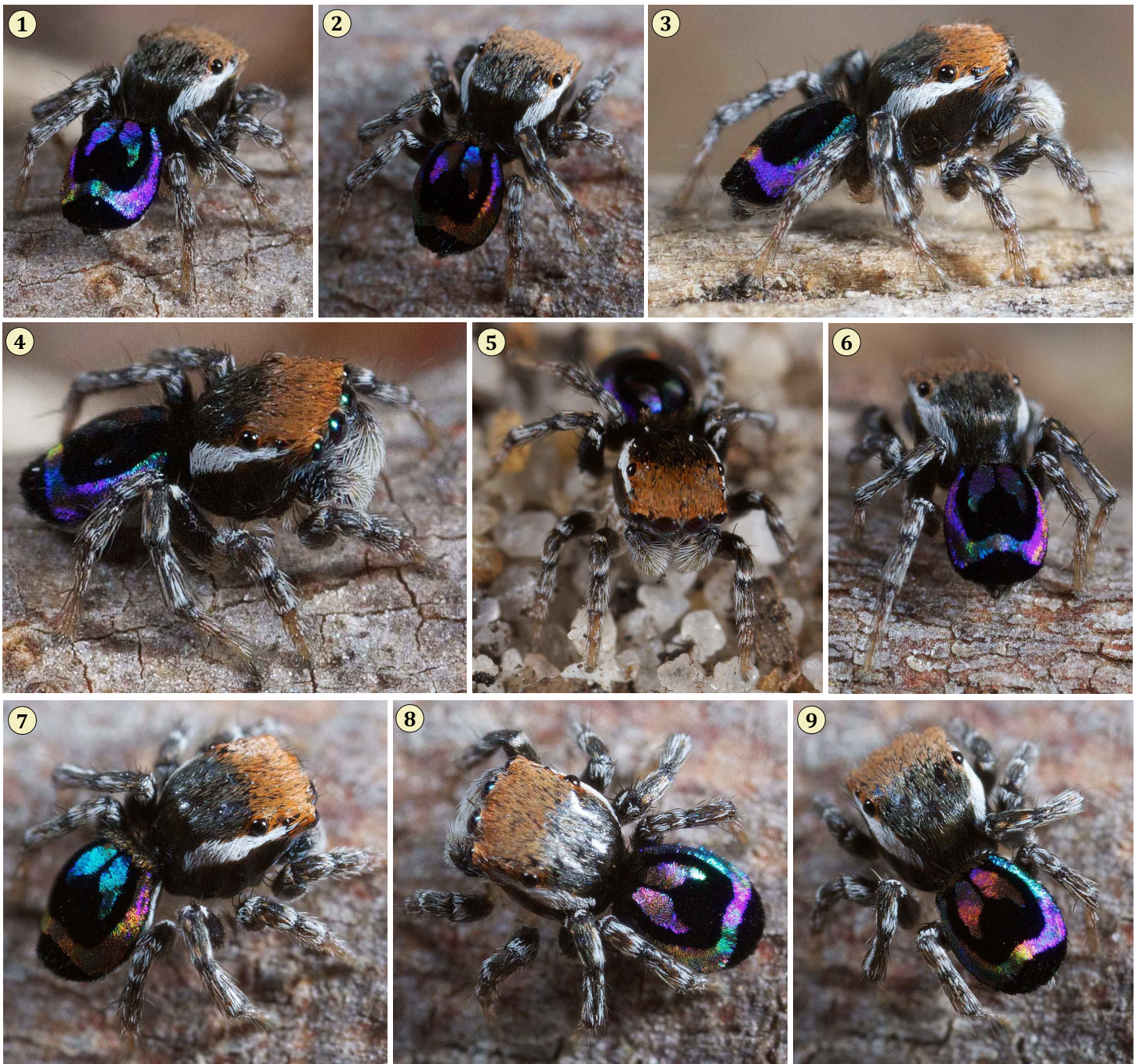


Figure 45. Holotype *Maratus robinsoni* (♂#3) from Newcastle, New South Wales.

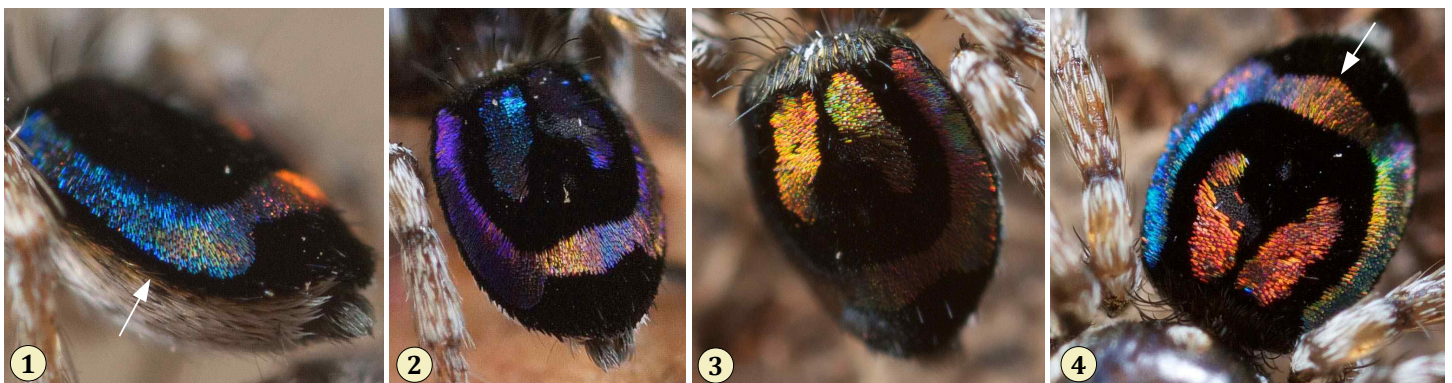


Figure 46. Four views of the opisthosoma of the paratype male *M. robinsoni* from Pilliga, New South Wales. Below the plate margin (1, arrow), the lateral opisthosoma is covered with long white scales. In this male, the posterior border of the rear-most (median) tract of iridescent scales was angular and pointed toward the rear (4, arrow).

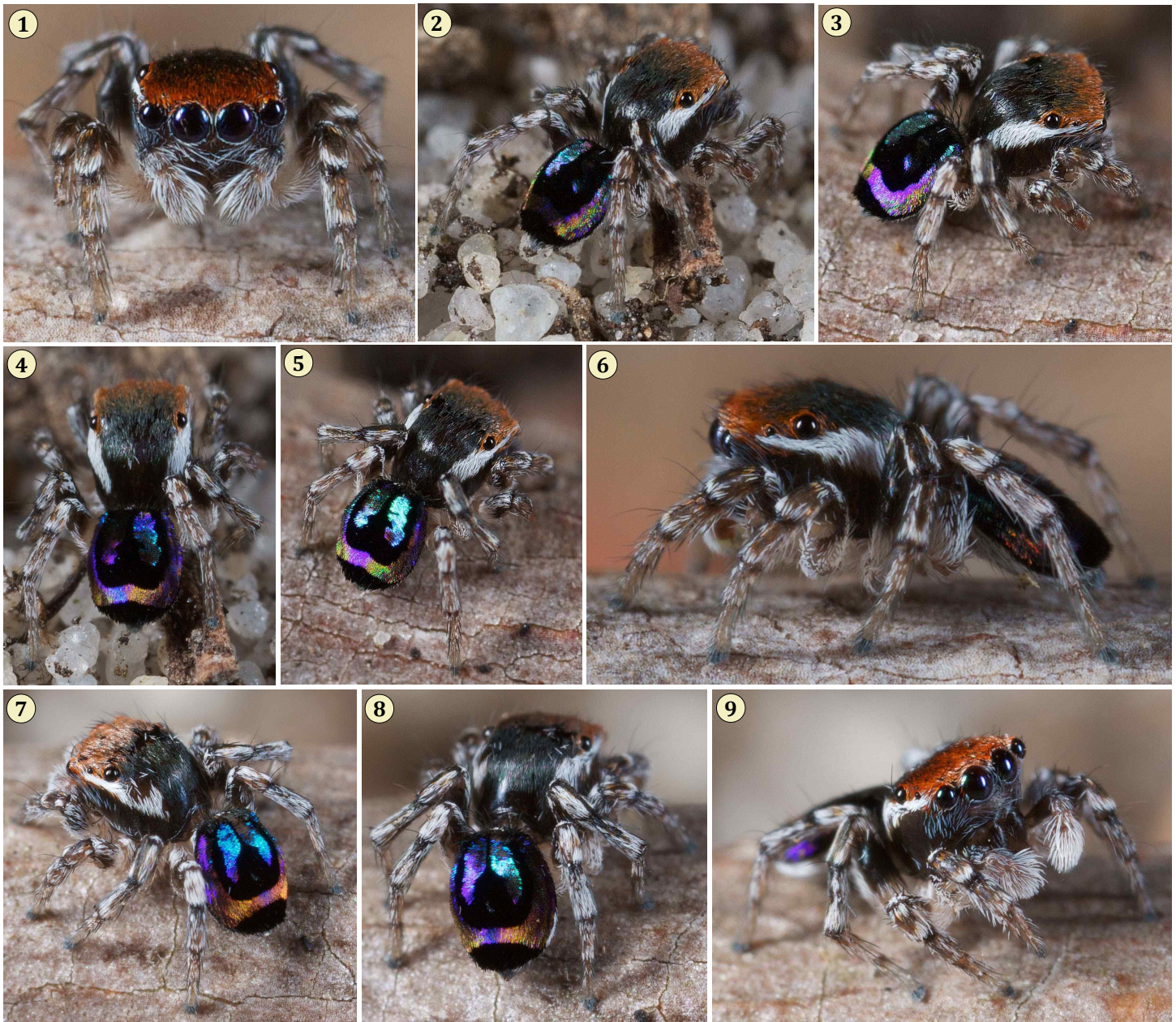


Figure 47. Two male paratypes of *Maratus robinsoni* (1-6: ♂#1, 7-9: ♂#2) from Newcastle.

Prosoma and opisthosoma subequal in length. PME significantly closer to PLE than to ALE. Eye region (ocular quadrangle) covered uniformly with dull red to brown scales. The colour of these scales fades in alcohol. Band of white setae on each side of carapace, extending from below PME almost to the rear of the carapace. Below this on either side the carapace is black, shiny, and glabrous, with no marginal band. PLE surrounded at top with dull red scales. Except for lateral bands posterior carapace is dark. Anterior eyes reflect blue, green, or purple, depending on the lighting. Scattered off-white setae beneath anterior eye row. Chelicerae glabrous and dark brown.

Dorsal opisthosomal plate with simple anterior divided 'butterfly' pattern of iridescent scales, enclosed in a large 'U' shaped (viewed from the rear) field of iridescent scales. Both areas of iridescent scales are surrounded by a uniform background of dark black scales. The colour of these iridescent scales varies according to the relative direction of the light source and the observer, but encompasses the complete visible spectrum, and perhaps the near-UV spectrum as well. In a dorsal view with dorsal illumination their colour appears predominantly blue. Beneath the opisthosomal plate on either side is a band of white setae, not visible from above, and there are scattered white setae beneath the opisthosoma.

Legs are relatively uniform in appearance, with dark areas on the femora, lighter metatarsi and tarsi, and scattered white scales and setae. Legs III and IV are much longer than I and II, legs I and II about the same length, patella + tibia III slightly longer than patella + tibia IV. Pedipalp (Figure 43) covered dorsally with long white setae, with simple retrolateral tibial apophysis, and a coiled embolus that follows the usual pattern for *Maratus*, with a longer apex that is similar to that of *M. speculiferus* (see below) but not similar to that of *M. anomalus* (Žabka 1987). Spinnerets are grey, relatively short (Figure 43: 2-5), and are held in a retracted position beneath the living spider so that they are not readily seen from above (Figure 48). The sternum is dark, the endites, coxae and trochanters lighter.



Figure 48. Ventral view of living holotype male *Maratus robinsoni*. The spinnerets are usually retracted beneath the opisthosoma as seen here, and not extended as in the specimen shown in Figure 43.

Behaviour. In captivity, these small spiders quickly burrowed in sand to conceal themselves (Figure 49). Courtship display (Figure 50) resembles that of other *Maratus*, with respect to elevation and flattening of the opisthosoma to maximize the area visible to the female. However, we have not yet observed the use of legs III, which are relatively unspecialized in this species, as part of this display.

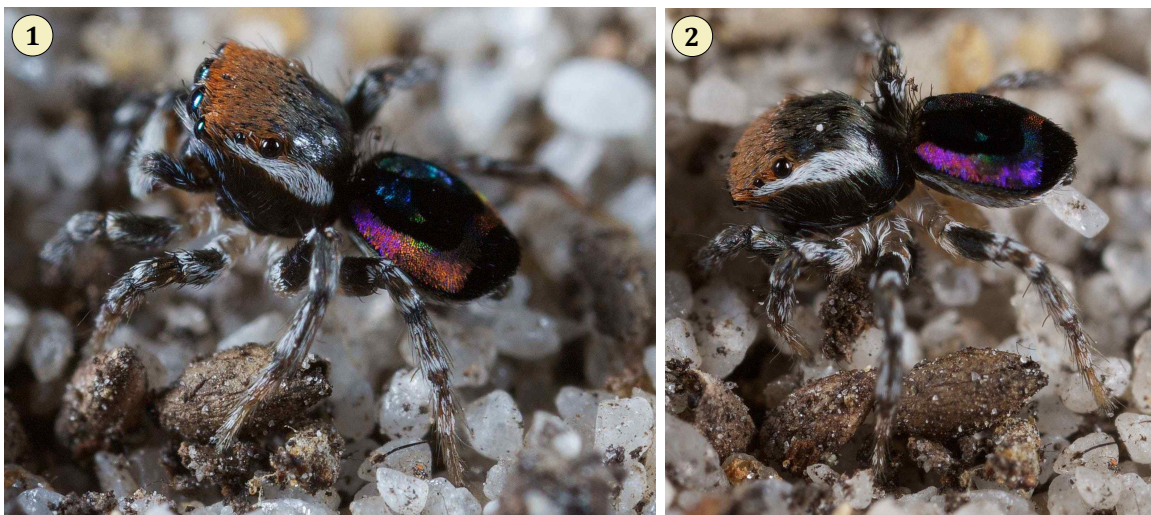


Figure 49. Holotype male (♂#3) *Maratus robinsoni* on sand. **1**, Burrowing into the sand.

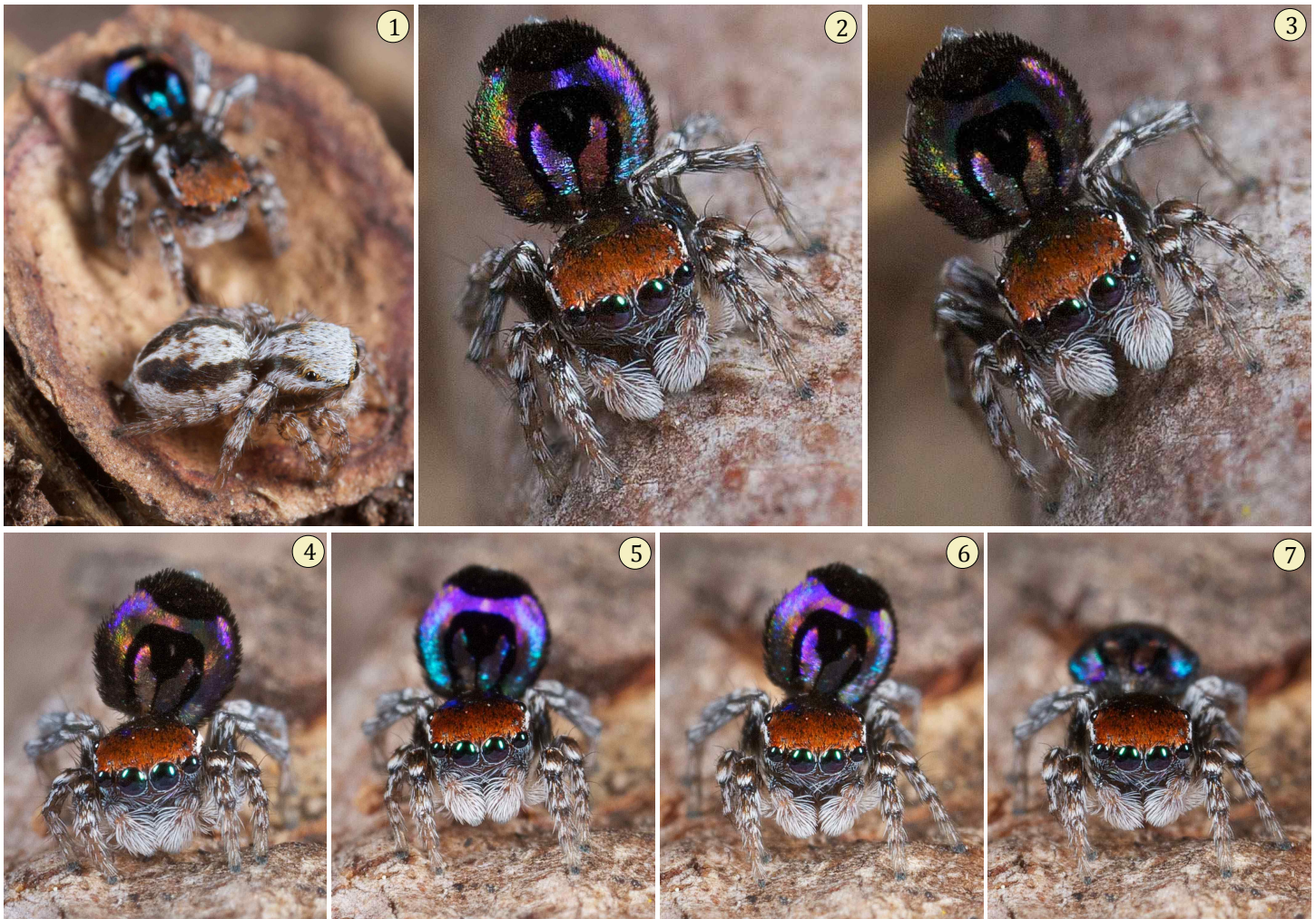


Figure 50. Display of an adult male *Maratus robinsoni* (Paratype ♂#2) to what appears to be a penultimate female of the same species. **1**, Male with penultimate female at lower right. **2-3**, Sequence showing erect and extended opisthosomal fan. Note the extension of black setae lining the lateral margins and the rear of the opisthosoma. Image (2) is a composite of two photographs to improve depth of field. **4-7**, Another display sequence, involving lateral stepping and side to side rotation of the opisthosoma. Colours visible from the front change as shown here (5-6) when the fan is rotated slightly to the rear. **7**, Fan in lower position.

Distribution. Localities where *M. robinsoni* has been found are shown in Figure 51.

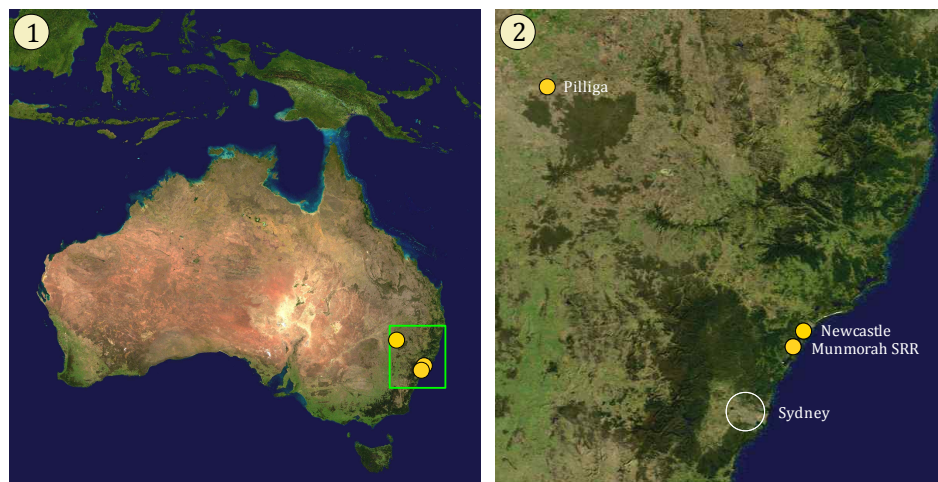


Figure 51. Known occurrence of *Maratus robinsoni* in New South Wales. In addition to the type locality (Newcastle), this spider has been found at Munmorah SRR and also at the interior location of Pilliga. Image: NASA Visible Earth.

12. *Maratus speciosus* (O. Pickard-Cambridge 1874), new combination

Salticus speciosus O. Pickard-Cambridge 1874

Habrocestum speciosum. — Keyserling 1883

Saitis speciosus. — Simon 1901a; Hill 2009; Hill & Otto 2011

The 'Coastal Peacock Spider' is a relatively well-known *Maratus* from the coastal dune communities of Western Australia. O. Pickard-Cambridge (1874; see Appendix 8) reported six specimens from the Swan River in *New South Wales*. He almost certainly referred to the Swan River Colony in Western Australia that later became the city of Perth. In the early 19th century the name *New South Wales* was applied to a much larger area, at one time encompassing all of eastern Australia ('New Holland'), and later all of southeastern Australia, extending west to Western Australia (Wikipedia 2012). For some Europeans, *New South Wales* may have had the same meaning as *Australia*. *Maratus speciosus* so far has only been found in southwestern Western Australia. The original specimens may have been lost, but a series of specimens were later collected by members of the Harvard Australian Expedition of 1931 (Hill & Otto 2011). The adult spiders shown here (Figures 52-57) were all found on vegetation in coastal sand dunes near Perth (Figures 53-57: Perth Coastal suburbs of City Beach and Hillarys, 4 SEP 2012, David Knowles coll.). Like other *Maratus*, *M. speciosus* uses both extended legs III and the elevated, expanded opisthosoma to display to females. The brightly-coloured opisthosomal plate is nearly circular in outline as viewed from above. The long, bright orange setae on either side of the male fan are revealed only during display, when the opisthosoma is flattened and expanded laterally (Figures 53-55), and have not been described previously.

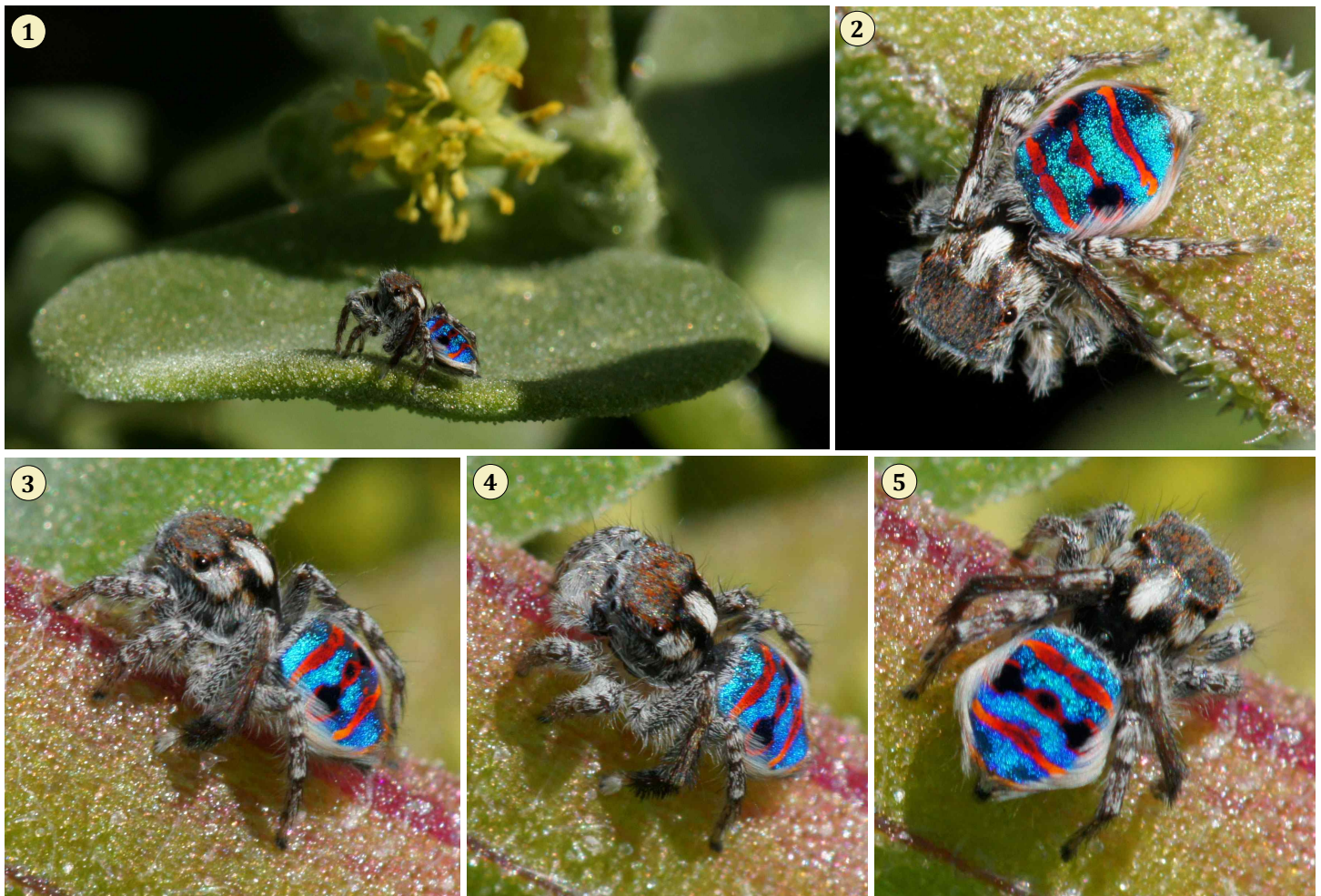


Figure 52. Adult male *Maratus speciosus* from coastal sand dunes near Perth, Western Australia. **1-2**, Spider on Sea Spinach (*Tetragonia decumbens*), a coastal shrub that is native to South Africa (28 SEP 2011). Copyright © Beth Kinsey, used with permission. **3-5**, Three views of a spider from Trigg, on the coast about 10 km north of Perth (23 SEP 2011). Copyright © Ron K. Kinsey, used with permission, previously released with a [Creative Commons Attribution-Noncommercial 2.0 Generic](https://creativecommons.org/licenses/by-nc/2.0/) license.



Figure 53. Adult male *Maratus speciosus*. Normally (1) long white setae on the lateral margins of the opisthosoma surrounded the bright orange setae on either side of the fan when it is elevated, flattened and expanded during display (3). 3-4, Sequential frames during display to a female. In (3) the fan was fully expanded, in (4) it was lowered to the rear.

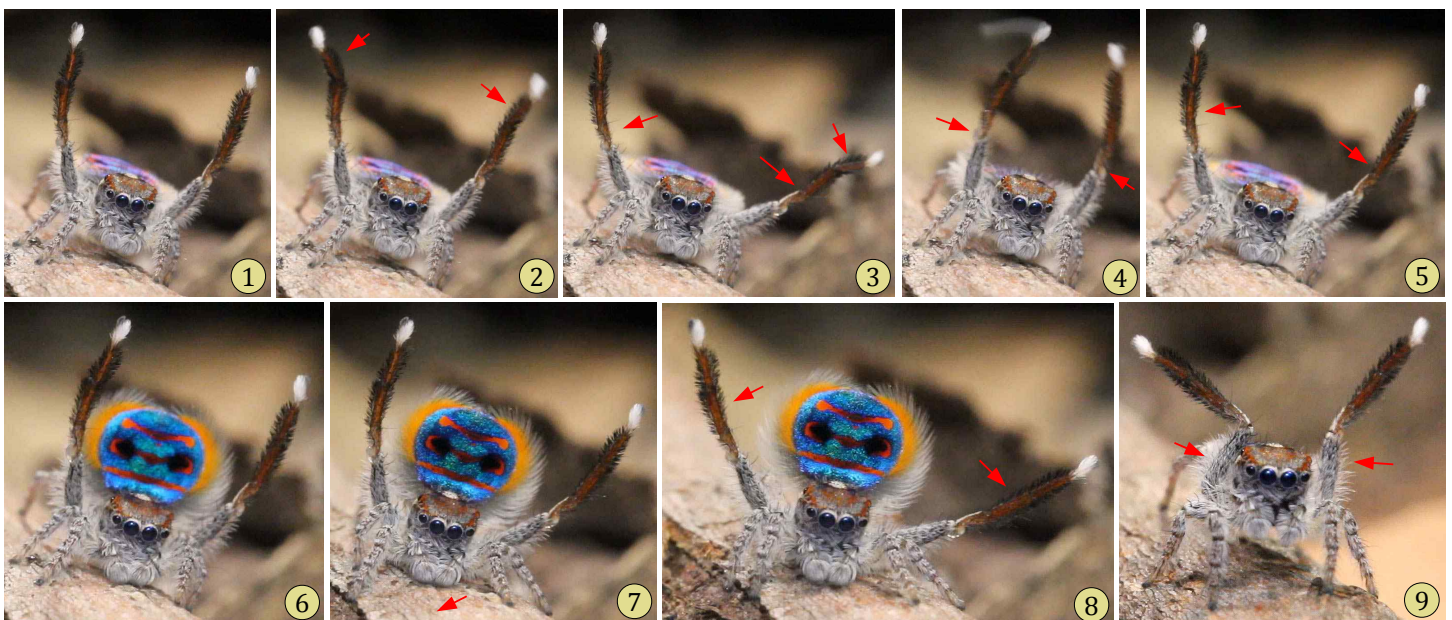


Figure 54. Sequential (not consecutive) frames from a video of a male *M. speciosus* displaying to a female. 1, Legs III upright. 2, Flexion at the tibio-metatarsal joints (arrows). 3, Legs III lowered. 4, Legs III brought together. 5, Legs III separated. 6, Fan raised and flattened or expanded. 7, Step to the right. 8, Lower legs III. 9, Raise and flex legs III at the femuro-patellar joint.

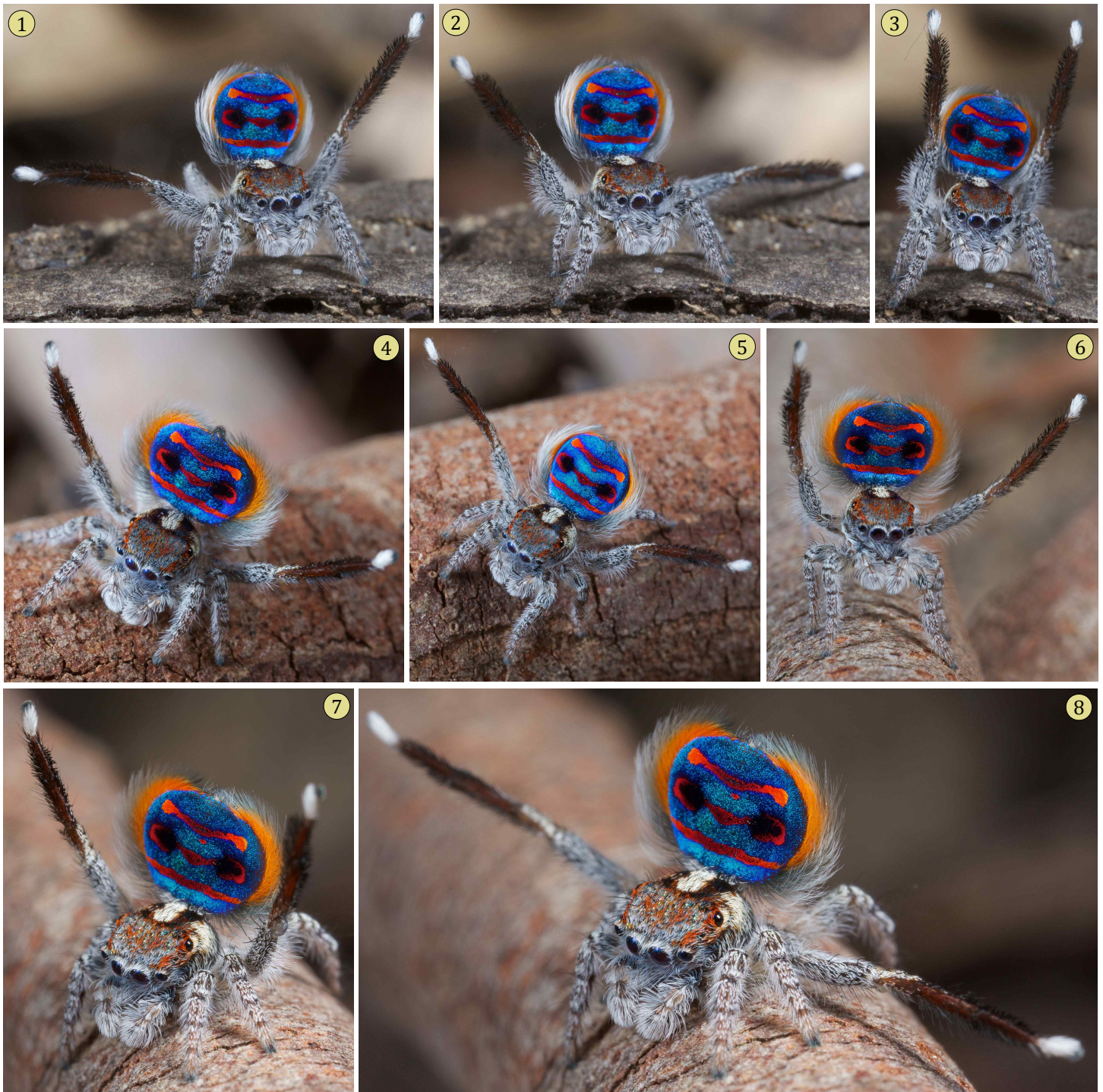


Figure 55. Photographs from four sequences (1-3, 4-5, 6, 7-8) of display by a male *Maratus speciosus* facing a female. **1-2**, Alternating leg III lifts. **3**, Both legs III in vertical position. **4-5**, This sequence shows the extent to which the elevated opisthosomal fan can be flattened and expanded (4). In (5) legs III were flexed symmetrically at the patellar-tibial joint. **6**, Legs III in bowed position with fully expanded fan. **7-8**, Legs III moved from a raised (7) to a fully extended position (8).



Figure 56. Views of displaying male *M. speciosus* from the rear (1-2), and from the side (3), showing the extreme flattening of the opisthosoma that accompanies expansion of the fan.

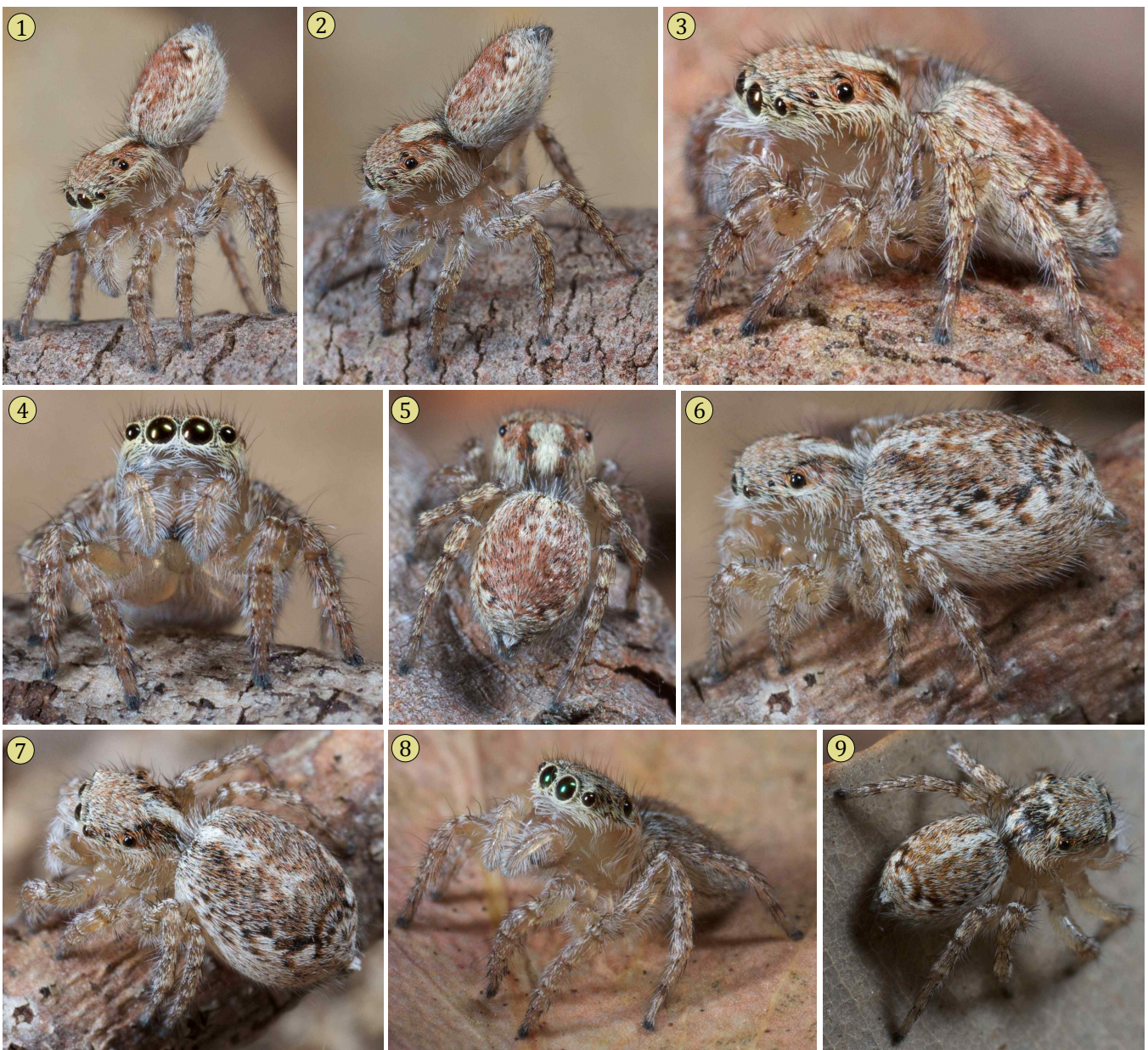


Figure 57. Three different (1-5, 6-7, 8-9) female *Maratus speciosus*. 1-2, This erect posture with elevated opisthosoma has been observed in a number of different *Maratus* species when the female has rejected a male.

Male and female specimens of *M. speciosus* are shown in Figures 58-59. Because the iridescent scales of this spider look different under alcohol, the original description of their colour (O. Pickard-Cambridge 1874; Appendix 8) was quite different from the colour of dry spiders. The only previously published drawing of a male pedipalp (Keyserling 1883; Appendix 8) did not accurately depict the embolus. Apart from our catalog of specimens in the collection of the Harvard MCZ (Hill & Otto 2011), females have not been described. The structure of the epigynum is similar to that of other *Maratus* for which the epigynum has been described.

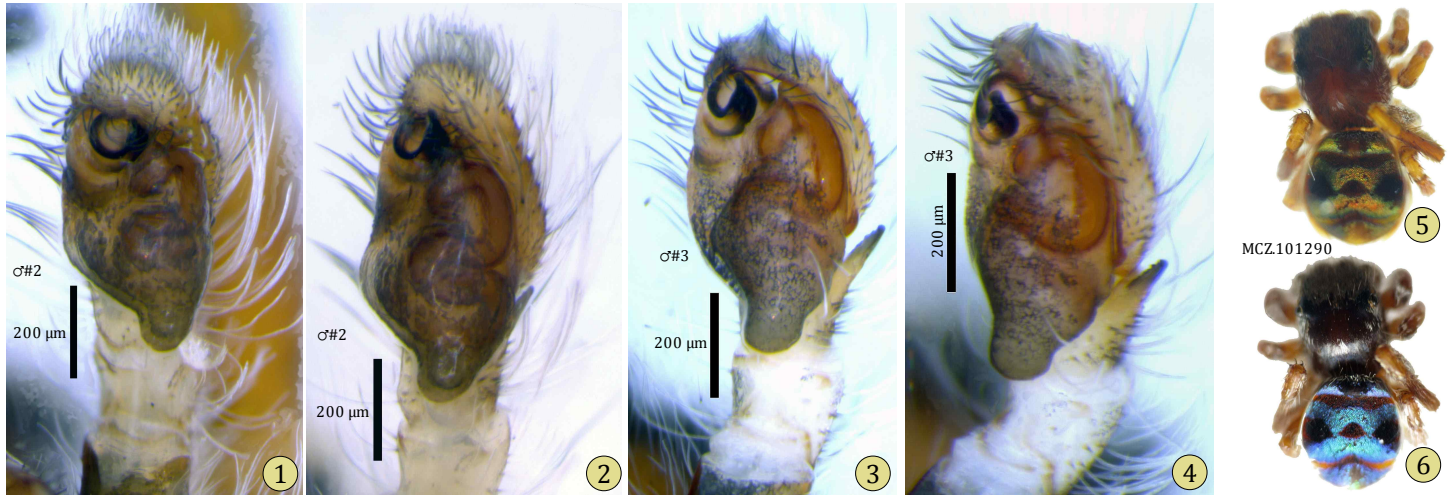


Figure 58. Adult male *Maratus speciosus* from Western Australia. **1-4**, Ventral to ventro-lateral views of the left pedipalp of two different males (Perth Coastal suburbs of City Beach and Hillarys, 4 SEP 2012, David Knowles coll.). The heavily sclerotized upper ring and the lower ring of the embolus are joined to form a thick apex projecting distally. The RTA, much like that of related spiders, has a rough or serrated distal edge (3-4). These males were about 4.0 mm in total length. **5-6**, Two views of a specimen collected by the Harvard Australian Expedition of 1931, from the collection of the Museum of Comparative Zoology (MCZ) at Harvard (MCZ.101292, Geraldton WA, 9 OCT 1931, P. J. Darlington coll.). Under alcohol (5) this spider had the 'maroon to green' colour described by O. Pickard-Cambridge (1874). Surface drying restored the original colour (6).

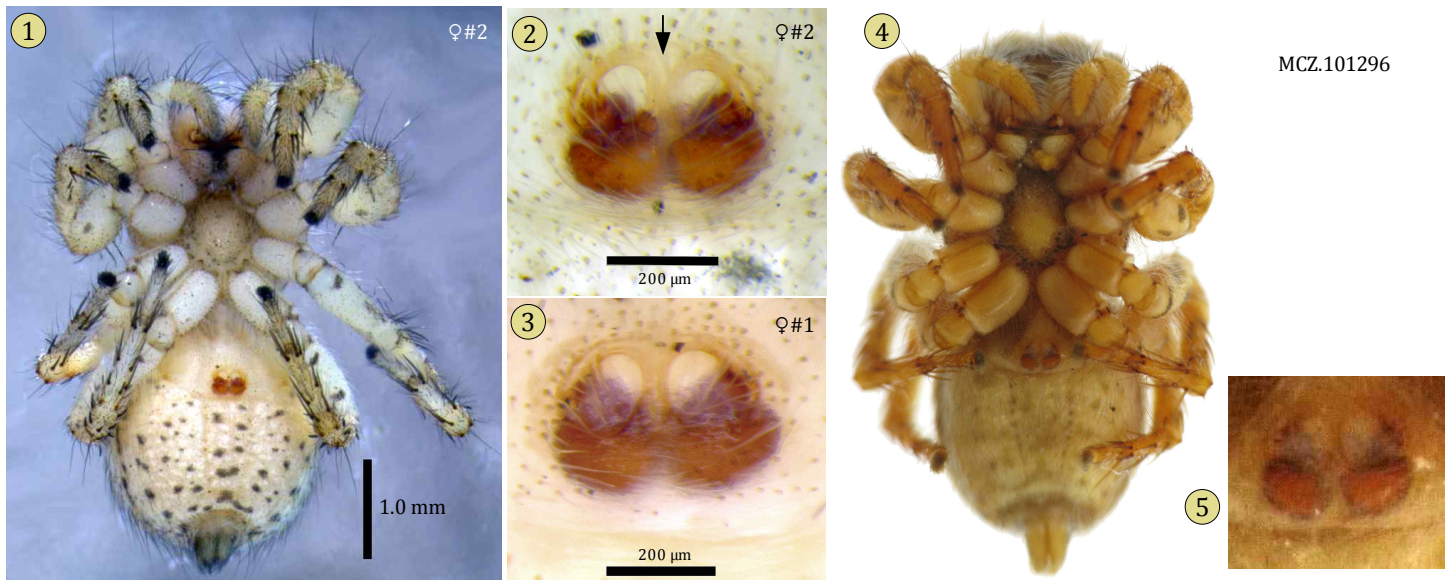


Figure 59. Adult female *Maratus speciosus* from Western Australia. **1**, Ventral view of female, showing spots on the underside of the opisthosoma (Perth Coastal suburbs of City Beach and Hillarys, 4 SEP 2012, David Knowles coll.). **2**, Detail of epigynum of this female (1). When compared to a second female collected at the same locality and time (3, to scale), the septum of this individual is wider and divided anteriorly (arrow), and the fossae are relatively smaller. In general, the fossae of *M. speciosus* are much smaller than the posterior spermathecae. **4**, Ventral view of adult female collected during the Harvard Australian Expedition of 1931 (MCZ.101296, Rottneest Island WA, 24 OCT 1931, P. J. Darlington coll.). **5**, Detail of the epigynum of this female (4). The septum of this specimen is narrower than those shown in (2) and (3).

13. *Maratus speculiferus* (Simon 1909), new combination

Habrocestum speculiferum Simon 1909

Lycidas speculifer [sic]. — Žabka 1987; Žabka 1991

This spider is known from a single male specimen found at Freemantle, just southwest of Perth. *Speculum* is Latin for *mirror*. The pedipalp figured by Žabka (1987) is close to that of *M. robinsoni*, but *M. speculiferus* has lighter-coloured legs, and a shiny brown dorsal opisthosomal plate. Photographs of a salticid that agrees with the original description (Appendix 9) are shown in Figure 60. In the original description the opisthosomal plate (scute) projected slightly beyond the distal end of the opisthosoma, but this relative position might vary according to either the feeding condition of the spider, or the extent of shrinkage of a preserved specimen.

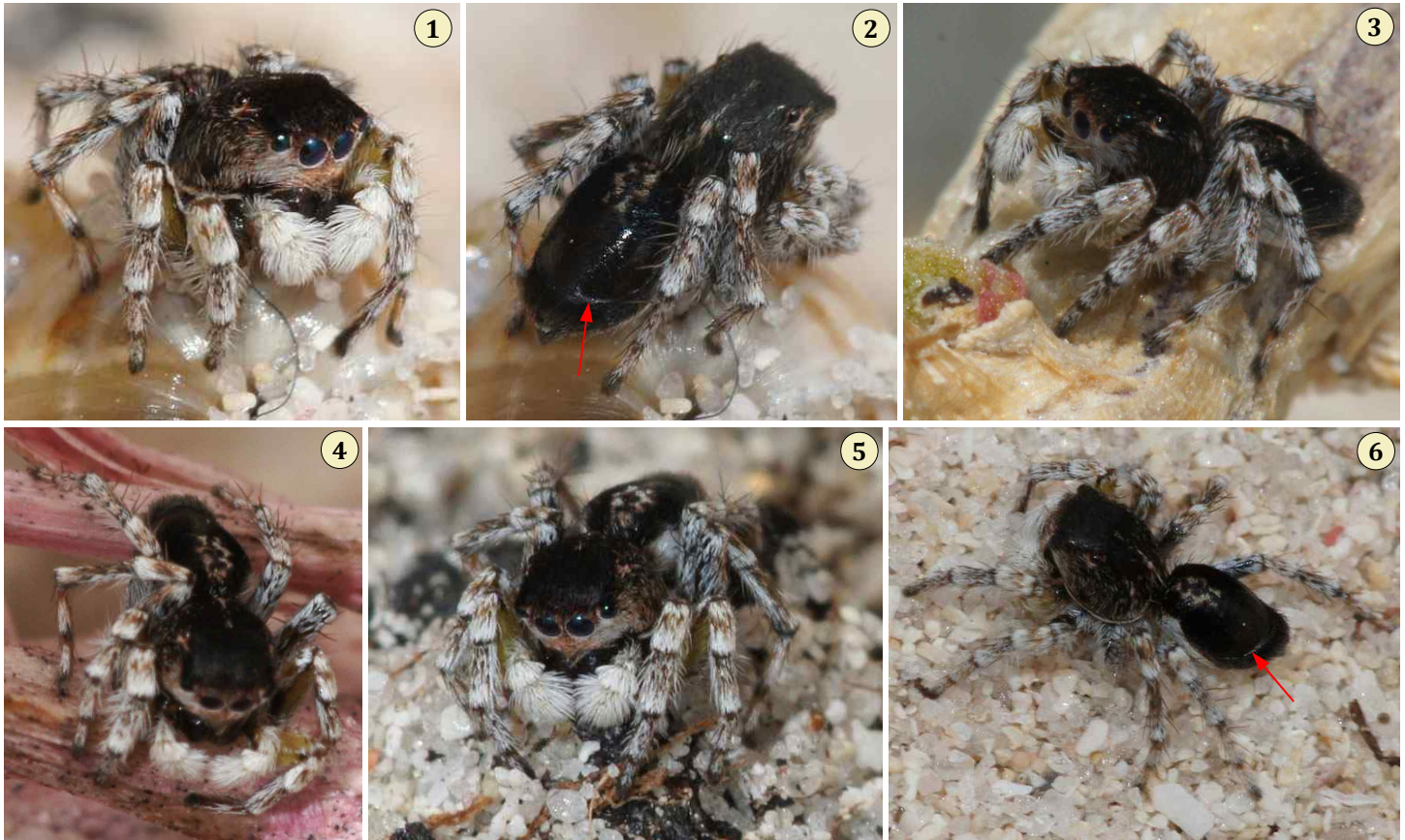


Figure 60. Adult male *Maratus cf. speculiferus* from coastal sand dunes near Perth, Western Australia (30 AUG 2010). Photos Copyright © Ron K. Kinsey, used with permission. The opisthosomal plate of this spider (rear edge indicated by arrows) only partly covers the dorsal opisthosoma.

14. *Maratus spicatus*, new species

Type specimen. The holotype male from Western Australia (Koondoola Regional Bushland, 31° 50' 54.02" S, 115° 52' 34.60" E, 3 OCT 2012, D. Knowles coll.) will be deposited in the Western Australian Museum.

Etymology. This species name (*spicatus*) corresponds to the Latin word for *spiky*, a reference to the presence of many large, spike-like setae on the lateral margins of the male opisthosoma.

Diagnosis. The distinctive pattern of black, blue and gold chevrons on the dorsal opisthosoma of the male is unique (Figure 61).

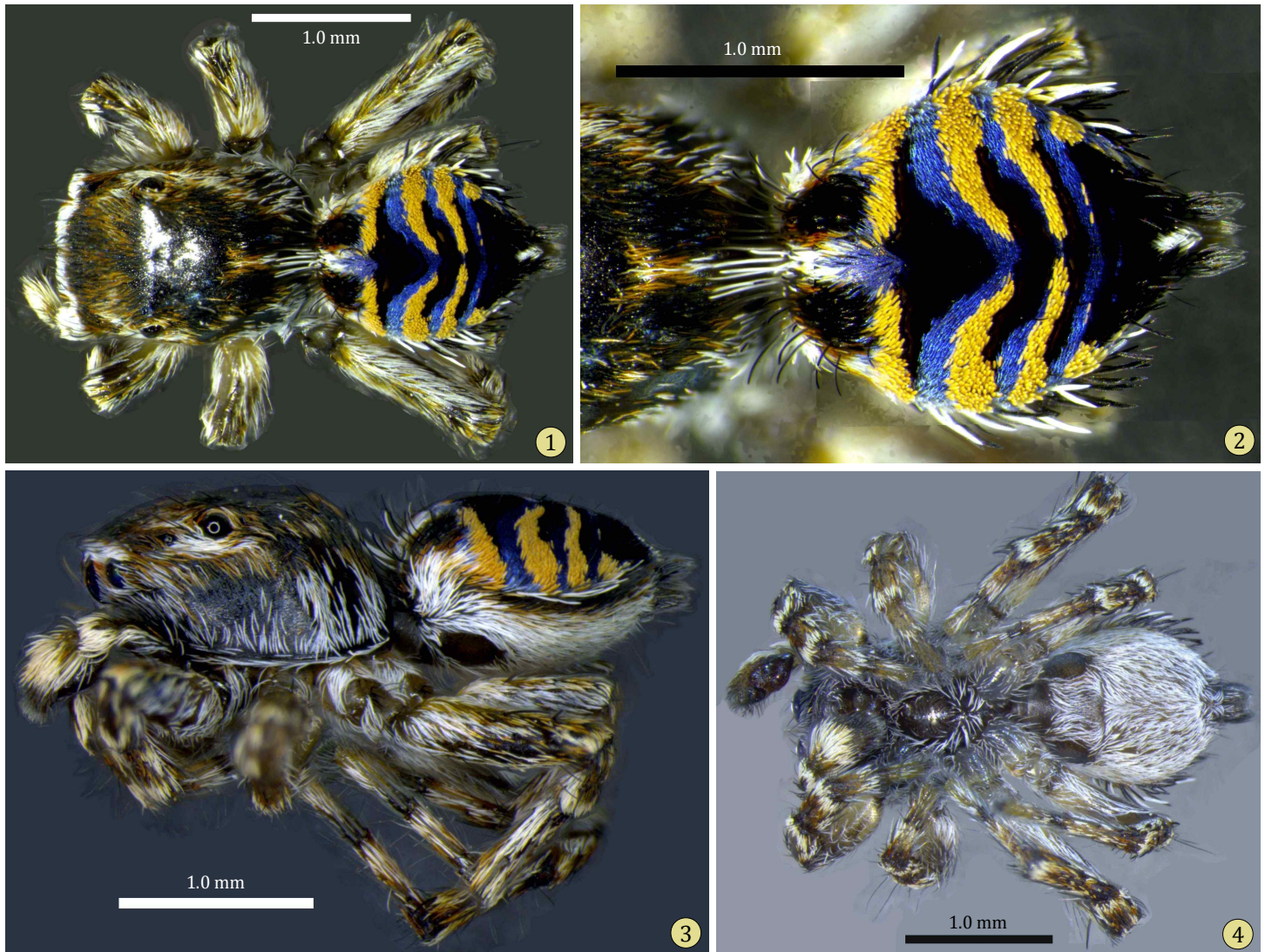


Figure 61. Four views of the male holotype of *Maratus spicatus*. **1**, Dorsal view. **2**, Detail from dorsal view (composite) showing the median pencil of white setae extended forward from the anterior opisthosoma, the alternating gold, black and blue scale fields (chevrons) of the dorsal opisthosoma, and the large white setae, with underlying large black setae, extending postero-laterally on either side of the opisthosoma. **3**, Left lateral view. **4**, Ventral view.

Description of male. This is a small (body length ~3.0 mm) *Maratus*. The carapace is black, with thin marginal bands of white setae and mostly white setae on the sides. The eye region is covered with a mixture of dull red-brown and white scales, and a line of white scales is present above the anterior eye row. There is an indistinct line of white scales beneath each PLE. The PME are distinctly closer to the PLE than to the ALE. The chelicerae and clypeus are dark and glabrous. The dorsal opisthosoma has a pencil of stout white setae extending anteriorly, with curved black setae beneath these and to the sides. Large and stout or spike-like white setae project postero-laterally from the opisthosomal margins, and beneath these are large and stout black setae. This group of setae separates the dorsal plate of the opisthosoma from the venter, which covered with dense white to off-white setae (Figure 61:3-4). The dorsal plate (Figure 61:2) is densely covered with alternating bands of black, blue, and longer gold scales that extend above the other bands. There are two black spots at the front, and a black triangle at the rear, interrupted by a small patch of white scales above the grey spinnerets. Sternum, labium, and endites dark grey and glabrous.

Legs I and II shorter and about the same length, legs III and IV longer, and legs III longest. The colouration of all legs is about the same, with irregular patterns of mostly white and a few red-brown scales, and legs III are not ornamented in any way.

The pedipalps (Figure 62) can be readily distinguished from those of other *Maratus* that have been described by the presence of a thick, dark sclerotized area on the medial portion of the outer ring of the embolus. The sclerotized area has a distinctly spiral shape. The disto-lateral apex of the embolus has two separate areas of dark cuticle that converge into a single point. The retrolateral tibial apophysis (RTA) is typical for this group.

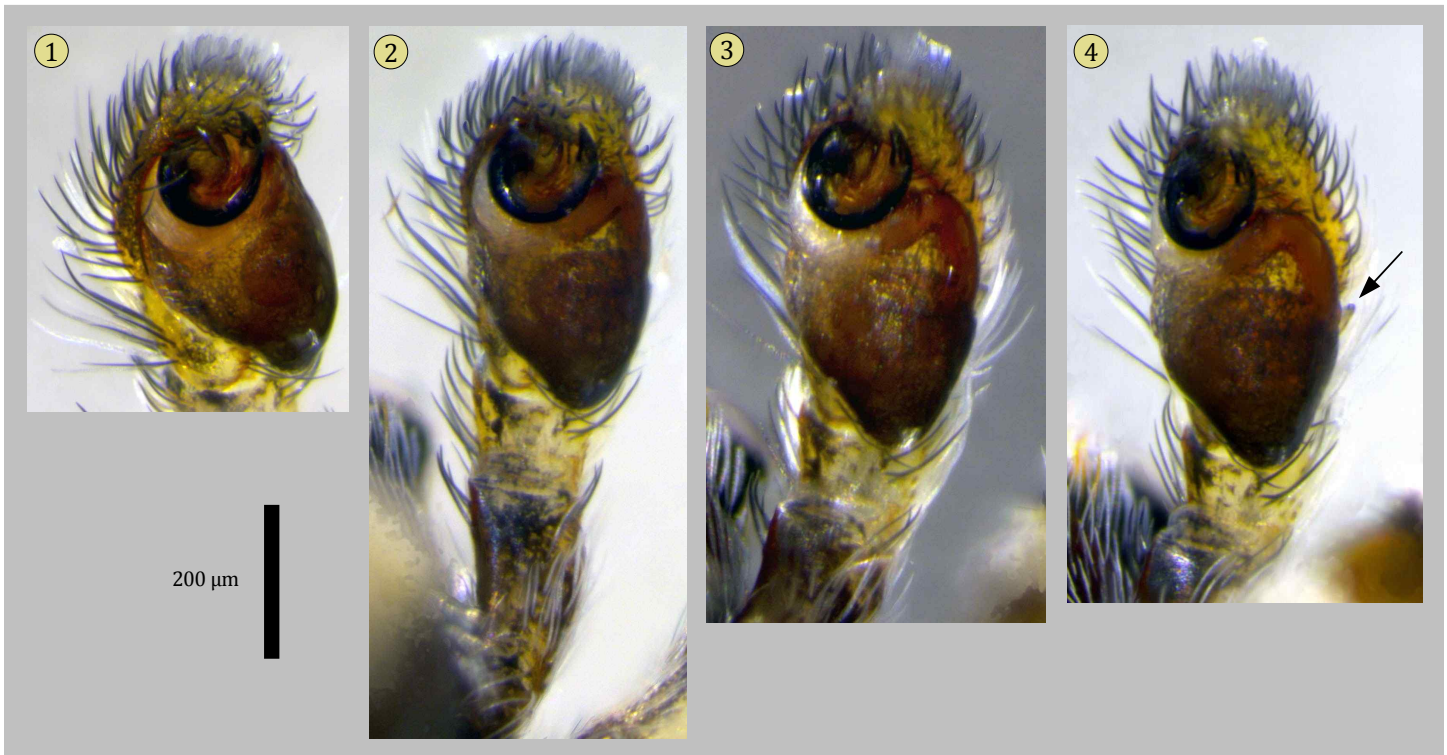


Figure 62. Four views of the left pedipalp of the male holotype of *Maratus spicatus*. **1**, Oblique, ventral and slightly distal view, showing the distinct spiral shape of the heavily sclerotized outer ring of the embolus. This ring is very thick medially (or anteriorly; to the left in these views). **2-3**, Ventral views. **4**, Slightly lateral, ventral view showing the RTA (arrow). The apex of the embolus has at least two separate areas of dark cuticle that come together in a point.

Like other *Maratus*, male *M. spicatus* raise their opisthosoma when they display to females, but are not known to signal with their legs III, which are not particularly ornamented (Figures 63-64).

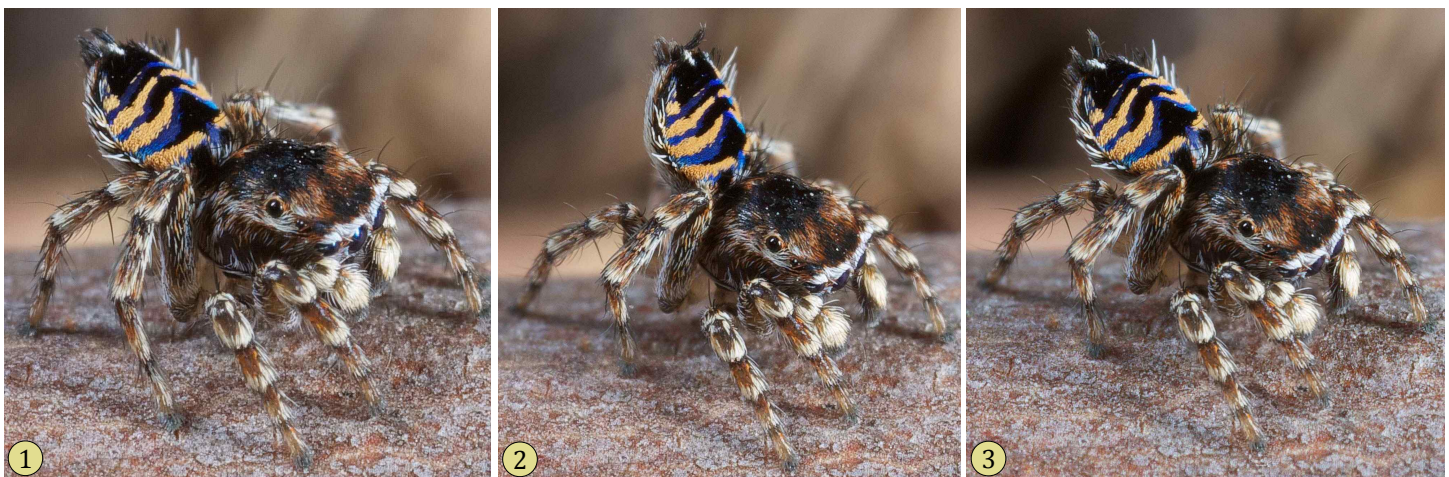


Figure 63. Holotype male *M. spicatus* displaying to a larger female of a different species. Images 1-3 are sequential. **2**, Legs III were moved to the rear and the opisthosoma was raised. Note the separation of the spinnerets at the top of the fan. **3**, The opisthosoma was lowered. Image (3) is a composite of two photographs to improve depth of field.



Figure 64. *Maratus spicatus* ('Blue and Gold Peacock Spider') from Western Australia. Note the elevation of the opisthosoma, and extension of the long, black posterior spinnerets during display (3, 6). The female shown here was found in the vicinity of this male, and may represent the same species. All photos Copyright © Jean and Fred Hort, used with permission, previously released under a [Creative Commons Attribution 2.0 Generic](https://creativecommons.org/licenses/by/2.0/) license.

15. *Maratus splendens* (Rainbow 1896), new localities

Attus splendens Rainbow 1896

Saitis splendens. — Simon 1901b

Saitis rainbowi. — Roewer 1951

Maratus splendens. — Žabka 1991; Hill & Otto 2011; Otto & Hill 2011

This small (~3 mm) *Maratus* was originally found near Sydney (Rainbow 1896). We later found it in Lane Cove National Park near Sydney (Hill & Otto 2011, Otto & Hill 2011). Here (Figures 65, 66) we report two new localities that greatly extend the known distribution of this spider: Buldah State Forest in Victoria (Tennyson campsite, Tennyson Track, 37° 14' 33.48" S, 149° 7' 3.08" E, 7 JAN 2011, found by Hayley

David-Harcourt, Bradley Jenner, Jordan de Jong), and Mt. Cooke in Western Australia (specimen identified from a photograph supplied by Junxia Zhang). These new distribution records are important because although Dunn rightly separated this species when he described *M. pavonis* (1947), and it is quite distinct from that larger species, one might also consider *M. splendens* to represent only one local race or subspecies of the widely distributed *M. pavonis*. The appearance of *M. splendens* across southern Australia in its typical and distinctive form and small size supports its recognition as a separate species.



Figure 65. Two views of an adult male *Maratus splendens* found at the edge of a clearing in damp sclerophyll forest, Buldah State Forest, Victoria. The crescentic transverse band of iridescent (black to blue) scales on the carapace between the PLE (arrows) readily distinguishes this species from the related *M. pavonis* (Dunn 1947). Photographs Copyright © Jordan de Jong, used with permission.



Figure 66. Australian localities where *Maratus splendens* has been found. Previously this species was only known from the vicinity of Sydney, New South Wales. Background satellite image courtesy of NASA Visible Earth.

16. *Maratus velutinus*, new species

Type specimens. Holotype and two paratype males (♂#4-5) from Ku-ring-gai Chase National Park in New South Wales (33° 35' 26.27" S, 151° 16' 3.91" E, 23 SEP 2012, J. Otto coll.) Other paratype males: three from the same locality (2 OCT 2010, J. Otto coll.), three (♂#1-3) from the Blue Mountains National Park (33° 38' 27" S, 150° 22' 16" E, 22 SEP 2012, J. Otto coll.), and one from Newcastle (33° 00' 15.85" S, 151° 42' 52.43" E, 24 OCT 2012, P. Robinson coll.). All will be deposited in the Australian Museum, Sydney.

Etymology. The species name *velutinus* is derived from the Latin word *velutinae*, which translates to *velvety* in English. This is a reference to the appearance of the male opisthosomal plate.

Diagnosis. The tapering, velvety black opisthosomal plate of the male is unique for *Maratus* (Figure 67).

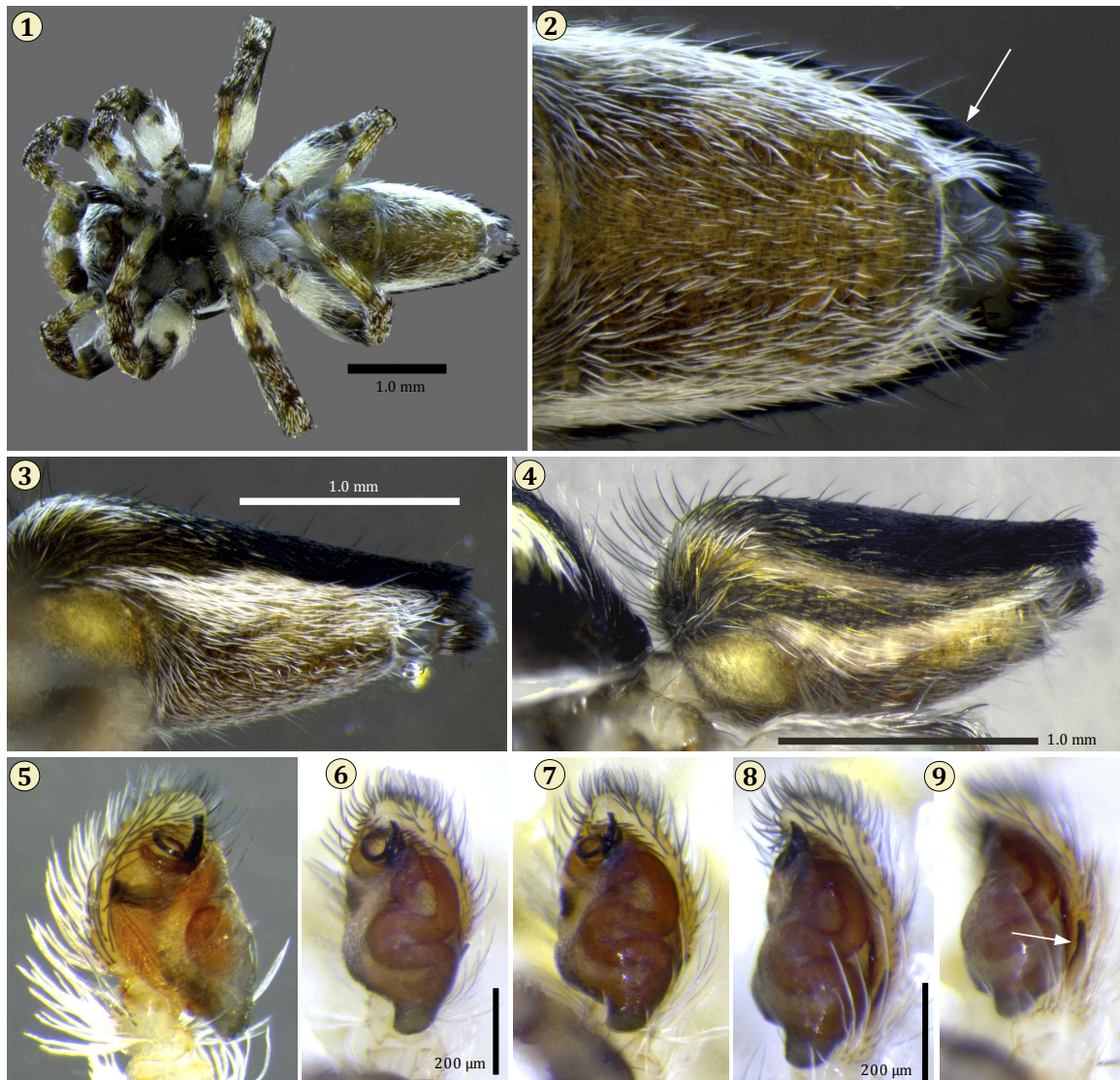


Figure 67. Detailed structure of holotype (1-3) and paratype (4-9) male *M. velutinus*. **1**, Underside, showing proximal light colour and distal dark blotches of femora I-IV. **2**, Detail of (1), showing overlapping dorsal plate (arrow). **3-4**, Lateral opisthosoma showing long white setae beneath the dorsal plate. **5-9**, Medio-ventral to lateral views of left pedipalp. The apices of both the outer and inner rings of the embolus are prominent. The ventral edge of the blunt RTA is irregular (9, arrow).

Description of male. Body length 3.65-4.53 mm (n=7). Prosoma and opisthosoma subequal in length. Embolus of male pedipalp with prominent distal apex on both the outer and inner ring. RTA blunt, with

an irregular distal edge. Pedipalps covered with long white setae above. The anterior eyes are bright green, and aligned at the top (Figures 68-69). PME are much closer to the PLE than to the ALE. The carapace is dark brown to black. Stripes or bands of orange-brown scales extend across the ocular quadrangle to the rear behind each of the four anterior eyes. These stripes are separated by a uniform cover of off-white setae. There is a white marginal band, beginning beneath the ALE and extending along the margin at each side to the rear of the carapace. In addition to this marginal band, there are three prominent stripes of white setae, one extending at the median from the PLE row more than half way to the rear, and one on either side, extending from just below the PLE 2/3 of the way to the rear of the carapace.

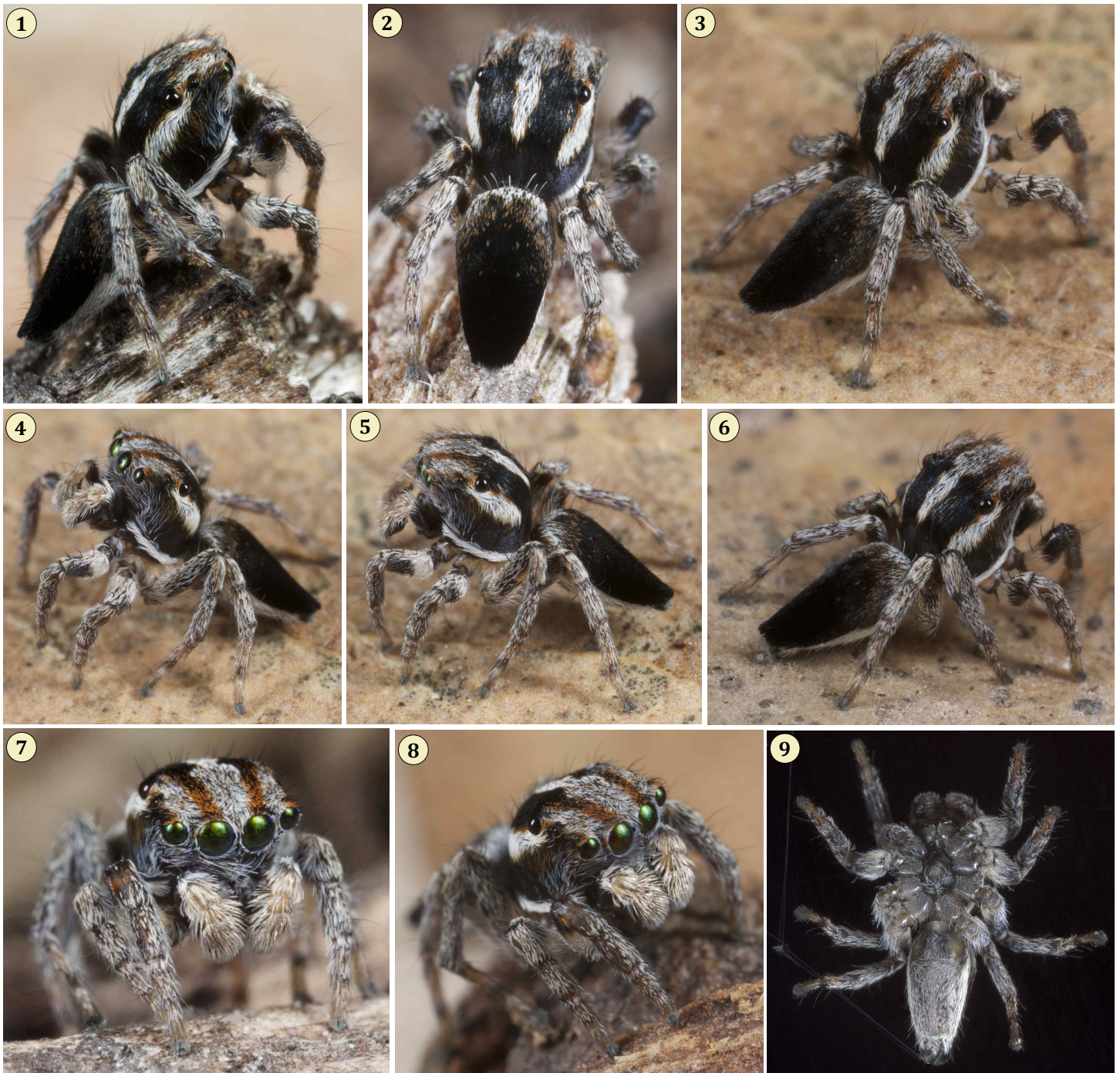


Figure 68. Holotype male *Maratus velutinus* from Ku-ring-gai Chase National Park. From the front (7, 8), this spider looks much like any other *Maratus* with a striped carapace, but the opisthosoma (1-6) is relatively narrow and tapers sharply toward the rear. The underside (9) is uniformly grey with scattered to moderately dense white setation.

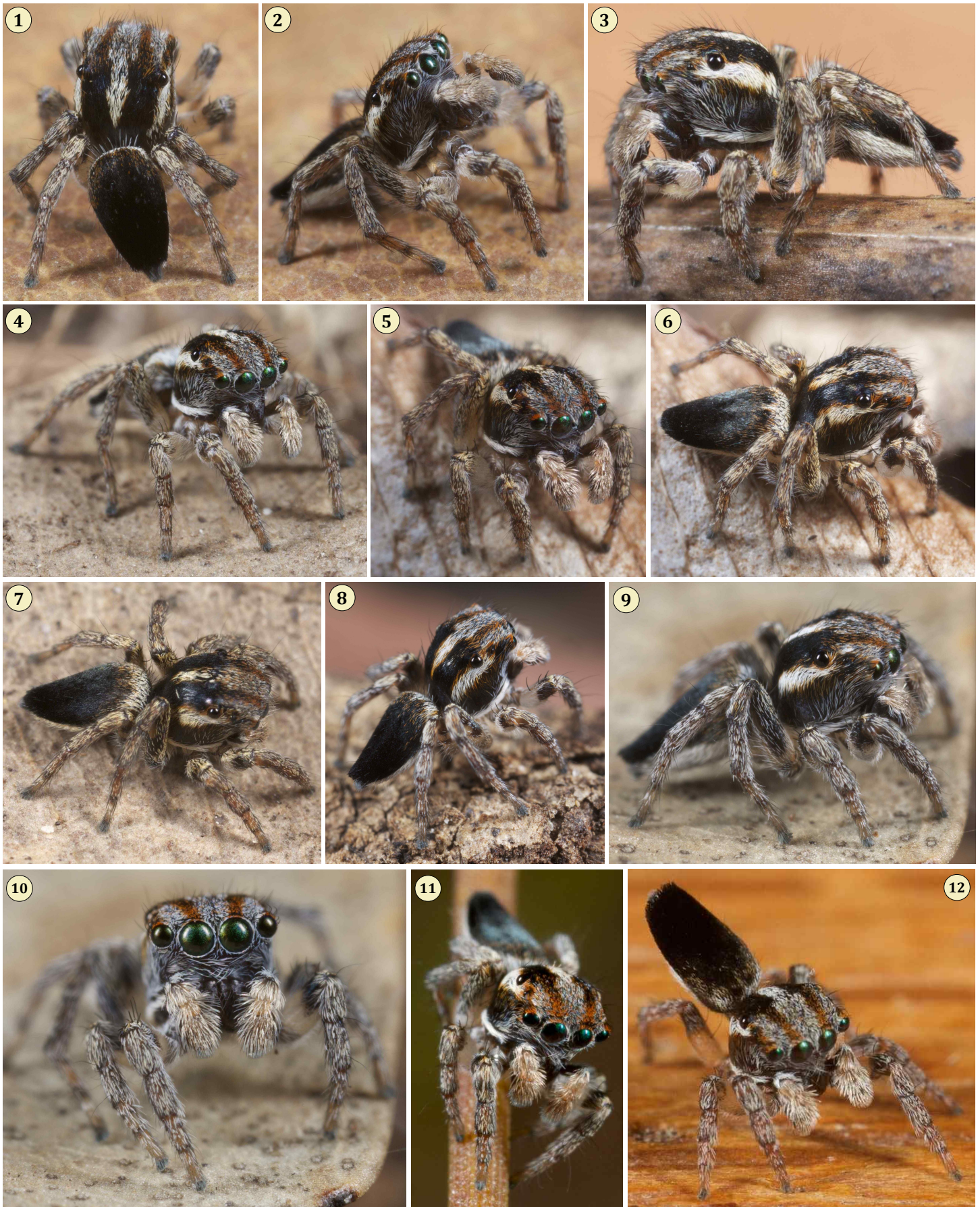


Figure 69. Male *Maratus velutinus*. 1-7, Paratypes from the Blue Mountains NP (1-4, ♂#1; 5-6, ♂#2; 7, ♂#3). 8-10, Paratypes from Ku-ring-gai Chase NP (8, ♂#4; 9-10, ♂#5). 12, When they display to females, males move the elevated opisthosoma from side to side. Signalling with extended legs III has not been observed in this species.

Opisthosoma about twice as long as wide, tapering strongly toward the rear. Opisthosoma with anterior marginal band of white to off-white setae, with a few (~8) longer white setae projecting toward the front. Behind this a narrow dorsal opisthosomal plate extends just over the sides of the opisthosoma laterally, and slightly beyond the spinnerets to the rear. This plate is covered with jet-black (when viewed from above) velvet setae with a sheen of iridescent pale-blue colour visible toward the front and sides. Below, on either side of the plate, is a lateral band of long white setae. Some dark orange scales may also be present at the anterior end of the plate, adjacent to the anterior marginal band. Below (Figure 68:9) the living spider is grey with scattered white setae, but the colour of the underside in the preserved specimen is quite different (Figure 67:1-2), with the underside of the femora white proximally and black distally, and a yellowish cast to the underside of the opisthosoma.

Except for darker areas on the femora, legs are fairly uniform in colour, covered with scattered white to off-white setae. Legs I and II relatively short and about the same length, legs IV much longer, and legs III the longest, though not as long as in some other *Maratus*, and not decorated. The chelicerae (Figure 69:10) are relatively small, black, and glabrous. Long grey to off-white setae run diagonally across the clypeus, which is about 2/3 the height of an AME.

17. *Maratus* species D (Gnangarra Peacock Spider)

This *Maratus* was photographed recently (Figure 70) in white sandy *Banksia* heathlands in Gnangarra, about 20 km north of Perth in Western Australia. It is similar to *M. pavonis* and *M. splendens*, but has a distinctly different pattern of scales on the dorsal opisthosomal plate. The three species belong to a recognizable clade (*splendens* group) within the genus *Maratus*.

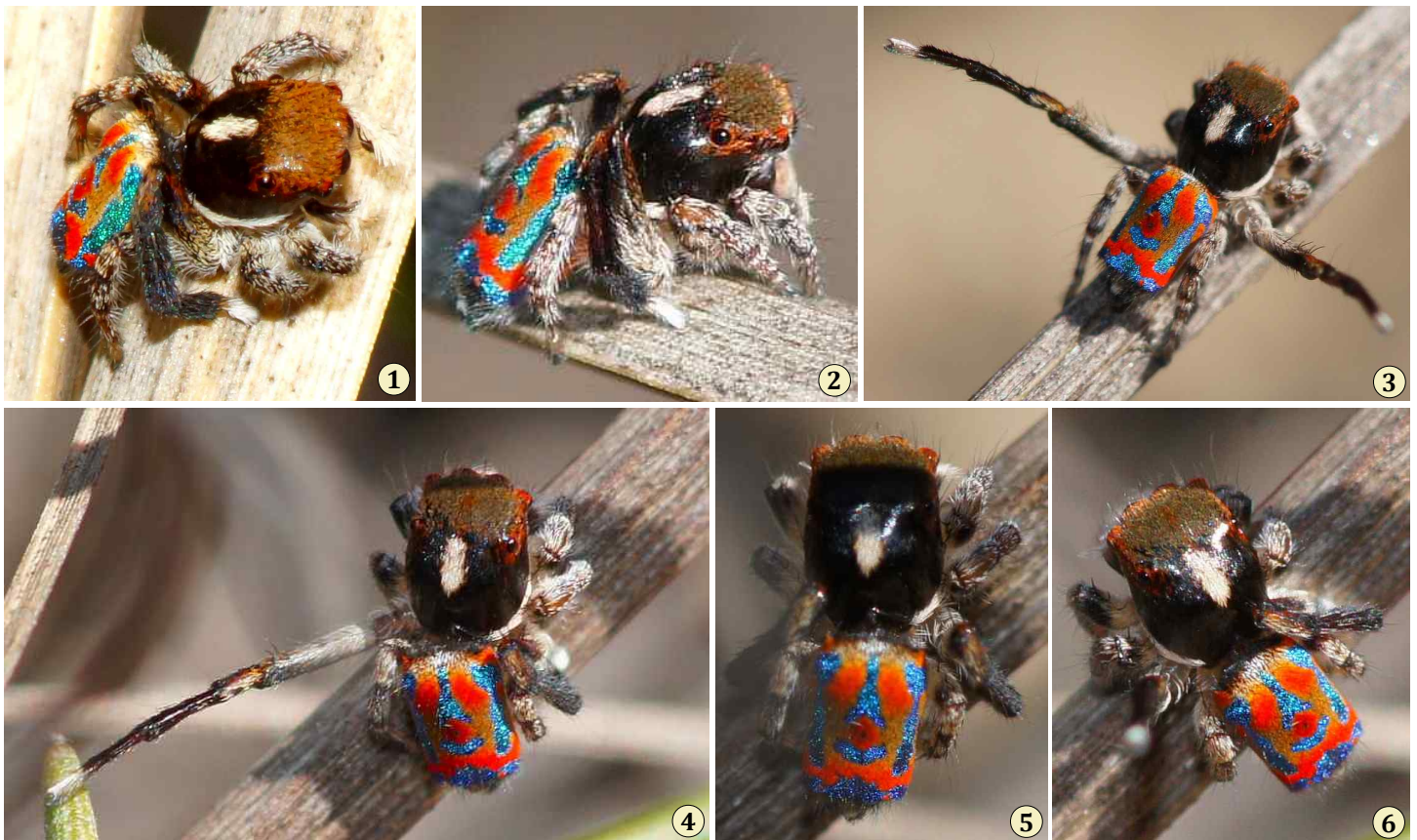


Figure 70. Adult male *Maratus* species D (Gnangarra Peacock Spider, 15 JUL 2010). 3, Displaying with extended legs III. 4, Signalling with one extended leg, LIII. All photos copyright © Ron K. Kinsey, used with permission.

Other *Lycidas* species (*incertae sedis*)

A number of other euophryine species that we have not examined have also been described in the genus *Lycidas* Karsch 1878 or later transferred into it (listed in Appendix 10). Our synonymy of *Lycidas* with *Maratus* will require these to be transferred at some time to either *Maratus* or to different genera. Placement of these little-known species should be based on the discovery and detailed description of adult males, since many are known only from single female specimens. *Jotus braccatus* and *Jotus minutus*, transferred to *Lycidas* by Zabka (1987), have been recently returned to *Jotus* (Platnick 2012).

Acknowledgments

We thank Farhan Bokhari, Chausino, Jordan de Jong, Mark Helle, Fred Hort, Jean Hort, Beth Kinsey, Ron K. Kinsey, Chris Martinez, Óscar Méndez, Tomas Rak, Peter Robinson, and Robert Whyte for contributing many of the photographs and discoveries included in this paper. In addition we thank Robert Whyte for providing us with high quality images of plates by Keyserling and L. Koch, as well as much additional information that he has compiled about Australian euophryines. We thank Jerzy Prószyński and Marek Żabka for allowing us to use their drawings, and Junxia Zhang for sending us some of her photographs of Australian euophryines. We thank Jason Dunlop and Anja Friederichs of the Museum für Naturkunde in Berlin for the loan of the *L. anomalus* type, Graham Milledge of the Australian Museum in Sydney for the loan of *Maratus anomalus* and *Maratus robinsoni* specimens, Laura Leibensperger of the Museum of Comparative Zoology at Harvard for the loan of *Hypoblemum* and *Saitis* specimens in the Peckham Collection, David Knowles for sending us *M. pavonis*, *M. speciosus* and *M. spicatus*, and Stuart Harris for providing us with a specimen of *S. virgatus* from the Eden area. We thank G. B. Edwards and David B. Richman for their review of our manuscript. We would also like to acknowledge the support of the National Parks and Wildlife Service of New South Wales (licence SL 100390), the St. Ives Wildflower Garden, and the Department of Environment and Conservation of Western Australia (licence SF008869) for permission to collect specimens. All illustrations in this paper are Copyright © by the respective original photographer or contributor if so indicated in each figure, and all other photographs are Copyright © Jürgen C. Otto.

References

- Atkinson, R. 2010. *Jotus auripes*. The Find-a-spider Guide for the Spiders of Southern Queensland. Online at: <http://www.findaspider.org.au/find/spiders/496.htm>
- Bryant, E. B. 1935. Some new and little known species of New Zealand spider. Records of the Canterbury Museum 4: 53–70.
- 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 (2): 189–266.
- Dews, S. 2010. Peacock jumping spider. Available online at: <http://www.aussiecreatures.net/index.php?showimage=326>
- Dunn, R. A. 1947. A new salticid spider from Victoria. Memoirs of the National Museum of Victoria 15: 82–85.
- Forster, R. F. and L. M. Forster. 1972. New Zealand spiders: an introduction. Auckland, Collins, 254p.
- 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)
- Hickman, V. V. 1944. The Simpson Desert expedition, 1939. Scientific reports no. 1, biology. Scorpions and spiders. Transactions of the Royal Society of South Australia 68 (1): 18–48.
- Hill, D. E. 1979. The scales of salticid spiders. Zoological Journal of the Linnean Society 65(3): 193–218.
- 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. 2012. Notes on the jumping spiders *Thiodina puerpera* (Hentz 1846) and *Thiodina sylvana* (Hentz 1846) in the southeastern United States (Araneae: Salticidae). Peckhamia 99.1: 1–63.
- 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.

- Jackson, R. R. and M. B. Willey. 1995.** Display and mating behaviour of *Euophrys parvula*, a New Zealand jumping spider (Araneae: Salticidae). *New Zealand Journal of Zoology* 22 (1): 1–16.
- 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]. *Mitteilungen des Münchener Entomologischen Vereins* 2 (1) : 22–32.
- Keyserling, E. 1882.** Die Arachniden Australiens. Nürnberg. 1: 1325–1420.
- Keyserling, E. 1883.** Die Arachniden Australiens. Nürnberg. 1: 1421–1489.
- Koch, L. 1881.** Die Arachniden Australiens. Nürnberg. 1: 1213–1271.
- Kulczyński, W. 1905.** Fragmenta arachnologica. I–IV. *Bulletin International de l'Academie des Sciences de Cracovie* 1904: 533–568.
- Logunov, D. V. 2001.** New and poorly known species of the jumping spiders (Aranei: Salticidae) from Afganistan, Iran and Crete. *Arthropoda Selecta* 10: 59–66.
- Metzner, H. 1999.** Die Springspinnen Griechenlands. *Andrias* 14: 1–279. Karlsruhe.
- Metzner, H. 2012.** Worldwide database of jumping spiders (Arachnida, Araneae, Salticidae). Available online at: <http://www.jumping-spiders.com/>
- 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. 2011.** 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. 2012.** Contests between male *Maratus vespertilio* (Simon 1901) (Araneae: Salticidae). *Peckhamia* 98.1: 1–17.
- Paquin, P., C. J. Vink and N. Dupérré. 2010.** Spiders of New Zealand: Annotated Family Key & Species List. Manaaki Whenua Press, Lincoln, New Zealand, vii+ 118 pp.
- Peckham, G. W. and E. G. Peckham. 1885.** Genera of the family Attidae: with a partial synonymy. *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters* 6: 255–342, tables I–IV.
- Peckham, G. W. and E. G. Peckham. 1903.** New species of the family Attidae from South Africa, with notes on the distribution of the genera found in the Ethiopian Region. *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters* 14(1): 173-278, plates XIX-XXIX.
- 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.
- Platnick, N. I. 2012.** Fam. Salticidae. In: *The World Spider Catalog, Version 13.0.* Available online at: <http://research.amnh.org/iz/spiders/catalog/SALTICIDAE.html>
- Prószyński, J. 1984.** Atlas rysunków diagnostycznych mniej znanych Salticidae. *Zeszyty Naukowe WSRP, Siedlce.* Figures 1–177.
- Proszynski, J. 2012.** Monograph of the Salticidae (Araneae) of the world 1995-2011. Version October 2nd, 2011. Available online at: <http://www.peckhamia.com/salticidae/>
- 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.
- Richardson, B. J. and M. Žabka. 2007.** A revision of the Australian jumping spider genus *Prostheclina* Keyserling, 1892 (Araneae: Salticidae). *Records of the Australian Museum* 59 (1): 79–96.
- Roewer, C. F. 1951.** Neue Namen einiger Araneen-Arten. *Abhandlungen herausgegeben von Naturwissenschaftlicher Verein zu Bremen* 32: 437–456.
- Simon, E. 1868.** Monographie des especes europeenes de la famille des Attides (Attidae Sundewall–Saltigradae Latreille). *Annales de la Societe entomologique de France* 4(8): 11–72, 529–726, plates V–VII.
- Simon, E. 1876.** Les arachnides de France. Paris, 3: 1–364.
- Simon, E. 1901a.** Histoire naturelle des araignées. Paris, 2: 381-668.
- Simon, E. 1901b.** Etudes arachnologiques. 31e. Memoire. L. Descriptions d'especes 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, 2^{me} partie. In: *Die Fauna Südwest-Australiens. Ergebnisse der Hamburger südwest-australischen 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.
- Song, D. X. and J. Y. Chai. 1991.** On new species of jumping spiders (Araneae: Salticidae) from Wuling Mountains area, southwestern China. *Journal of Xinjiang University* 9 (3): 76-86.
- Song, D. X. and G. C. Li. 1997.** Spiders of Wuling Mountains area. In: D. X. Song, ed., *Invertebrates of Wuling Mountains Area, Southwestern China.* Science Press, 400-448.
- Song, D. X., M. S. Zhu and J. Chen. 1999.** The Spiders of China. Hebei Science and Technology Publishing House, 640 pp.
- 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. 2008.** A new species of *Maratus* (Araneae: Salticidae) from southwestern Australia. Records of the Western Australian Museum 24: 369–373.
- Wikipedia. 2012.** History of New South Wales. Online at: http://en.wikipedia.org/wiki/History_of_New_South_Wales
- Żabka, M. 1987.** Salticidae (Araneae) of Oriental, Australian and Pacific Regions, II. Genera *Lycidas* and *Maratus*. Annales Zoologici 40 (11): 451–482.
- Żabka, M. 1991.** Studium taksonomiczno-zoogeograficzne nad Salticidae (Arachnida: Araneae) Australii. Wyższa Szkoła Rolniczo-Pedagogiczna W Siedlcach. Rozprawa Naukowa 32: 1–110.
- Żabka, M. and S. D. Pollard. 2002.** Salticidae (Arachnida: Araneae) of New Zealand: genus *Hypoblemum*. Records of the Canterbury Museum 16: 64–72.
- Zhang, J. 2012.** Phylogeny and systematics of the jumping spider subfamily Euophryinae (Araneae: Salticidae), with consideration of biogeography and genitalic evolution. Ph. D. Thesis, the University of British Columbia, Vancouver. i-xxiv, 1–526.

Appendix 1: Original description of *Jotus auripes* L. Koch 1881

Appendices 1-8 include both the original text of respective descriptions, and a new English translation.

Koch, L. 1881. Die Arachniden Australiens. Nürnberg. 1: 1213–1271 (1243-1245).

Jotus nov. gen.

Cephalothorax quinta parte circiter longior quam latior, antice paullo angustatius quam in medio, postice rotundatus, dorso alto et convexo; clypei altitudine dimidiam diametrum oculorum maximorum non aequanti. Oculorum quadrangulum latius quam longius, antice et postice aequae latus, dimidiam longitudinem cephalothoracis non occupans. Oculi antici approximati, series quam formant leviter sursum curvata. Oculi minuti seriei mediae ab oculis lateralibus seriei primae aequae longe remoti atque ab oculis seriei tertiae. Oculi seriei tertiae inter se ut a margine cephalothorax fere aequae remoti. Sternum leviter convexum, ovatum, multo longius quam latius. Mandibulae breves non divergentes, antice plerumque planae. Maxillae sat longae, antice dilatatae et rotundatae. Labium dimidium maxillarum longitudinem superantes. Pedes longitudine mediocri, aculeati, proport.: 4.3.1.2 vel 4.1.3.2 vel 1.4.3.2. Pedes paris primi ceteris paullo tantum crassiores. Patella cum Tibia III brevior quam Patella cum Tibia IV. Metatarsus et Tarsus quarti paris non longior quam Patella cum Tibia. Abdomen longius quam latius, antice rotundatum, postice acuminatum. Mamillae sat longae, inferiores et superiores aequae crassae et longae.

Jotus auripes n. sp.

Tab. CVII. f. 1. Mas. f. 1a. Mundtheile von unten. f. 1b. Mandibel. f. 1c. Mandibela und vordere Augenreihe. f. 1d. Palpe.

Mas.

Der Cephalothorax schwarzbraun, hinter der Mittelritze ein röthlichbrauner Längsflecken, über dem Seitenrande ein vorn allmählich verschmälertes Längsband weisser Schuppen; die Behaarung des Clypeus und die Cilien um die Augen der vordersten Reihe weiss; der Raum zwischen dem Augenviereck scheint röthlichbraun behaart zu sein. Die Mandibeln schwarz, mit röthlichbraunen Klauen. Maxillen, Lippe und Sternum schwarz, das letztere gelblichweiss behaart. Das Abdomen schwarz, unten und in den Seiten gelblichweiss behaart; oben zwei breite, durch weisse Behaarung gebilte, durchlaufende Längsstreifen, welche einen schwarzen, vorn in den Seiten gerundeten und breiteren, hinten verschmälerten Saum bilden. Das Femoralglied der Palpen schwarz, oben mit einem braungelben, gelblichweiss behaarten Längsflecken, das Patellarglied braungelb; das Tibialglied und die Decke der Kopulationsorgane schwarzbraun, schwarz behaart. Die Schenkel der beiden Vorderbeinpaare hinten und oben schwarz, vorn und unten braungelb und hier lebhaft rothgelb behaart. Die Schenkel der beiden Hinterpaare schwarz, weiss behaart, an der Spitze braungelb, an jenen des dritten Paares vorn ein braungelber Längsstreifen. Die Patellen braungelb, jene der beiden Hinterpaare vorn und hinten mit einem schwarzen Fleckchen. Die Tibien und Metatarsen des ersten und zweiten Paares schwarzbraun; die Tarsen sämtlicher Beine hell-bräunlichgelb. Die Tibien und Metatarsen der beiden Hinterpaare braungelb, schwarz geringelt. Die Spinnwarzen schwarz.

Der Cephalothorax bedeutend länger als Patella und Tibia eines Beines des vierten Paares, um 0_m00075 länger als breit, in den Seiten ganz unbedeutend-, hinten stark gerundet, vom Hinterrande steil ansteigend, oben mit leichter Wölbung nach Vorn geneigt, nach den Seiten senkrecht abfallend, mit anliegenden, haarförmigen Schuppen bedeckt, oben, vorn, in den Seiten unterhalb der Augen mit abstehenden Haaren besetzt. Hinter der dritten Augenreihe ein kleiner, bogenförmiger Eindruck, in diesem die ganz kurze Mittelritze. Das Augenviereck breiter als lang; von Vorn gesehen erscheint es gleichbreit, von Oben betrachtet hinten etwas schmaler als vorn. Die vorderste Augenreihe durch Tieferstehen der MA., jedoch nur wenig gebogen; die Augen dicht beisammen; die MA. dem Kopfrande sehr genähert. Die Augen der zweiten Reihe über der die Centren des vorderen SA. und des Auges der dritten Reihe verbindenden Linie, in der Mitte zwischen beiden. Die Augen der dritten Reihe vom Seitenrande weiter als von einander entfernt, vor der Mitte des Cephalothorax. Die vordere Augenreihe den Clypeus stark überragend. Die Mandibeln senkrecht abfallend, nach Unten verschmälert, vorn nicht gewölbt, fast glanzlos, glatt, mit kurzen, abstehenden Härchen spärlich besetzt. Am vorderen Klauenfalzrande zwei Zähne, am hinteren ein Zahn.

Die Maxillen leicht gewölbt, vorn sowohl aussen als nach Innen gegen die Lippe gerundet. Die Lippe mehr als halb so lang als die Maxillen, vorn sehr verschmälert, mit gerundeten Vorderrande. Das Sternum oval, gewölbt, glänzend, glatt, mit langen, abstehenden Haaren besetzt.

Das Abdomen länglich, so breit als der Cephalothorax, vorn rundlich abgestumpft, in den Seiten gerundet, von der Mitte an nach Hinten spitz zulaufend, mit langen, anliegenden, seidenglänzenden, haarförmigen Schuppen, oben und in den Seiten, unten mit kürzeren, feinen, gewöhnlichen Härchen bedeckt. Bei dem Weibchen, nachdem dasselbe die Eier abgesetzt, ist das Abdomen nach Hinten zu breiter und gerundet.

Das Femoralglied der Palpen kurz, fast gerade, gegen das Ende allmählich verdickt, am Ende oben dicht mit langen Haaren besetzt. Das Patellarglied aussen und innen mit langen, querabstehenden Haaren besetzt; die Tibialtheil länger als das Patellarglied und, wie auch die Decke der Kopulationsorgane mit sehr langen, schwarzen, bis zum Ende gleichdicken, quer abstehenden Haaren aussen und innen dicht bewachsen, oben kürzere, in den Seiten längere, an ihrer etwas breiteren Spitze

feurig roth, goldgelb und grün schillernde haarförmige Schuppen. An dem ende des Tibialgliedes aussen ein schräg auswärts gerichteter, am Ende spitzer, an seinem der Decke der Kopulationsorgane zugekehrten Kante gezahnter Fortsatz. Die Decke der Kopulationsorgane dem Umrisse nach oval, vorn gerade abgetutzt, am Ende kürzer behaart, nur mässig gewölbt.

Die Schenkel der beiden Vorderbeinpaare vorn und unten dicht behaart, jene des dritten und vierten Paares unten spärlicher mit mässig langen, abstehenden Haaren besetzt. Am Ende der Patellen oben ein längeres, abstehendes Haar. Die Tibien des ersten Paares unten sehr dicht-, jene des zweiten etwas lockerer behaart; die Tibien der beiden Hinterpaare nicht in auffallender Weise behaart; ; an allen Tibien oben vor dem Ende ein sehr langes, abstehendes Haar. Die Metatarsen der beiden Vorderpaare unten dichter, als jene des dritten und vierten Paares behaart. Die beiden Vorderbeinpaare etwas dicker, besonders dick erscheinen durch die dichte Behaarung der Unterseite die Tibien des ersten Paares; die Schenkel des ersten und zweiten Paares oben stark gewölbt. Die Tibia des ersten Paares nur wenig länger als die Patella, der Metatarsus kürzer als die Tibia, Metatarsus und Tarsus zusammen kürzer als Patella und Tibia. Patella und Tibia III kürzer als Patella und Tibia IV, Metatarsus und Tarsus IV nicht länger als Patella und Tibia.

Länge des Cephalothorax: 0^m003, des Abdomen: 0^m0025, eines Beines des ersten Paares: 0^m005, des zweiten: 0^m0045, des dritten: 0^m005, des vierten: 0^m0055.

Bestachelung: Femur I oben 1.1.1, vorn 1.1, hinten 1 Ende). Femur II: oben: 1.1.1, vorn und hinten 1.1 (Ende), Femur III und IV wie Femur II bestachelt. Alle Patellen vorn und hinten 1. Tibia I und II: vorn 1.1, hinten 1.1, unten 2.2.2. Tibia III oben 1 (Basis), vorn 1.1.1, unten 1.2. Metatarsus I und II unten 2.2; Metatarsus III und IV: der ganzen Länge nach bestachelt.

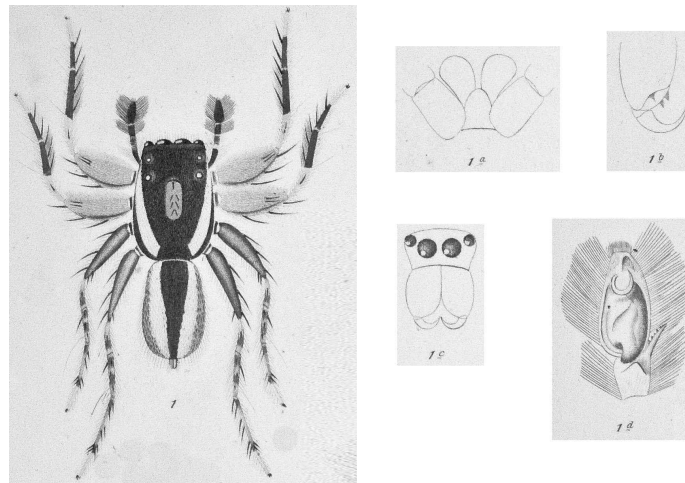
Sydney (Godeffroy Museum).

Jotus, new genus

Prosoma about one fifth longer than wide, slightly narrower in the front than in the middle, the rear rounded, tall and convex at the top; the height of the clypeus not quite equal to half of the diameter of the AME. Ocular quadrangle wider than long, of the same width at front and back, less than half of the length of the prosoma. Anterior eye row slightly curved upwards. Small PME equidistant from ALE and PLE. PLE separation almost as great as the width of the prosoma. Sternum slightly convex, ovate, longer than wide. Short chelicerae not separated, with bases generally flat. Endites long, expanded and round at the front. Labium half the length of the endites. Legs of moderate length, spined, from longest to shortest: 4.3.1.2 or 4.1.3.2 or 1.4.3.2. First legs most developed. Patella + tibia III shorter than patella + tibia IV. Metatarsus + tarsus IV not longer than patella + tibia. Opisthosoma longer than wide, rounded at the front, pointed at the rear. Spinnerets long, upper and lower of equal thickness and length.

Jotus auripes, new species

Plate CVII. fig. 1. Male. fig. 1a. Mouthparts from below. fig. 1b. Chelicera. fig. 1c. Chelicerae and anterior eye row. fig. 1d. Pedipalp.



Male.

The carapace black-brown, behind the central groove a reddish-brown long spot, along the lateral edge a narrow white band of white scales that is gradually tapering towards the anterior; white setae on the clypeus and around the eyes of the first row; the ocular quadrangle appears to be covered with maroon setae. Chelicerae black, with maroon fangs. Endites, labium and sternum black, the latter with yellow-white hairs. The abdomen black, with yellow-white hairs below and laterally; on the dorsum two wide longitudinal stripes comprised of white setae, surrounding a black figure, wider and rounded at the front, and narrower to the rear. Femur of the pedipalp black, above with a yellow brown, yellowish-white haired stripe, the patella yellow-brown; the tibia and the top of the copulation organ dark brown with black hairs. Femora I and II posteriorly and dorsally black, anteriorly and ventrally yellow-brown and here with with vivid orange setation. Femora III and IV black with white setae, yellow-brown at the tip, with a yellow-brown anterior stripe on the femur of leg III. The patellae yellow-brown,

those of the two hindlegs on the front and back with a black spot. Tibiae and metatarsi I and II dark brown; tarsi of all legs light yellow-brown. Tibiae and metatarsi of legs III and IV yellow-brown, with black rings. Spinnerets black.

The prosoma significantly longer than the patella and tibia of leg IV, about 0.75 mm longer than wide, on the sides quite insignificantly rounded, to the rear more strongly rounded, steeply inclining from the rear, on the top with a slight curvature inclined towards the front, the sides perpendicular, covered with hair-like scales above, in front and on the sides beneath the eyes with erect setae. Below the third eye row a small arcuate impression, in this a very short depression. Ocular quadrangle wider than long, when viewed from the front it appears of equal width, when viewed from above it is slightly narrower at the rear than in the front. The anterior row of eyes due to the lower position of the AME slightly curved; eyes close together, AME close to the edge of the carapace. PME centered between the ALE and the PLE. PLE further separated from the carapace edge than from each other, in the front half of the carapace. The anterior eye row stands out above the clypeus. Chelicerae vertically oriented, narrower at the bottom, not curved in front, almost dull, smooth, sparsely covered with short, erect setae. The fang groove has two teeth in front, one in the rear.

The endites slightly curved, anteriorly on the outside and inside rounded against the labium. The labium is more than half as long as the endites, very much narrowed toward the front, with a rounded front margin. The sternum oval, convex, glossy, smooth, covered with long erect setae.

The abdomen oblong, as wide as the prosoma, anteriorly blunted and plump, rounded at the sides, tapered from the middle to the rear, with long, fitting, silky, hair-like scales above and to the sides, venter covered with short, fine, ordinary setae. In the females, after their eggs have been laid (?), the abdomen is wider and rounded at the rear.

The femur of the pedipalp short, almost straight, gradually thickened towards the tip, at the tip covered with long setae on top. The patella covered laterally and medially with long, erect setae; the tibia longer than the patella, like the cover of the copulatory organs densely covered with very long, black erect setae of uniform thickness, along the outside and inside, on top with shorter, on the sides with longer hair-like scales that have slightly wider tips that are fiery red, golden yellow and iridescent green. At the end of the tibia laterally an obliquely outward directed extension, pointed at the end, with a serrated edge facing the top of the copulatory organs. The top of the copulatory organs with an oval outline, cut off at the front, at the end covered with shorter setae, moderately arched.

The femora of legs I and II covered thickly with setae in front and below, those of legs III and IV covered more sparsely with moderately long erect setae. At the end of the patella, dorsally, a longer erect seta. The undersides of the tibiae I thickly covered with setae, those of leg II somewhat less thickly covered; tibiae III and IV not conspicuously covered with setae; on all tibiae above before the end a very long, erect seta. The metatarsi of legs I and II are thicker haired below than those of legs III and IV. Legs I and II somewhat thicker, appearing particularly thick because of the thick covering of setae on the underside of tibiae I; the femora of legs I and II strongly arched dorsally. Tibia I only a little longer than the patella, the metatarsus shorter than the tibia, metatarsus and tarsus together shorter than the patella and tibia. Patella and tibia III shorter than patella and tibia IV, metatarsus and tarsus IV not longer than the patella and tibia.

Length of the prosoma 3 mm, the abdomen 2.5 mm, legs I 5 mm, legs II 4.5 mm, legs III 5 mm, legs IV 5.5 mm.

Spination: Femur I dorsal 1.1.1, anterior 1.1, at the rear 1. Femur II dorsal 1.1.1, anterior and ventral 1.1. Femur III and IV spination as with Femur II. All patellae anterior and posterior 1, tibia I and II anterior 1.1, posterior 1.1, ventral 2.2.2. Tibia III dorsal 1 (base), anterior 1.1.1, ventral 1.2. Metatarsus I and II ventral 2.2; metatarsus III and IV not spined for their entire length.

Sydney (Godeffroy Museum).

Appendix 2: Original description of *Prostheclina pallida* Keyserling 1882

Keyserling, E. 1882. Die Arachniden Australiens. Nürnberg. 1: 1325–1420 (1368–1371).

Prostheclina n. Gen

Cephalothorax quinta parte longior quam latior, antice angustatus, postice paulo latior et rotundatis, aequae latus quam series oculorum posticorum. Clypeus dimidiam radium oculorum maximorum aequans.

Oculorum quadrangulum vix latius quam longius, postice paulo angustatus et medium cephalothoracis paene attingens. Series oculorum anticorum subrecta, oculi inter se approximati. Oculi postici inter se vix longius quam a margine cephalothoracis remoti. Oculi seriei secundae in medio inter oculos laterales anticos et oculos posticos locati.

Mandibulae breves, non divergentes.

Maxillae antice dilatatae et rotundatae.

Labium antice angustatum, dimidiam maxillarum longitudinem aequans.

Sternum ovale et modice convexum.

Abdomen ovatum.

Pedes proport. 4.3.1.2 vel 1.4.3.2. Patella cum tibia III iisdem membris tertii paris aequae longa; Metatarsus cum tarso IV longior quam patella cum tibia IV.

Prostheclina pallida n. sp.

T. 116. fig. 1. femina. fig. 1a. Cephalothorax von der Seite. fig. 1b. Maxillen, Lippe und Sternum. fig. 1c. vordere Augenreihe und Mandibeln. fig. 1d. Epigyne. fig. 2. mas. fig. 2a. Palpe von der Seite. fig. 2b. Palpe von unten.

Femina.

Der Cephalothorax gelb, an der hinteren Abdachung desselben, bisweilen jederseits, einige von den Seiten nach der Mitte zu laufende undeutliche, dunklere Bänder, alle Augen breit schwarz umrandet. Um die Augen herum anliegende, weisse Schüppchen, auf der Kopfplatte einzelne kurze, an der Stirn und zwischen den Augen einzelne längere, schwarze Borstenhärchen. Die Mundtheile, das Sternum, die Palpen und die Beine auch gelb. Der Hinterleib grau, oben auf dem Rücken desselben zwei unregelmässige, aus braunen Stricheln bestehende, wellenförmige Längsbänder, welche vorn einander sehr genähert sind, nach hinten zu sich von einander entfernen und auf der hinteren Hälfte an den Seiten hinablaufen. Hinten in der Mittellinie, über den Spinnwarzen, einige winkelförmige und an den Seiten einzelne zerstreut liegende, dunkle Strichel. Am Bauch bemerkt man hinten, in der Nähe der Spinnwarzen, in der Mitte einen grösseren braunen Fleck, und an jeder Seite desselben einen ebenso gefärbten Strich nebst einzelnen kleinen, dunklen Flecken an den Seiten. So deutlich und markirt ist die Zeichnung des Abdomens nur bei einem der vorliegenden Exemplare, bei den anderen verschwindet sie bis auf geringe Reste.

Der Cephalothorax eben so lang als Femur und Patella IV, etwas mehr als um den fünften Theil länger als breit, vorn an den Seitenaugen nur unbedeutend schmaler als etwas hinter den hintersten Augen, wo er am breitesten ist, hinten wenig verschmälert und gerundet. Vom Hinterrande erhebt er sich ziemlich steil bis ein Stück vor den hintersten Augen, läuft darauf ziemlich horizontal bis vor die kleinen Mittelaugen und senkt sich dann zu den vordersten Augen. Eine feine Mittelritze liegt zwischen und etwas hinter den hintersten Augen. Der nach hinten geneigte Clypeus kaum höher als der halbe Radius eines vorderen Mittelauges.

Das Augenviereck breiter als lang, die beiden hintersten Augen kurz vor der Mitte des Cephalothorax, von einander unbedeutend weiter als vom Seitenrande entfernt. Die vordere Augenreihe gerade und die Augen derselben recht nahe beisammen, die SA. kaum weiter von den MA. als diese von einander. Die beiden vorderen SA. eben so gross als die hintersten und zwischen ihnen, ziemlich in der Mitte, die kleinen Augen der zweiten reihe, welche den letztern vielleicht unbedeutend mehr genähert sind.

Die vorn der Quere nach schwach gewölbten, glänzenden, an einander schliessenden und am Ende schräge abgestutzten Mandibeln ziemlich breit, gegen das Ende hin wenig verschmälert und etwas länger als die vorderen Patellen. Die Endklaue kurz und schwach gekrümmt.

Die in den vorderen Hälfte erweiterten und vorn gerundeten Maxillen doppelt so lang als die eben so lange als breite, nach vorn zu schmaler werdende und am Ende gerade abgestutzte Lippe.

Das ovale, schwach gewölbte Sternum fast doppelt so lang als breit.

Das ziemlich abgeriebene Abdomen, welches auch nur dünn behaart gewesen zu sein scheint, um den fünften Theil länger als breit, vorn gerundet, etwas hinter der Mitte am breitesten und hinten ganz stumpf zugespitzt.

Die dünn behaarten Beine recht kurz, das vierte und dritte Paar das längste, die Schenkel der beiden ersten Paare oben gewölbte und etwas dicker als die anderen. Patella und Tibia III eben so lang als diese Glieder des vierten Paares, Metatarsus und Tarsus IV unbedeutend länger als Patella IV. Die Bestachelung der Beine folgendermassen: Ersten Paar: Femur oben 3, vorn und hinten am Ende 1-2; Patella vorn 1 und oben am Ende eine lange, feine Borste; Tibia unten 2.2.2, vorn 3, hinten 1 und oben 1-2 senkrecht stehende feine Borsten; Metatarsus unten 2.2 und jederseits 2. Zweites Paar: ebenso, hat aber auch hinten an der Patella einen kleinen Stachel. Drittes Paar: Femur oben 3, jederseits am Ende 1-2; Patella jederseits 1, Tibia unten 1.2, jederseits 3 und oben 1; Metatarsus am Anfange und Ende mehre. Das vierte Paar ebenso, nur hat der Metatarsus auch in der Mitte 2.

Totallänge							5,1	Mm.	
Cephalothorax lang							2,3	"	
" in der Mitte breit							1,8	"	
" vorn breit							1,7	"	
Abdomen lang							3,0	"	
" breit							2,4	"	
Mandibeln lang							0,9	"	
		Fem.	Pat.	Tib.	Metat.	Tar.	=	Summa	
1.	Fuss	1,3	0,7	0,8	0,7	0,6	=	4,1	Mm.
2.	"	1,3	0,6	0,7	0,6	0,5	=	3,7	"
3.	"	1,5	0,8	0,8	1,1	0,5	=	4,7	"
4.	"	1,6	0,7	0,9	1,2	0,5	=	4,9	"

Mas.

Der Cephalothorax hinten und an den Seiten gelblichroth, besetzt mit einzelnen kurzen, dunklen Härchen, die Kopfplatte hell gelb, dicht bedeckt mit hell rothen Härchen und einzelnen dunklen Borsten, die Augen breit schwarz umrandet, die der vordersten Reihe eingefasst mit kurzen, weissen und am Clypeus lange, rothe Härchen. Die Mundtheile, das Sternum, die Palpen und die Beine gelb, dünn dunkel behaart, nur die Metatarsen des ersten Fusspaares recht dicht und lang. Das Abdomen rosa mit mehreren undeutlichen, an den Seiten schräge nach vorn ansteigenden, braunen Bändern. Die Gestalt des Cephalothorax, der Mundtheile und die Stellung der Augen ebenso wie bei dem Weibe. Das erste Beinpaar bedeutend länger, aber nur wenig dicker als die übrigen.

Der Tibialtheil der Palpen, eben so lang als der Patellartheil, hat vorn an der Aussenseite einen kurzen, spitzen Fortsatz. Das Copulationsorgan ragt hinten fast bis an die Basis des Tibialtheils und ist vorn mit einem kreisrunden, mit der kurzen Spitze nach vorn ragenden Fortsatz versehen.

Totallänge								4,4	Mm.
Cephalothorax lang								2,3	"
" in der Mitte breit								1,7	"
" vorn breit								1,6	"
Abdomen lang								2,1	"
Abdomen breit								1,4	"
Mandibeln lang								0,9	"
		Fem.	Pat.	Tib.	Metat.	Tar.		Summa	
1.	Fuss	1,7	0,9	1,2	1,3	0,7	=	5,8	Mm.
2.	"	1,3	0,7	0,7	0,8	0,5	=	4,0	"
3.	"	1,4	0,8	0,8	1,1	0,5	=	4,6	"
4.	"	1,4	0,7	0,9	1,2	0,5	=	4,7	"

Sidney, Peak downs, Museum Godeffroy. Herr Daemel schöpfte diese Art in einer sumpfigen Gegend und fing sie auch auf Laub. In der Sammlung des Mr. Bradley befindet sich ein Exemplar vom Cap York.

Prostheclina, new genus

Cephalothorax one-fifth longer than wide, narrowing anteriorly, posterior slightly wider and rounded, as wide as the posterior eye row. Clypeus equal to AME diameter.

Quadrangle of the eyes scarcely wider than long, narrowing slightly to the rear and almost reaching the middle of the cephalothorax. Anterior eye row straight, eyes close to each other. Distance between the posterior eyes scarcely longer than distant from the margin of the cephalothorax. Eyes of the second row located midway between the anterior lateral and posterior eyes.

Chelicerae short, not diverging.

Endites dilated and round at the front.

Labium narrowing anteriorly, length equal to the diameter of the endite.

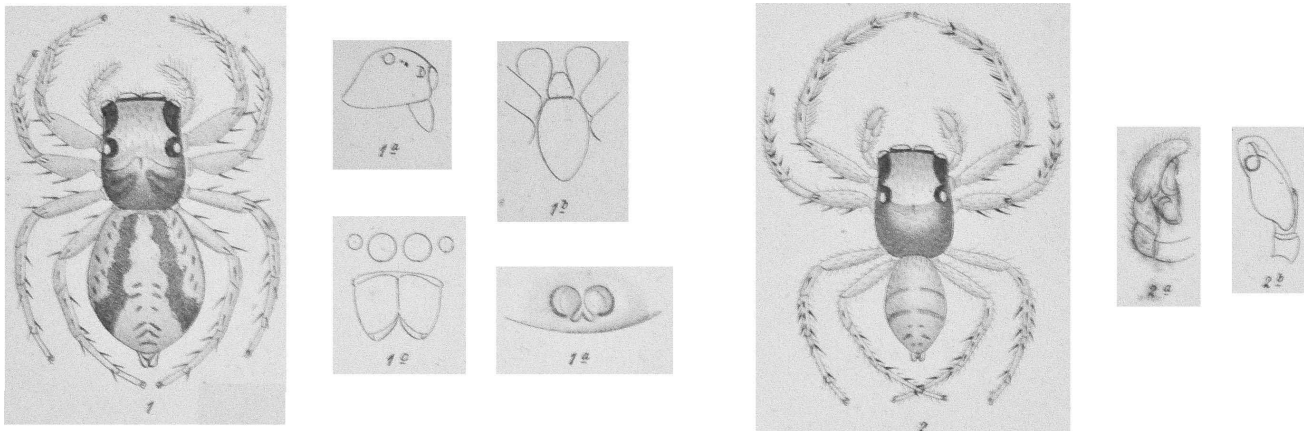
Sternum oval and moderately convex.

Abdomen ovate.

Legs in order of greatest length 4.3.1.2 or 1.4.3.2. Patella with tibia III equally long as the same members of the third [fourth?] part; metatarsus and tarsus IV longer than patella and tibia

Prostheclina pallida, new species

Plate 116. fig. 1. Female. fig. 1a. Cephalothorax from the side. fig. 1b. Endites, labium and sternum. fig. 1c. Anterior eye row and chelicerae. fig. 1d. Epigynum. fig. 2. Male. fig. 2a. Pedipalp from the side. fig. 2b. Pedipalp from below.



Female.

The cephalothorax yellow, on the rear slope of which, sometimes on each side, are several indistinct darker bands running from the sides to the center, all eyes with a wide black border. Situated around the eyes white scales, on the head short black bristles, and some long black bristles on the forehead and between the eyes. The mouthparts, the sternum, the pedipalps and the legs also yellow. The abdomen gray, the dorsum with two irregular undulating longitudinal bands consisting of brown spots which are much closer to each other anteriorly, moving away from each other to the rear and running along the sides for the rear half. At the rear midline, above the spinnerets, some angular dark marks scattered on the sides. At the rear venter of the abdomen, near the spinnerets, is a large brown spot in the middle, and on each side of this a similarly coloured bar along with a few small, dark spots on the sides. So evident and marked is the appearance of the abdomen on only one of our specimens, and these marks have disappeared until little remains on the others.

The cephalothorax just as long as femur and patella IV, somewhat more than a fifth part longer than wide, the front at the ALE only insignificantly narrower than at somewhat behind the rear eyes, where it is widest, to the rear narrowing a little and rounded. From the rear margin it rises steeply to a place in front of the rear eyes, then runs quite horizontally to the small PME and the descends to the anterior eyes. A fine center crack lies between and slightly behind the posterior eyes. The clypeus, inclined to the rear, is little higher than half the radius of an AME.

The eye quadrangle is wider than long, the PLE just before the middle of the cephalothorax, the distance between them insignificantly greater than their distance from the margin of the carapace. The anterior eye row is straight and its eyes quite close together, the ALE a little further from the AME than these from each other. The ALE just as large as the PLE and between them apparently in the middle, are the small eyes of the second row, which are perhaps slightly closer to the PLE.

Mandibles, inclined to interfere slightly, the front slightly curved, shiny, close together, truncated at the end and quite wide, slightly narrowed distally, are slightly longer than patellae. The fang is short and weak.

Endites wider in the front half and rounded at the front, twice as long as the labium, which is just as long as wide, becoming narrower toward the front, and truncate at the end.

The oval, weakly curved sternum almost twice as long as wide.

The rather worn abdomen, which also appears to be covered only sparsely with hairs, is about a fifth part longer than wide, rounded at the front, widest somewhat behind the middle and the rear bluntly pointed.

The thinly haired legs rather short, the fourth and third pairs the longest, the femur of both first pairs curved above and somewhat thicker than the others. Patella and tibia III just as long as these parts of the fourth pair, metatarsus and tarsus IV insignificantly longer than patella IV. The spination of the legs is as follows: First pair: femur above 3, front and rear at the end 1-2; patella front 1 and above at the end a long, fine bristle; tibia below 2.2.2, front 3, rear 1 and above 1-2 erect fine bristles; metatarsus below 2.2 and on each side 2. Second pair: the same, but also has below on the patella a small spine. Third pair: femur above 3, on each side at the end 1-2; patella on each side 1, tibia below 1.2, on each side 3 and above 1; metatarsus at the beginning and end more. The fourth pair the same, but the metatarsus has also 2 in the middle.

Total length							5.1	mm	
Cephalothorax length							2.3	"	
" width in the middle							1.8	"	
" width at front							1.7	"	
Abdomen length							3.0	"	
" width							2.4	"	
Chelicerae length							0.9	"	
		Femur	Patella	Tibia	Metatarsus	Tarsus		Total	
1.	foot	1.3	0.7	0.8	0.7	0.6	=	4.1	mm
2.	"	1.3	0.6	0.7	0.6	0.5	=	3.7	"
3.	"	1.5	0.8	0.8	1.1	0.5	=	4.7	"
4.	"	1.6	0.7	0.9	1.2	0.5	=	4.9	"

Male.

The cephalothorax at the rear and on the sides yellowish red, covered with isolated short, dark hairs, the head light yellow, thickly covered with light red hairs and isolated dark hairs, the eyes surrounded by a broad black border, those of the front row framed with short white hairs and on the clypeus long red hairs. The mouthparts, the sternum, the pedipalps and the legs yellow, sparsely dark haired, only the metatarsi of legs I with rather thick and long hairs. The abdomen pink with several indistinct brown bands, oblique on the sides and rising to the front. The appearance of the cephalothorax, the mouthparts and the placement of the eyes the same as in the female. Legs I significantly longer, but only a little thicker than the others.

The tibia of the pedipalp, just as long as the patella, has at the front laterally a short pointed projection. The copulation organ extends almost to the base of the tibia and at the front is provided with a circular extension, with a short forward-projecting tip.

Total length							4.4	mm
Cephalothorax length							2.3	"
" width in the middle							1.7	"
" width at front							1.6	"
Abdomen length							2.1	"
" width							1.4	"
Chelicerae length							0.9	"
		Femur	Patella	Tibia	Metatarsus	Tarsus		Total
1.	leg	1.7	0.9	1.2	1.3	0.7	=	5.8 mm
2.	"	1.3	0.7	0.7	0.8	0.5	=	4.0 "
3.	"	1.4	0.8	0.8	1.1	0.5	=	4.6 "
4.	"	1.4	0.7	0.9	1.2	0.5	=	4.7 "

Sydney, Peak Downs, Museum Godeffroy. Mr. Daemel found these in a marshy area and caught them on leaves. A specimen from Cape York is in the collection of Mr. Bradley.

Appendix 3: Original description of *Acmaea villosa* Keyserling

Keyserling, E. 1883. Die Arachniden Australiens. Nürnberg. 1: 1421–1489 (1421–1422).

This spider was renamed *Drepanephora villosa* on page 1477, and later (Peckham & Peckham 1885) transferred to a new genus, *Hypoblemum*, as *Hypoblemum villosum*. It is the type species for that genus, but the type specimen was apparently lost (Žabka, & Pollard 2002), and at present no other specimen that matches this description has been found.

Acmaea villosa n. sp.

Tab.120. fig. 3. mas. fig. 3a. Cephalothorax von der Seite. fig. 3b. vordere Augenreihe. fig. 3c. Maxillien und Lippe. fig. 3d. Palpe.

Mas.								
Totallänge							7,2	Mm.
Cephalothorax lang							3,2	"
" in der Mitte breit							2,3	"
" vorn breit							1,7	"
Abdomen lang							4,0	"
" breit							2,0	"
Mandibeln lang							1,1	"
		Fem.	Pat.	Tib.	Metat.	Tar.		Summa
1.	Fuss	1,7	1,0	1,0	1,0	0,6	=	5,3 Mm.
2.	"	1,7	1,0	1,0	1,0	0,6	=	5,3 "
3.	"	2,3	1,2	1,5	1,8	0,8	=	7,6 "
4.	"	2,0	1,0	1,2	1,4	0,8	=	6,4 "

Der Cephalothorax rothbraun, hinten und an den Seiten dunkler, bedeckt mit gelblich weissen Härchen, die Kopfplatte schwarzbraun und dicht mit goldgelben Schuppen bekleidet, zwischen denen einzelne längere, dunkle Borstenhärchen sitzen. Um die vorderen Augen, an der Stirn und an den rothbraunen Mandibeln auch lange Härchen. Die Lippe braun, die Maxillen heller rothbraun, beide am Ende heller, das braun gerandete Sternum gelb. Die Coxen, Trochanter und Tarsen der recht lang und dicht behaarten Beine gelb, die übrigen Glieder rothbraun, die Schenkel oben am dunkelsten, unten aber gelb, die gleichfalls lang behaarten Palpen auch gelb und nur das Endglied derselben rothbraun. Das Abdomen graubraun, oben etwas dunkler als unten, ganz bedeckt mit goldgelben Schuppen und langen, abstehenden, weissen Härchen; am Bauche, vor der Falte, ein viereckiger gelber Fleck. Die Spinnwarzen braun und auch recht dicht behaart.

Der Cephalothorax etwas länger als Femur und Patella IV, mehr als um den vierten Theil länger als breit, in den Seiten leicht gerundet, in der hinteren Hälfte am breitesten, nach vorn zu verschmälert, hinten gerundet, in der Mitte des Hinterrandes ausgeschnitten, in der Gegend der hintersten Augenreihe sichtlich breiter als diese. Vom Hinterrande erhebt sich der mässig hohe Cephalothorax ziemlich steil, bleibt bis zu der dritten Augenreihe gleich hoch und neigt sich dann mit sanfter Wölbung zu der vordersten Reihe. Etwas hinter den beiden hintersten augen befindet sich ein bogenförmiger Eindruck und in dessen Mitte die kleine Mittelritze. Der Clypeus sehr niedrig, höchstens gleich dem achten Theil des Durchmessers eines vorderen Mittelauges.

Das Augenviereck, breiter als lang, hinten ein wenig schmaler als vorn, liegt ziemlich weit von der Mitte des Cephalothorax. Die beiden ganz kleinen Augen der zweiten Reihe befinden sich nicht ganz in der Mitte zwischen den vorderen

Seitenaugen und denen der hintersten Reihe, sondern den letzteren ein wenig mehr genähert. Die vordere Augenreihe ziemlich stark gebogen und die Seitenaugen fast um ihren Radius von den Mittelaugen entfernt. Die beiden hintersten Augen, eben so gross als die vorderen Seitenaugen, liegen von einander weiter als vom Seitenrande entfernt.

Die vorn unbedeutend gewölbten Mandibeln, kürzer als die Patellen und weit schmaler als die Schenkel des ersten Beinpaares, sind in ihrer ganzen Länge gleich breit, am Ende schräge abgestutzt und divergiren unbedeutend. Die Endklaue kurz, kräftig und ziemlich stark gekrümmt. Der Falz, in den sich die Klaue legt, hat vorn am Ende einen kurzen, breiten, hinten an der Basis der Klaue einen grösseren und am Ende einen ganz kleinen Zahn.

Die vorn erweiterten, am Ende gerundeten, und aussen am Ende mit einer vorspringenden Ecke versehenen Maxillen fast doppelt so lang als die etwas breitere als lange, vorn verschmälert und am Ende gerundete Lippe. Das recht gewölbte, nach hinten zu etwas breiter werdende Sternum um den dritten Theil länger als breit.

Der Tibialtheil der Palpen nicht länger als breit, eben so lang als der Patellartheil, hat aussen am Ende einen kurzen, nach vorn gerichteten Dorn. Das längliche, gewölbte Copulationsorgan reicht hinten mit einer schmalen, am Ende gerundeten Verlängerung bis zu der Basis des Tibialtheils und ist vorn mit einem dünnen, kreisförmig gewundenen Fortsatz versehen.

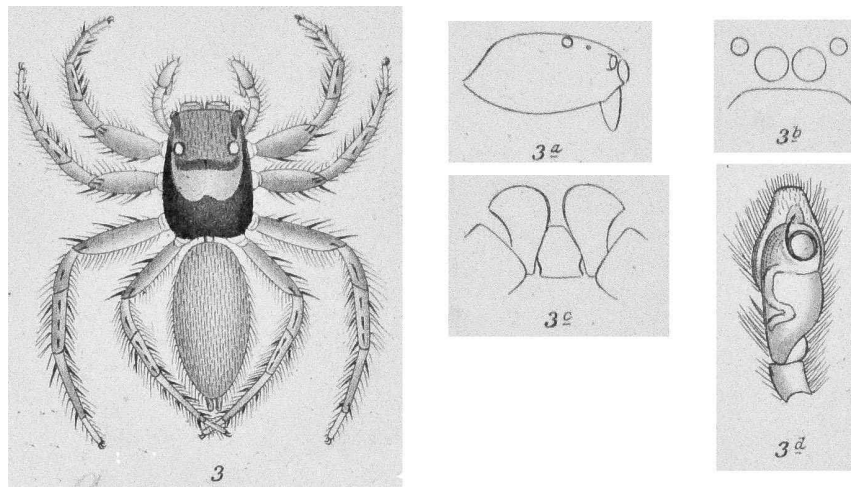
Das vorn gerundete, hinten zugespitzte Abdomen doppelt so lang als breit, die mässig langen Spinnwarzen ziemlich gleich lang.

Das dritte Beinpaar das längste und weit dicker als das vierte, die Schenkel der beiden gleichlangen vordersten oben stark gewölbt, aber nicht dicker als die des dritten. Patella und Tibia III beträchtlich länger als diese Glieder des vierten Paares; Metatarsus und Tarsus IV eben so lang als Patella und Tibia IV. Die Bestachelung der einzelnen Beinpaare ist folgende: Erstes und zweites Paar: Femur oben 1.1.1, vorn und hinten am Ende 1.2; Patella keine; Tibia unten 2.2.2 und vorn 1.1; Metatarsus am Anfange 2, am Ende 4. Drittes und viertes Paar: Femur ebenso; Patella vorn und hinten 1; Tibia unten 2.2, jederseits 3 und oben am Anfange 1; Metatarsus am Anfange und Ende mehrere unregelmässig sitzende.

Sydney. In der Sammlung des Mr. Bradley.

Acmaea villosa, new species

Plate 120, fig. 3. Male, fig. 3a, prosoma from the side, fig. 3b, anterior eye row, fig. 3c, endites and labium, fig. 3d, pedipalp.



Male									
Total length								7.2	mm
Prosoma length								3.2	mm
Prosoma width in the middle								2.3	mm
Prosoma width at front								1.7	mm
Abdomen length								4.0	mm
Abdomen width								2.0	mm
Chelicera length								1.1	mm
		Fem.	Pat.	Tib.	Metat.	Tar.		Total	
1.	leg	1.7	1.0	1.0	1.0	0.6	=	5.3	mm
2.	leg	1.7	1.0	1.0	1.0	0.6	=	5.3	mm
3.	leg	2.3	1.2	1.5	1.8	0.8	=	7.6	mm
4.	leg	2.0	1.0	1.2	1.4	0.8	=	6.4	mm

Cephalothorax red-brown, darker at the rear and at the sides, covered with yellow-white hairs, the head dark brown and thickly covered with yellow-gold scales, within which are situated isolated long, dark hairs. Also long hairs near the front eyes, on the front of the head, and on the red-brown chelicerae. Labium brown, the endites lighter red-brown, both lighter distally, the brown-rimmed sternum yellow. The coxa, trochanter and tarsi of the rather long and thickly haired legs yellow, the

remaining parts red-brown, the dorsal femur the darkest, however yellow below, the similarly long-haired pedipalps also yellow with only the distal part red-brown. The abdomen grey-brown, above somewhat darker than below, entirely clothed in yellow-gold scales and long, erect white hairs; on the underside, in front of the fold, a square yellow spot. The spinnerets brown and also rather thickly haired.

The cephalothorax somewhat longer than femur and patella IV, more than one-fourth longer than wide, slightly rounded laterally, widest in the rear half, narrowed to the front, rounded at the rear, notched in the middle of the rear margin, clearly wider at the PLE. From the posterior margin the moderately high cephalothorax rises steeply, remaining at the same height up to the third eye row and then tilting gradually, arching to anterior eye row. Somewhat behind the PLE is an arcuate impression and in the middle of that a small central crack. Clypeus very low, at most equal to one-eighth the diameter of an AME.

The ocular quadrangle, wider than long, a little narrower at the rear than at the front, placed rather far from the middle of the cephalothorax. Both PME are situated not quite in-between the ALE and PLE, but a little closer to the PLE. The anterior eye row is strongly bent and the ALE are separated almost by their radius from the AME. The PLE, as large as the ALE, are further separated from each other than from the lateral margin of the carapace.

The chelicerae, insignificantly arched in front, shorter than the patella and much narrower than the femur of leg I, are of equal width for their entire length, distally oblique and truncated and insignificantly separated. The fang short, strongly curved and quite strong. The groove, in which the fang lies, has in front at the end a short and wide tooth, in back at the base of the fang a larger tooth and at the end a very small tooth.

The endite, wider in the front, rounded distally, distal-laterally with a projecting angle, is almost twice as long as the long, narrowed at the front, and rounded distally labium. The rather arched, somewhat wider to the rear sternum is about one-third longer than wide.

The tibia of the pedipalp is not longer than wide, about as long as the patella, and also has at the end a short spine directed toward the front. The elongated, curved copulation organ extends to the rear with a narrow extension that is rounded at the end up to the base of the tibia, and bears in front a thin, circular coil.

The abdomen, rounded in front and pointed in back, is twice as long as wide, the moderately long spinnerets of nearly uniform length.

Legs III the longest and much thicker than legs I, the femur of legs I and II the same length and strongly curved above, but not thicker than femur III. Patella and tibia III considerably longer than patella and tibia IV; metatarsus and tarsus IV just as long as patella and tibia IV. the spination of each leg pair is as follows: first and second pair, femur above 1.1.1, anterior and rear at the end 1.2, patella none, tibia below 2.2.2 and rear 1.1, tibia metatarsus proximally 2, distally 4. Third and fourth pair: femur the same, patella front and rear 1, tibia below 2.2, each side 3 and above proximally 1, several irregular spines at the proximal and distal metatarsus.

Sydney. In the collection of Mr. Bradley.

Some differences between the published description of *Acmaea villosa* and a single specimen labeled *Acmaea villosa/Hypoblemum villosum* in the Peckham collection are listed here. Because of the age of this specimen, no attempt has been made to evaluate its setation or pigmentation, which definitely does not agree with the published description by Keyserling.

<i>Acmaea villosa</i> Keyserling 1882 male	<i>Hypoblemum villosum</i> (MCZ 127694) male
cephalothorax more than 1/4 longer than wide	cephalothorax about 1/2 longer than wide
cephalothorax rounded at the rear	cephalothorax almost straight at the rear
cephalothorax notched at rear margin	cephalothorax not notched at rear margin
clypeus very low, at most 1/8 the diameter of the AME	clypeus at least 1/4 the diameter of the AME
anterior eye row strongly bent; figure shows center of ALE at level of top of AME	anterior eye row not strongly bent; top of ALE at about the same level as the top of the AME
ALE separated from AME almost by their radius	ALE separated from AME by about 1/2 of their radius
chelicera insignificantly arched in front	chelicera strongly arched in front
chelicera shorter than patella of leg I	chelicera much longer than patella of leg I
chelicera narrower than femur of leg I	chelicera about same width as femur of leg I
chelicera base of equal width for its entire length	chelicera base much wider proximally than distally
chelicera distally oblique and truncated	distal margin of chelicera not noticeably oblique
short and wide tooth at front of fang groove	large (long and wide) triangular, pointed tooth at front of fang groove
a larger posterior tooth at the base of the fang and a very small tooth at the end of the fang	a single large, blunt tooth or process at the position of the middle of the fang; the fang itself extends well beyond the fang groove
sternum about 1/3 longer than wide	sternum about 1/2 longer than wide
sternum somewhat wider to the rear	sternum much wider to the rear
tibia of the pedipalp about as long as the patella	tibia of the pedipalp much shorter than the patella
abdomen pointed in back	abdomen rounded or nearly straight in back

Appendix 4: Original description of *Habrocestum albovittatum* Keyserling 1882

Keyserling, E. 1882. Die Arachniden Australiens. Nürnberg. 1: 1325–1420 (1407–1409).

Peak Downs, where this single male specimen was apparently found, is located in Queensland. The Museum Godeffroy in Hamburg, Germany, no longer exists, but this specimen may have been transferred to the Zoological Institute in that city. Žabka & Pollard (2002) stated that they reviewed the type specimen when they placed this spider in *Hypoblemum* Peckham & Peckham 1896. As will be shown below, their description does agree with specimens bearing this name in the Peckham Collection at the MCZ, but it does not agree with the original description of a spider that does not have elongated legs III.

Habrocestum albovittatum n. sp.

T. 119. fig. 3. mas. fig. 3a. Cephalothorax von der Seite. fig. 3b. vordere Augenreihe. fig. 3c. Palpe von der Seite. fig. 3d. Palpe von unten.

Mas.										
Totallänge									5,6	Mm.
Cephalothorax lang									3,0	"
" in der Mitte breit									2,1	"
" vorn breit									1,9	"
Abdomen lang									2,6	"
" breit									2,0	"
Mandibeln lang									1,0	"
		Fem.	Pat.	Tib.	Metat.	Tar.		Summa		
1.	Fuss	2,0	1,2	1,5	1,3	0,7	=	6,7	Mm.	
2.	"	1,5	1,1	1,0	0,8	0,6	=	5,0	"	
3.	"	1,9	1,2	1,0	1,1	0,7	=	5,9	"	
4.	"	1,8	0,9	1,0	1,1	0,7	=	5,5	"	

Der Cephalothorax dunkel rothbraun, in der Mitte zwischen den hintersten Augen und dem Hinterrande liegt ein viertelmondförmiges, weisses Band, welches in der Mitte unterbrochen ist und an den Seiten spitz auslaufend, sich noch ein Stück unterhalb der Augen der hintersten Reihe fortsetzt. Die fast schwarze Kopfplatte ist mit kurzen gelben Schuppen besetzt und die Augen der vorderen Reihe sind mit längeren weissen Härchen eingefasst, zwischen denen, sowie vorn an den Seiten, lange dunkle Borstenhaare stehen. Die gleichfalls lang dunkel behaarten Mandibeln, die Maxillen, die Lippe, das Sternum ganz dunkel rothbraun, die übrigen Glieder nur unten so gefärbt, sonst heller, die der beiden ersten Paare dunkler als die der hinteren. Die Schenkel und das Endglied der Palpen rothbraun, die Patella und Tibia gelb, alle, besonders oben, dicht mit langen weissen Härchen bedeckt. Die Beine auch recht dicht bekleidet mit anliegenden weissen und abstehenden dunklen Härchen. Das grau braune Abdomen dicht bedeckt mit weissen, röthlichen und ziemlich langen schwarzen Härchen. Eine bestimmte Zeichnung desselben lässt sich bei dem vorliegenden, etwas verletzten Exemplare nicht erkennen. Der Bauch schmutzig gelb, überstreut mit kleinen schwärzlichen Flecken und jederseits mit zwei Längsbändern eingefasst, die aus ebensolchen, aber dichter stehenden, Flecken gebildet werden.

Der Cephalothorax ziemlich hoch, etwas kürzer als Femur und Patella I, fast um den dritten Theil länger als breit, in den Seiten ziemlich gerade, nur ganz unbedeutend gerundet, an der breitesten Stelle nur wenig breiter als an den vordersten Seitenaugen, and der hintersten Augenreihe auch nur sehr wenig breiter als diese, hinten etwas verschmälert und gerundet, vom Hinterrande recht steil ansteigend, dann nach vorn zu leicht gewölbt und sanft abfallend, kurz vor der vordersten Augen ziemlich stark nach vorn geneigt. Die kurze Mittelritze liegt in einer kleinen, rundlichen Vertiefung zwischen den beiden hintersten Augen. Der Clypeus reichlich so hoch als der Halbmesser eines vorderen Mittelauges.

Das Augenviereck breiter als lang, vor der Mitte des Cephalothorax und hinten ebenso breit als vorn. Die vordere Augenreihe nur wenig gebogen, die Seitenaugen derselben nicht ganz um ihren Radius von den nicht dicht beisammen Regenden Mittelaugen getrennt. Die Augen der hintersten Reihe, ebenso gross als die vorderen Seitenaugen, liegen von einander weiter als vom Seitenrande entfernt. Die ganz kleinen augen der zweiten Reihe befinden sich in der Mitte zwischen den vorderen SA und den Augen der hintersten Reihe und zwar in gleicher Höhe mit dem unteren Rande der letzteren.

Die vorn nur unbedeutend gewölbten, an der Innenseite dicht an einander schliessenden und am Ende schräge abgestutzten Mandibeln etwas kürzer und kaum so dick als die Patellen des ersten Beinpaars.

Die vorn erweiterten und am Ende gerundeten Maxillen doppelt so lang als die ebenso lange als breite, vorn schmaler werdende und am Ende gerade abgestutzte Lippe. Das schmale und ziemlich gewölbte Sternum fast doppelt so lang als breit.

Der Tibialtheil der Palpen, nicht länger als breit und ebenso lang als der Patellartheil, hat aussen am Ende einen kurzen, spitzen, nach vorn gerichteten Fortsatz. Das grosse, gewölbte Copulationsorgan ragt hinten fast bis an die Basis des Tibialtheils und hat vorne einen kleinen kreisförmigen, mit kurzer Spitze nach vorn gerichteten Fortsatz. Der Schnabel der Decke des Endgliedes überragt das Copulationsorgan ziemlich weit.

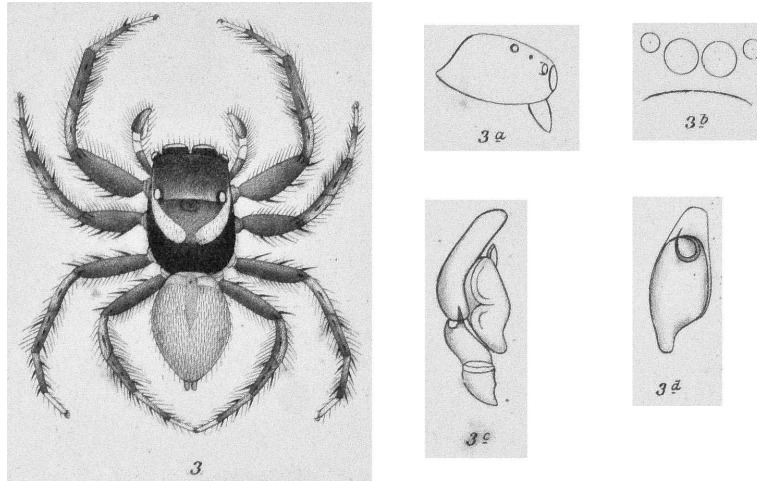
Die beiden vorderen Beinpaare etwas dicker und das erste auch länger als die übrigen. Das dritte Paar auch länger als das vierte. Patella und Tibia III sichtlich länger als diese Glieder des vierten Paares; Metatarsus und Tarsus unbedeutend länger als Patella und Tibia IV. Die Bestachelung der Beine folgendermassen: Erstes und zweites Paar: Femur oben 1.1.1, vorn am Ende 2, hinten 1; Patella vorn 1; Tibia unten 2.2, vorn 2; Metatarsus am Anfange 2 und am Ende 4. Drittes und viertes Paar: Femur ebenso; Patella vorn und hinten 1; Tibia unten 1.2, vorn und hinten 3, oben am Anfang 1; der Metatarsus in seiner Länge mit unregelmässigen versehen.

Das Abdomen kaum mehr als um den fünften Theil länger als breit, vorn ziemlich schmal und gerade, in der Mitte am breitesten und hinten stumpf zugespitzt. Die Spinnwarzen kurz und das obere Paar unbedeutend länger als das untere.

Peack Downs. Museum Godeffroy.

Habrocestum albovittatum. new species

Plate 119. fig. 3. male. fig. 3a. Cephalothorax from the side. fig. 3b. anterior eye row. fig. 3c. pedipalp from the side. fig. 3d. pedipalp from below.



Male									
Total length								5.6	mm
Prosoma length								3.0	mm
Prosoma width in the middle								2.1	mm
Prosoma width at front								1.9	mm
Abdomen length								2.6	mm
Abdomen width								2.0	mm
Chelicera length								1.0	mm
		Fem.	Pat.	Tib.	Metat.	Tar.		Total	
1.	leg	2.0	1.2	1.5	1.3	0.7	=	6.7	mm
2.	leg	1.5	1.1	1.0	0.8	0.6	=	5.0	mm
3.	leg	1.9	1.2	1.0	1.1	0.7	=	5.9	mm
4.	leg	1.8	0.9	1.0	1.1	0.7	=	5.5	mm

The cephalothorax dark red-brown, in the middle between the rear eyes and the rear margin lies a quarter moon-shaped, white band, which is interrupted in the middle and tapers to a point on the sides, continuing a little behind the rear row of eyes. The almost black head is covered with short yellow scales and the eyes of the anterior row are surrounded by long white hairs, between which, as at the sides in front, there are large dark bristles. The equally long dark haired chelicerae, the endites, the labium, and the sternum entirely dark red-brown, the remaining appendages only so coloured below, otherwise brighter, but darker for legs I and II than for legs III and IV. The femur and the distal part of the pedipalp red-brown, the patella and tibia yellow, all, especially above, thickly covered with long white hairs. The legs also rather thickly clothed with lying-down white and erect dark hairs. The grey brown abdomen thickly covered with white, reddish and rather long black hairs. Some of this appearance shown in the drawings cannot be seen in the damaged specimens. The belly dirty yellow, strewn with small blackish spots and bordered on each side with two longitudinal bands, formed of the same, but denser, spots.

The cephalothorax rather high, somewhat shorter than the femur and patella I, almost one-third longer than wide, with rather straight sides, insignificantly rounded, at the widest place only a little wider than at the ALE row, and the rear eye row also only a little wider than this, to the rear tapering somewhat and rounded, rising steeply from the rear margin, then slightly curved and gently sloping, shortly before the anterior eye row strongly inclined forward. At the center between the PLE is a small round indentation. The clypeus quite as high as half of the diameter of an AME.

The ocular quadrangle wider than long, at the middle of the cephalothorax and at the rear just as wide as at the front. The anterior eye row is only a little curved, the ALE separated by less than their radius from the not closely placed AME. The PLE,

just as large as the ALE, are further separated from each other than from the lateral margin of the carapace. The PME are located in the middle between the ALE and the PLE, at the same level as the lower edge of the PLE.

Only insignificantly curved at front, tightly bound to each other medially, and distally obliquely truncated chelicerae somewhat shorter and scarcely as thick as the patella of leg I.

The wider at front and distally rounded endites are twice as long as the labium, which is just as long as wide, narrower at front, and truncated distally. The narrow and rather arched sternum almost twice as long as wide.

The tibia of the pedipalp, not longer than wide and just as long as the patella, has also at the end a short, pointed projection directed toward the front. The large, arched copulation organ extends out almost to the base of the tibia and has anteriorly a small circular projection with a short point directed toward the front. The terminal projection extends rather far beyond the copulation organ.

Legs I and II somewhat thicker and the first is longer than the rest. The third pair is also longer than the fourth. Patella and tibia III visibly longer than these parts of the fourth legs; metatarsus and tarsus insignificantly longer than patella and tibia IV. Spination of the legs as follows: Legs I and II, femur above 1.1.1, anterior at end 2, rear 1; patella at front 1; tibia below 2.2, at front 2; metatarsus proximally 2 and distally 4. Legs III and IV, femur the same; patella front and back 1; tibia below 1.2, front and rear 3, proximally above 1; the metatarsus appears irregular for its length.

The abdomen scarcely more than a fifth part longer than wide, at the front rather narrow and straight, in the middle the widest and at the rear pointed. The spinnerets short and the upper pair insignificantly longer than the under pair.

Peack Downs [Peak Downs?]. Museum Godeffroy.

Some discrepancies between the original description of *Habrocestum albovittatum* by Keyserling (1882) and the description of *Hypoblemum albovittatum* by Zabka & Pollard (2002), as well as the 7 male specimens labeled with this name in the Peckham collection at the MCZ are listed in the following table:

<i>Habrocestum albovittatum</i> Keyserling 1882	<i>Hypoblemum albovittatum</i> sensu Zabka & Pollard 2002*
quarter moon shaped white band to the side and below each PLE	no such band of scales, except in female
cephalothorax rather high	cephalothorax of average height in proportion to length and width
cephalothorax shorter than femur + patella I	cephalothorax at least as long as femur + patella I
cephalothorax almost 1/3 longer than wide	cephalothorax about 1/2 longer than wide
chelicerae insignificantly curved in front	chelicerae strongly curved in front
chelicerae tightly bound together medially	distally chelicerae are separated by a gap
chelicerae obliquely truncated at distal end	chelicerae not truncated, but rounded medially and laterally at distal end
tibia of pedipalp just as long as patella	tibia of pedipalp distinctly shorter than patella
terminal projection (embolus) extends far beyond the copulation organ	embolus not more than average length
legs I and II thicker than the other legs	legs I and II not thicker than the other legs
leg I longer than the rest	leg III much the longest, longer than leg I
abdomen scarcely more than a fifth part longer than wide	abdomen at least a half part longer than wide
spinnerets short	spinnerets about average length
upper spinnerets significantly longer than lower spinnerets	all spinnerets about the same length
*This published description conforms with 7 male specimens labeled <i>Hypoblemum albovittatum</i> in the Peckham collection at the MCZ (MCZ 126797). The epigynum of 2 female specimens (MCZ 126798) from that collection are also similar to the female described by Zabka and Pollard (2002), although the proportionate size of the spermathecae is smaller than any of the variants depicted by them.	

Another single male specimen in the MCZ (MCZ 127694) labeled *Acmaea/Hypoblemum villosum* does not fit the published description of *Acmaea villosa* Keyserling 1882, and its pedipalp, although somewhat dissected, is virtually identical to that of *Hypoblemum albovittatum* sensu Zabka & Pollard 2002. This includes the presence of small teeth on the distal side of the RTA, which cannot be seen in many views and is probably found in many other euophryines where it has not been observed. These teeth do not constitute ornamentation, and probably play a role in securing the pedipalp during mating. There are some differences between this specimen and specimens in MCZ 126767, however, and these are outlined in the following table:

<i>Hypoblemum albovittatum</i> (MCZ 126767) male	<i>Hypoblemum villosum</i> (MCZ 127694) male
fang can be retracted almost completely behind rounded flap or process at anterior margin of fang groove	fang remains visible behind large, pointed, triangular tooth or process at anterior margin of fang groove
fang articulates well inside lateral margin of chelicera and base can be concealed when flexed	fang articulates at the lateral margin of the chelicera and large base cannot be concealed when flexed
blunt tooth on posterior margin of fang groove	much wider blunt tooth on posterior margin of fang groove
chelicera about twice as long as wide	chelicera about 1.5 times as long as wide

Appendix 5: Original description of *Maratus anomalus* (Karsch 1878)

Karsch, F. 1878. Diagnoses Attoidarum aliquot novarum Novae Hollandiae collectionis Musei zoologici Berolinensis. Mittheilungen des Münchener Entomologischen Vereins 2 (1) : 22–32 (25–26).

Lycidas (n. g.)

Cephalothorace altiore, gradatim tripartito-descendente, parte cephalica deplanata. Quadrangulo oculorum latiore quam longiore; oculis I contingentibus, lateralibus mediis ca. quater minoribus, sed paulo majoribus oculis III; oculis II omnium minimus. Oculis mediis I a margine clypei spatio remotis, quod diametrum fere oculi aequat. Pedibus anticis brevioribus, robustioribus; posticis gracilioribus, pedibus III longioribus. Cephalothoracis parte postica oblique descendente, lateribus rotundatis. Abdomine, insuper viso fere triangulum exhibente, postice acuto.

12. *Lycidas anomalus* (n. sp.). Long. ceph. 2.5, latit. ceph. 1.9 mill.; long abdom. ca. 2 mill.

Cephalothorace nigro, parte cephalica opaca, pilis nigris adpressis quasi cancellata, postice nitido, ad latera oculorum albido-piloso et postice macula albido-pilosa ornato. Clypeo brunneo, mandibulis brevibus nigris. Pedibus pallidis, patellis tibiisque III brunneo-nigris, femoribus extus linea brunnea-nigra. Metatarsis basi nigro-brunneis. Palpis pallidis, antice nigris, albido pilosis. Abdomine lateribus compressis, postice acuto, supra nigro-nitido, rotundato, glabro, basi pilis nonnullis longis nigris recurvis, infra pallidiore.

Specimen ♂ unicum sub Nr. 1771 "N. S. Wales. — Daemel" signatum, acu affixum.

Lycidas, new genus

Cephalothorax higher, sloping down in three steps, the head part flat. Ocular quadrangle wider than long; anterior eyes in a row, ALE one fourth the size of the AME, PLE slightly larger, and PME smallest. AME separated from the clypeal margin by a distance equal to their diameter. Anterior legs shorter, thicker; posterior legs thinner, legs III longer. The posterior part of the cephalothorax slopes obliquely and is rounded at the sides. The abdomen bears a triangle and is acute at the rear.

12. *Lycidas anomalus*, new species. Length of cephalothorax 2.5 mm, width of cephalothorax 1.9 mm, length of abdomen about 2 mm.

Cephalothorax black, cephalic part dark, bearing an array of adpressed black hairs, glistening toward the rear, to the sides of the eyes white-haired and to the rear a patch of ornate white hairs. Clypeus brown, chelicerae short and black. Legs pale, patella-tibia III black-brown, on the exterior of the femora a black-brown line. Proximal metatarsis black-brown. Pedipalps pale, with black and white hairs in front. Abdomen laterally compressed, acute at the rear, above shining black, glabrous, some long recurved black hairs at the base, the underside pale.

One ♂ specimen under No. 1771 labeled 'N. S. Wales. — Daemel'.

Appendix 6: Original description of *Maratus chrysomelas* (Simon 1909)

Simon, E. 1909. Lief. 12. Araneae, 2^{me} partie. In: Die Fauna Südwest-Australiens. Ergebnisse der Hamburger südwest-australischen 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 (201–202).

Habrocestum chrysomelas n. sp.

♂. Long. 4 mm. Cephalothorax niger nigro-pubescent, pilis oculorum fulvo-rutulis, clypeo sat lato et retro-obliquo fere nudo, parce setoso. Oculi antichi virides, inter se appropinquati, apicibus in lineam subrectam. Area oculorum superne visa fere parallela et postice cephalothorace non multo angustior. Oculi parvi ser. 2^{ae} in medio (vel vix pone medium) inter laterales anticis et posticos siti. Abdomen breviter ovatum, supra splendide viridi violaceoque micanti-squamulatum et vittis binis parallelis latis et ovatis, tertiam partem apicalem attingentibus, nigerrimis et opacis, decoratum, subtus atro-testaceum et crebre niveo-pubescent. Chelae sat angustae et parallelae, nigrae, glabrae et sublaeves, margine inferiore sulci dente parvo et acuto parum remoto armato. Partes oris nigrae, laminae latae, extus ad angulum prominulae. Sternum nigrum, nitidum, longe albopilosum. Pedes quatuor antichi breves et crassi, nigri, tarsis paulo dilutioribus, parce albo-pilosi. Pedes 3ⁱ paris pedibus 4ⁱ paris multo longiores, nigri sed metatarso (basi excepto) tarsoque fulvis et crasse niveo-pilosis. Pedes 4ⁱ paris femore nigro, reliquis articulis fulvo-rufulis et fusco-annulatis, cuncti longe et numerose aculeati. Pedes-maxillares breves et robusti, nigri, femore ad apicem, patella tibia tarsoque supra crasse albo-flavescentipilosis, femore robusto curvato et compresso, patella

haud vel vix longiore quam latiore, tibia brevi, extus ad angulum apophysi gracillima fere setiformi, acuta et curvata armata, tarso sat longe ovato et curvato, bulbo longe ovato, ad basin obtusissime turbinato et retro-producto.

Stat. 99, Lion Mill.

***Habrocestum chrysomelas*, new species**

♂. Length 4 mm. Cephalothorax black with black hairs, hairs around the eyes yellow-red, clypeus wide and almost bare to the sides and rear, sparsely setose. Anterior eyes green, close to each other, in a straight line at top. Sides of ocular quadrangle parallel from above and almost as wide as the cephalothorax. Small eyes of the second row (PME) midway between the ALE and PME. Abdomen slightly ovate, above splendidly covered with green to violet glittering scales, and, positioned in two parallel, broad and ovate areas, reaching the apical third, black and opaque, decorated, the underside dark clay and often snowy-haired. Chelicerae narrow and parallel, black, glabrous and almost smooth, the inferior margin of the groove with small teeth, with a separate sharp projection. Mouthparts black, endites wide, with outside corners prominent. Sternum black, gleaming, with long white hairs. Legs I-II short and thick, black, the tarsi a little diluted, sparsely white-haired. Legs III longer than legs IV, black but from the distal metatarsus to the tarsus yellow and covered with thick white hairs. Legs IV black to the femur, the remaining distal parts yellow-brown with reddish rings, studded with many long and sharp spines. Pedipalps short and thick, black, from the femur to the end, patella, tibia, and tarsus above covered with thick yellow-white hairs, femur robust, curved and flattened, patella not or scarcely longer than broad, tibia short, outside at the corner a thin setiform apophysis, sharp and curved, tarsus long, ovate, and curved, bulb long and ovate, at the base obtuse, turbinate and directed toward the rear.

Site 99, Lion Mill.

Appendix 7: Original description of *Maratus nigromaculatus* (Keyserling 1883)

Keyserling, E. 1883. Die Arachniden Australiens. Nürnberg. 1: 1421–1489 (1463–1464).

Gen. Ergane. L. K.

Ergane nigromaculata n. sp.

Tab. 123. fig. 5. mas. fig. 5a. Cephalothorax von der Seite. fig. 5b. vordere Augenreihe. fig. 5c. Lippe und Maxillen. fig. 5d. Palpen.

Mas.										
Totallänge									3,3	Mm.
Cephalothorax lang									1,6	"
" in der Mitte breit									1,3	"
" vorn breit									1,0	"
Abdomen lang									1,7	"
" breit									1,3	"
Mandibeln lang									0,5	"
		Fem.	Pat.	Tib.	Metat.	Tar.		Summa		
1.	Fuss	1,0	0,5	0,5	0,5	0,4	=	2,9	Mm.	
2.	"	0,9	0,5	0,5	0,4	0,3	=	2,6	"	
3.	"	1,4	0,5	0,9	0,9	0,5	=	4,4	"	
4.	"	1,1	0,5	0,6	0,8	0,5	=	3,5	"	

Der Cephalothorax rothbraun, die Kopfplatte noch dunkeler, um die Augen, besonders der vorderen Reihe, gelbliche und längere schwarze Härchen. Die Mandibeln, die Maxillen, die Lippe und das Sternum auch rothbraun, die Beine braun, nur die Metatarsen und die Tarsen gelb, an den anderen Gliedern einzelne hellere Streifen oder Flecke, alle weiss behaart, die Glieder des dritten Paares am dunkelsten. Die Schenkel der Palpen dunkelbraun, die übrigen Glieder gelb, dicht besetzt mit langen, weissen Härchen. Das Abdomen oben dicht bekleidet mit röthlich und bläulich metallschimmernden kurzen Schuppen und versehen mit fünf Paar tief schwarzen, ovalen Flecken, von denen die drei vordersten Paare recht gross, die beiden hintern dagegen ganz klein sind. Der Rand wird hinten und an den Seiten von längeren weisslichen Härchen eingefasst. Der Bauch bräunlich gelb, rings an den Seiten, hinten und vorn umgeben mit einem schmalen helleren Bande. Die unteren Spinnwarzen gelb, die oberen schwarzbraun.

Der Cephalothorax unbedeutend länger als Femur und Patella I, um die fünften Theil länger als breit, ungefähr in der Mitte am breitesten, vorn und hinten ein wenig verschmälert, hinten aber etwas mehr als vorn, an der dritten Augenreihe nicht breiter als diese, vom Hinterrande steil und gewölbt ansteigend, dann oben ziemlich gleich hoch bleibend, die Kopfplatte nur

wenig nach vorn geneigt. Zwischen den Augen der hintersten Reihe ein ganz kleiner und flacher Eindruck, in welchem die kurze, wenig bemerkbare Mittelritze liegt. Der ziemlich stark nach hinten geneigte Clypeus reichlich halb so hoch als der Durchmesser eines vorderen Mittelauges.

Das Augenviereck bedeutend breiter als lang und hinten fast schmaler als vorn, reicht etwas über das erste Drittheil des Cephalothorax hinaus. Die vorderste Augenreihe ganz gerade und die Augen derselben dicht beisammen. Die Seitenaugen von den Mittelaugen kaum weiter als diese von einander entfernt. Die Augen der hintersten Reihe, eben so gross als die vorderen Seitenaugen, sitzen von einander weiter als vom Seitenrande. Die ganz kleinen Augen der zweiten Reihe sind den hintersten ein wenig näher gerückt als den vorderen Seitenaugen.

Die an einander schliessenden Mandibeln eben so lang und auch ungefähr eben so dick als die Schenkel des ersten Beinpaares.

Die vorn erweiterten und gerundeten Maxillen doppelt so lang als die eben so breite als lange Lippe. Das flach gewölbte, ovale Sternum höchstens um den dritten Theil länger als breit.

Das Abdomen, um den vierten theil länger als breit, hat eine kurz ovale Gestalt.

Die kurze Tibialtheil der Palpen, eben so lang als die Patella, scheint aussen am Ende keinen Dorn oder Vorsprung zu haben. Das längliche ovale Copulationsorgan reicht hinten bis zur Patella und ist vorn mit einem dünnen, ein mal kreisförmig gewundenen Fortsatz versehen.

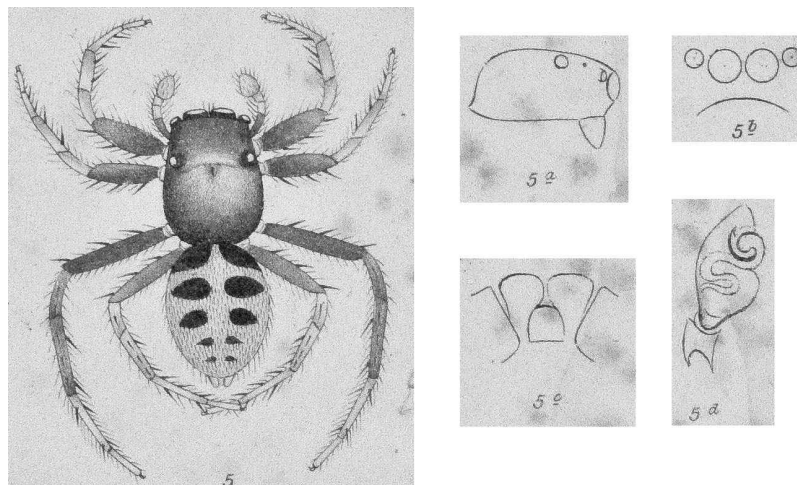
Die beiden vordersten Beinpaare kaum dicker als die längeren hinteren, das dritte Paar beträchtlich länger als die vierte. Patella und Tibia III weit länger als diese Glieder am vierten Paar; Metatarsus und Tarsus IV etwas länger als Patella und Tibia IV. Die hellen, daher etwas schwer bemerkbaren Stacheln sind folgendermassen an den einzelnen Gliedern vertheilt: Erstes und zweites Paar: Femur oben 1.1.1, vorn und hinten am Ende 1-2; Patella keine; Tibia unten 2.2 oder 3 Paar; Metatarsus unten 2.2. Drittes und viertes: Femur ebenso; Patella jederseits 1; Tibia unten 1.2, jederseits 2-3; Metatarsus am Anfange und Ende mehrere.

Rockhampton. Museum Godeffroy. Von Herrn Dämel im Grase geschöpft.

Genus *Ergane*. L. Koch

Ergane nigromaculata n. sp.

Plate 123: Fig. 5, body. Fig. 5a, prosoma from the side. Fig. 5b, anterior eye row. Fig. 5c, labium and endites. Fig. 5d, pedipalp.



Male									
Total length								3.3	mm
Prosoma length								1.6	"
Prosoma width in the middle								1.3	"
Prosoma width at the front								1.0	"
Opisthosoma length								1.7	"
Opisthosoma width								1,3	"
Chelicerae length								0.5	"
		Femur	Patella	Tibia	Metatarsus	Tarsus	=	Total	
I	Leg	1.0	0.5	0.5	0.5	0.4	=	2.9	mm
II	"	0.9	0.5	0.5	0.4	0.3	=	2.6	"
III	"	1.4	0.5	0.9	0.9	0.5	=	4.4	"
IV	"	1.1	0.5	0.6	0.8	0.5	=	3.5	"

Carapace red-brown, the ocular quadrangle even darker, with yellow and long black setae around the eyes, especially the anterior row. The chelicerae, the endites, the labium and the sternum also red-brown, legs brown, only the metatarsi and the tarsi yellow, on the other parts some lighter streaks or spots with white setae, the other parts of the third pair the darkest. Femur of the pedipalps dark brown, the other parts yellow, densely covered with long white setae. The dorsal opisthosoma is densely clothed with reddish and bluish iridescent short scales and bears five pairs of deep black, oval spots, of which the three anterior pairs are rather large, and both posterior pairs are very small in comparison. The posterior and lateral margins of the opisthosoma are bordered by long white setae. The opisthosoma has yellow-brown bands laterally, with a narrow, lighter band to the front and rear. Lower spinnerets yellow, upper spinnerets black-brown.

The prosoma slightly longer than the femur and patella I, about one-fifth longer than wide, widest near the middle, a little narrower to the front and rear, at the rear however somewhat more narrowed than at the front, at the third eye row no wider than these, the rear edge steep and curved upward, then remaining relatively high, the ocular quadrangle only slightly tilted forward. Between the eyes of the back row a rather small and shallow depression, in which a short, barely noticeable small indentation lies. The clypeus is rather strongly inclined, as high as half of the AME diameter.

The ocular quadrangle is much wider than long, and the rear is narrower than the front, occupying the first third of the prosoma. The front eye row is straight and the eyes are close together. The ALE are separated from the AME by little more than the AME are separated from each other. The PLE, just as large as the ALE, are further apart than the lateral margins of the prosoma. The very small PME are a little closer to the PLE than to the ALE.

The closed, adjoining chelicerae are about as long and thick as the femur of leg I.

Endites rounded and extended toward the front, twice as long and as wide as the labium. The shallow-domed, oval sternum at most a third part longer than wide.

The opisthosoma, about one fourth part longer than wide, has a short oval shape.

The short tibia of the pedipalp, just as long as the patella, seems to be devoid of spines or projections latero-distally. The elongated oval copulation organ extends back to the patella and the embolus at the end is a thin, single coil.

Legs I and II scarcely thicker than the longer legs III and IV, legs III considerably longer than legs IV. Patella and tibia far longer on legs III than legs IV, metatarsus and tarsus IV slightly longer than patella and tibia IV. The macrosetae, bright and thus somewhat difficult to observe, are distributed as follows on the legs: Legs I and II: Dorsal femur 1.1.1, anterior and posterior at the distal end 1-2; none on patella; tibia 2.2 or 3 pairs below; Metatarsus 2.2 below. Legs III and IV: Femur as before; patella 1 on either side; tibia 1.2 below, 2-3 on either side; several at the proximal and distal metatarsus.

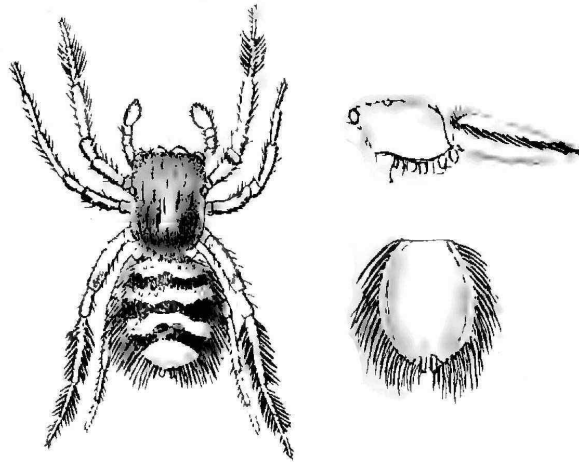
Rockhampton. Godeffroy Museum. Found by Mr. Dämel in the grass.

Appendix 8: Early descriptions of *Maratus speciosus* (O. Pickard-Cambridge 1874)

There has been some confusion with respect to the description of this species. O. Pickard-Cambridge (1874; as *Salticus speciosus*) first described the male in an account that included his suggestion that the expanded fringes of the opisthosoma might *assist to sustain the spider in its leaps*. That description, since republished (Hill 2009), is also reproduced here for reference. Later Keyserling (1883) published a new description of a male specimen, also included here. In this description, he erroneously used the word *femina* in place of *mas*, and thus some lists (*e. g.*, Platnick 2012) have assumed that the female of this species was described. That is not the case. Keyserling placed this spider in Simon's genus *Habrocestum*. Later Simon (1901a, pp. 563-564) claimed that the the females of *S. speciosus* Cambridge were described by Keyserling under the name *Habrocestum nigriceps* (from Sydney or Rockhampton). Simon was clearly wrong about this. Later Žabka (1987) renamed the female *H. nigriceps* as *Lycidas anomaliformis*. Curiously, Žabka's description of the female *L. anomaliformis* (BMNH 1891/350) does not match Keyserling's description of the female *H. nigriceps* (Museum Godeffroy, Hamburg). Žabka later (1991, Fot. 21 by D. Knowles, p. 93) figured a male *M. speciosus* and labeled this a *Maratus* with no species identification. In the text of the same document (p. 64, entry 303) he listed *Saitis speciosus* (O. Pickard-Cambridge 1874) as *incertae sedis*. In summary, the male of this species has been described twice in an unambiguous manner, but the female has not been previously described. Both descriptions are republished here.

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 (180-182, Figure 28).

Salticus (Attus) speciosus, n. sp. Plate XVII. fig. 5.



Adult male, length nearly 2 1/2 lines.

The *cephalothorax* of this beautiful species is of ordinary form; its colour is a dark reddish brown, nearly black on the quadrangular area enclosed by the eyes; this space is clothed with short reddish-yellow hairs, mixed with others fewer and longer, both dark-coloured and of a hoary hue, the latter chiefly round the eyes on the anterior portion: the lower part of the sides all round is thinly clothed with fine hoary hairs; and there is a largish, oblong, longitudinal, central patch of white hairs on and behind the occiput; behind each of the eyes of the hinder row is also a small spot of similar hairs.

The *eyes* are mother-of-pearl-like, those of the first row being of a soft green colour, changing to amethyst and bluish grey; they form a quadrangular figure, whose transverse is considerably longer than its longitudinal diameter; the minute eye between the laterals of the first and third rows on each side is intermediate between and in the same straight line with them; the fore lateral eyes are rather less than half the diameter of the fore centrals, being but very slightly (if at all) larger than those of the third or hinder row: the height of the clypeus, which retreats, is less than half the diameter of the fore central eye.

The *legs* are moderate in length and strength; their relative length is apparently 3, 4, 1, 2 (1 and 2 being almost equal); they are of a brownish-yellow colour, paler in parts, and irregularly, but pretty distinctly and boldly, marked and blotched with blackish brown: the tibiae and metatarsi of the hinder pair are strongly fringed on each side with black bristly hairs; other ordinary hairs clothe the rest; all are furnished with a few spines, and have a strong claw-tuft at the extremity of each tarsus.

The *palpi* are short and similar to the legs in colour; they are clothed with long hairs, nearly all of which are white. The radial joint is considerably shorter and less strong than the cubital, and has its outer extremity continued in the form of a rather slender, tapering, sharp-pointed, thorn-like apophysis, equal in length to the joint itself, but not easy to be seen among the long hairs by which it is concealed; the digital joint is oblong-oval, not very large, but somewhat truncated at its fore extremity, and darker-coloured than the rest of the palpus. The palpal organs consist apparently of a large oval lobe, most prominent towards the hinder part.

The *falces* are small, inclined backwards, placed a good way back, beneath the ocular region, and of a dark yellow-brown colour.

The *abdomen* is of a broad-oval form and flattish, sloping gradually (when seen in profile) from the fore part to the spinners; the upper surface is densely clothed with short adpressed scale-like hairs, among which are a few erect ordinary ones; the lateral margins, quite round to the spinners, appear to project slightly, and are furnished with a rather dense fringe of long, buff and pale yellowish-white, silky hairs; these fringes are very characteristic; and, from their appearance in the six examples that have come under my notice, I suspect that the living spider has power to raise and depress or expand them as a peacock does its train, and that when so expanded they assist to sustain the spider in its leaps. The slightly projecting lateral margins of the upper epidermis appear also to connect this spider with *Salticus volans* (last described); and there is a general similarity in the colouring of the two species: the upperside of the abdomen in the present spider is broadly and transversely banded with alternate and somewhat wavy bands of scarlet maroon and brilliant emerald-green, changing to blue with the different incidences of the light; there are three bands of the scarlet-maroon colour, and four of emerald, the foremost and hindmost bands being of this latter colour; the underside is of a uniform brownish yellow, marked and spotted with dark brown, and clothed with hoary hairs.

Six examples of this interesting and lovely species were received in 1864 from the Swan River, New South Wales.

Keyserling, E. 1883. Die Arachniden Australiens. Nürnberg. 1: 1421–1489 (1468-1470).

Gen. Habrocestum. E. Sim.

Habrocestum speciosum Cambr.

Salticus speciosus Cambridge. Ann. and Mag. of nat. hist. 1874. p. 180. pl. XVII. fig. 5.

T. 123. fig. 8. femina [mas]. fig. 8a. Cephalothorax von der Seite. fig. 8b. Mandibeln und Lippe. fig. 8c. vordere Augenreihe. fig. 8d, Palpe.

Femina [Mas].									
Totallänge								4,2	Mm.
Cephalothorax lang								2,2	"
" in der Mitte breit								1,8	"
" vorn breit								1,6	"
Abdomen lang								2,2	"
" breit								2,0	"
Mandibeln lang								0,6	"
		Fem.	Pat.	Tib.	Metat.	Tar.		Summa	
1.	Fuss:	1,0	0,7	0,7	0,5	0,4	=	3,3	Mm.
2.	"	1,0	0,7	0,6	0,5	0,4	=	3,2	"
3.	"	1,7	0,9	1,1	1,3	0,6	=	5,6	"
4.	"	1,4	0,7	0,9	1,0	0,6	=	4,6	"

Der Cephalothorax dunkel rothbraun, die Seiten und die Kopfplatte fast schwarz, überall mit lichten Härchen dünn besetzt. In der Mitte der hinteren Abdachung sitzt ein Büschel weisser Härchen, die vielleicht den Ueberrest eines Längsbandes bilden. Die Mandibeln, das Sternum, die Lippe und die Maxilien auch schwarzbraun, nur die beiden letzteren hell gerandet. Die Beine gelb mit mehr oder weniger breiten braunen Bändern am Ende der Glieder, nur die Tarsen einfarbig hellgelb. Die Palpen auch gelb, nur der Femur derselben zum grössten Theil braun. Die Beine sowie die Palpen ziemlich dicht mit längeren, weissen Härchen besetzt. Das Abdomen oben dicht mit grünen metallglänzenden Schuppen bedeckt und mit drei purpurrothen Querbändern geschmückt, von denen das hinterste, zweimal gekrümmte, das schmalste ist. Das mittelste besteht aus drei zusammenhängenden und das vorderste aus zwei, durch eine schmale Spitze der grünen Zeichnung, von einander getrennten Flecken. Diese rothen Bänder werden durch rothe Schuppen hervorgebracht und die Haut unter ihnen ist ganz schwarz gefärbt. Der bräunlich gelbe Bauch, kurz und dicht behaart. Vorn am Rücken und ebenso hinten an den Seiten bemerkt man lange gelbbraunliche Härchen, welche an letzterer Stelle besonders dicht stehen.

Der Cephalothorax, fast so lang als Femur, Patella und Tibia des ersten Beinpaares, kaum um den fünften Theil länger als breit, vorn an den Augen nur wenig breiter als in der hinteren Hälfte, wo er am breitesten ist, in der Gegend der dritten Augenreihe nicht breiter als diese, so dass die Seiten nur ganz leicht gerundet erscheinen. Der Hinterrand nicht verschmälert, sondern gerundet und in der Mitte ausgeschnitten. Vom Hinterrande erhebt sich derselbe bis in die Gegend zwischen dem zweiten und dritten Beinpaar recht steil, bleibt darauf bis zu der hintersten Augenreihe gleich hoch und ist dann zur vordersten Augenreihe hin recht stark nach vorne geneigt. Die Kopfplatte wird hinten durch einen ziemlich tiefen bogenförmigen Quereindruck begränzt, in welchem die kleine, wenig sichtbare Mittelritze liegt. Die Hügel, auf welchen die beiden Augen der hintersten Reihe sitzen, nur mässig entwickelt. Der stark nach hinten geneigte Clypeus ungefähr so hoch als der dritte Theil des Durchmessers eines vorderen Mittelauges.

Das Augenviereck, weit breiter als lang und hinten eben so breit als vorn, reicht wenig über das erste Drittheil des Cephalothorax hinaus. Die vorderste Augenreihe gerade und die Seitenaugen ungefähr um ihren Radius von den Mittelaugen entfernt. Die beiden hintersten Augen, eben so gross als die vorderen Seitenaugen, liegen von einander etwas weiter als vom Seitenrande entfernt. Die ganz kleinen Augen der zweiten Reihe sitzen in der Mitte zwischen den vorderen Seitenaugen und denen der hintersten Reihe, letzteren unbedeutend mehr genähert.

Die stark nach hinten geneigten, aneinander schliessenden und vorn nicht gewölbten Mandibeln, eben so dick und nur wenig kürzer als die Patellen des ersten Beinpaares.

Die vorn erweiterten und ziemlich gerade abgestutzten Maxilien doppelt so lang als die nicht längere als breite, vorn gerundete Lippe.

Das glänzende, flach gewölbte und wenig längere als breite Sternum breiter als die Coxen des ersten Beinpaares.

Die beiden vorderen, ziemlich gleich langen Beinpaare nicht dicker und weit kürzer als die hinteren, von denen das dritte das längste ist. Die Patellen und Tibien der beiden ersten Paare gleich lang, die Tibien der beiden hintersten länger als die

Patellen. Patella und Tibia III beträchtlich länger als diese Glieder des vierten Paares; Metatarsus und Tarsus IV eben so lang als Patella und Tibia IV. Die Bestachelung der Beine ist folgendermassen: Erstes Paar: Femur oben 1.1.1, vorn und hinten am Ende 1-2; Patella vorn 1; Tibia unten 2.2.2; Metatarsus unten 2.2. Zweites Paar ebenso. Drittes und viertes Paar: Femur ebenso; Patella vorn und hinten 1; Tibia unten 1.2, jederseits 1-2 und oben 1; Metatarsus am Anfange, in der Mitte und am Ende mehrere.

Die an der Aussenseite mit einem spitzen, nach vorn und ein wenig nach unten gerichteten Fortsatz versehene Tibia der Palpen ist ungefähr eben so lang als die Patella. An dem birnförmigen, hinten bis zur Patella ragenden Copulationsorgan befindet sich vorn ein ganz kleiner und dünner, kreisförmig gewundener Fortsatz. Die Decke überragt vorn nur wenig das Copulationsorgan.

Das fast runde, nur wenig längere als breite Abdomen ist ganz flach und scheint aus zwei Hälften zn bestehen, einer oberen, dickeren etwas gewölbten und einer unteren dünnhäutigen.

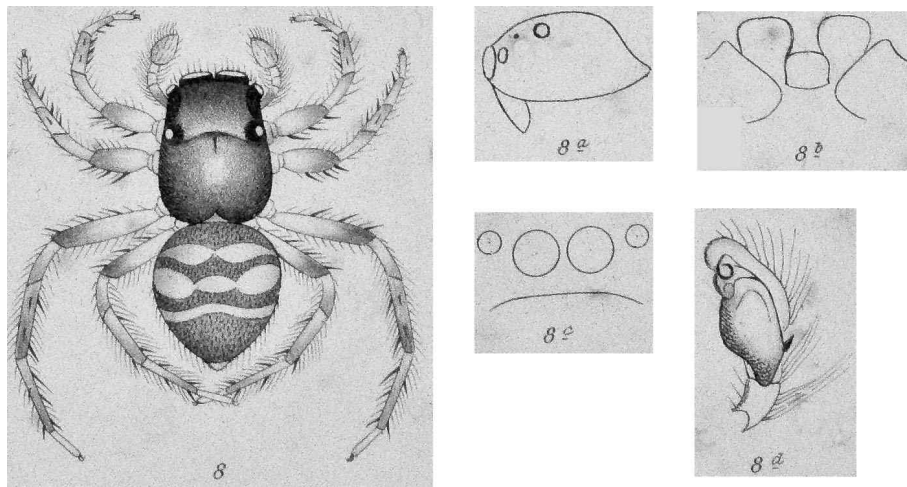
Sydney. Ein Exemplar in der Sammlung des Herrn E. Simon.

Genus *Habrocestum* E. Simon

Habrocestum speciosum Cambr.

Salticus speciosus Cambridge. Ann. and Mag. of nat. hist. 1874. p. 180. pl. XVII. fig. 5.

Plate 123. fig. 8. Male. fig. 8a. Cephalothorax from the side. fig. 8b. Chelicerae and labium. fig. 8c. Anterior eye row. fig. 8d. Pedipalp.



Male.									
Total length								4.2	mm
Prosoma length								2.2	mm
Prosoma width in the middle								1.8	mm
Prosoma width at front								1.6	mm
Abdomen length								2.2	mm
Abdomen width								2.0	mm
Chelicera length								0.6	mm
		Fem.	Pat.	Tib.	Metat.	Tar.		Total	
1.	leg	1.0	0.7	0.7	0.5	0.4	=	3.3	mm
2.	leg	1.0	0.7	0.6	0.5	0.4	=	3.2	mm
3.	leg	1.7	0.9	1.1	1.3	0.6	=	5.6	mm
4.	leg	1.4	0.7	0.9	1.0	0.6	=	4.6	mm

The cephalothorax dark red-brown, the sides and the head almost black, covered everywhere with sparse hairs. In the middle of the rear slope sits a tuft of white hairs, perhaps constituting the remnant of a longitudinal band. The chelicerae, sternum, the labium and the endites also black-brown, the latter two brightly edged. The legs yellow with more or less wide brown bands at the end of each segment, only the tarsi coloured bright yellow. The pedipalps also yellow, only the femur of the same brown at the largest part. The legs as well as the pedipalps are covered rather thickly with long, white hairs. The

abdomen above is covered thickly with green metallic iridescent scales, and is decorated with three crimson transverse bands, of which the last, twice curved, is the most narrow. The middle band consists of three adjoining spots and the anterior band of two spots separated from each other by a narrow green line. These red bands were produced by red scales and the cuticle under them is all black coloured. The yellow-brown belly thickly covered with short hairs. Anteriorly on the abdomen and also to the rear on the sides one observes long yellow-brown hairs, which are especially thick on the sides.

The cephalothorax, almost as long as the femur, patella and tibia of leg I, hardly longer than 1/5 longer than wide, at the front eyes only slightly wider than in the widest part of the posterior half, in the area of the third eye row not wider than these, so that the sides appear only slightly rounded. The rear margin is not narrowed, but rounded and in the middle cut out. From the rear margin this rises steadily to the area between the second and third legs, remaining rather high until the rear eye row and it is then strongly inclined to the front, to the anterior eye row. The head is bounded to the rear by a fairly deep transverse depression, in which a small crack is barely visible. The mounds on which the eyes of the posterior row are situated are only moderately developed. The clypeus, strongly inclined to the rear, is about as high as 1/3 the diameter of an AME.

The ocular quadrangle, much wider than long and just as wide at the rear as at the front, extends little beyond the first third of the cephalothorax. The anterior eye row is straight and the ALE are separated approximately by their radius from the AME. Both PLE, about as large as the ALE, are separated somewhat more from each other than they are from the lateral margin of the carapace. The small PME are in the middle between the ALE and the PLE, insignificantly closer to the latter.

Chelicerae strongly inclined to the rear, joined to each other and not arched at the front, just as thick and only a little shorter than the patella of leg I.

Endites wider at front and truncated in a rather straight line, twice as long as the labium which is not longer than wide and rounded at the front.

Sternum glossy, flat, curved, little longer than wide, wider than the coxae of legs I.

Leg I and II about the same length, not thicker and much shorter than leg III and IV, of which leg III is the longest. The patella and tibia of legs I and II equally long and the tibiae of the hind legs (III and IV) longer than the patellae. Patella and tibia III considerably longer than these parts of leg IV; metatarsus and tarsus IV about as long as patella and tibia IV. The spination of the legs is as follows: Leg I: Femur above 1.1.1, front and rear at the end 1-2; Patella front 1; tibia below 2.2.2; metatarsus below 2.2. Leg II the same. Legs III and IV: Femur the same; patella front and rear 1; tibia below 1.2, on each side 1-2 and above 1; Metatarsus with more at the beginning, in the middle, and at the end.

Tibia of the pedipalp with an outer spine pointed toward the front and a little toward the bottom, approximately as long as the patella. Copulation organ pear-shaped, extending proximally past the patella, with a small, thin circular spiral extension distally. The distal part of the pedipalp extends only a little beyond the copulation organ.

Abdomen almost round, only a little longer than wide, completely flat, appearing to consist of two halves, the upper, thicker, somewhat convex, and the lower with a thin cuticle.

Sydney. A specimen in the collection of Mr. E. Simon.

Appendix 9: Original description of *Maratus speculiferus* (Simon 1909)

Simon, E. 1909. Lief. 12. Araneae, 2^{me} partie. In: Die Fauna Südwest-Australiens. Ergebnisse der Hamburger südwest-australischen 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 (202–203).

Habrocestum speculiferum n. sp.

♂. Long. 4 mm. Cephalothorax niger, nigro-pubescent, utrinque, sub oculis posticis, pilis rufulis albisque paucis munitus, pilis oculorum et clypei crassis et densis roseo-aurantiacis, sed utrinque in gena et sub oculis mediis albis, clypeo lato leviter retro-obliquo. Oculi antici caerulei, inter se distincte separati, apicibus in lineam evidenter recurvam. Area oculorum superne visa parallela vel postice quam antice vix angustior et postice cephalothorace diametro oculo circiter angustior. Oculi parvi ser. 2ae fere in medio, inter oculos laterales anticos et posticos, siti. Abdomen breviter ovatum, nigrum, antice truncatum atque ad marginem setis albis longis paucis munitum, superne scuto duriusculo nigerrimo, glabro et nitido, tertiam partem apicalem paulo superante, obtectum, praeterea nigro-velutinum, subtus atro-testaceum et crebre niveo-pubescent. Chelae breves, parallelae, nigrae, apice paulo dilutiores, laeves et subglabrae, margine inferiore sulci dente sat parvo et acuto, parum remoto, armato. Partes oris nigrae, laminae latae, extus ad angulum prominulae et conicae. Sternum nigrum, nitidum, longe albio-pilosum. Pedes pallide lutei, metatarsis tarsisque anticis femoribusque posticis leviter obscurioribus, cuncti crasse niveo-pilosi, sed femoribus tibiisque anticis intus nigro-pilosis et subvittatis, pedes quatuor antici posticis breviores et robustiores, pedes 3i paris pedibus 4i paris multo longiores, cuncti longe et numerose aculeati. Pedes-maxillares breves et robusti, albio-testacei, crebre et longe albo-hirsuti, femore robusto, compresso et arcuato, patella haud vel vix longiore quam latiore, tibia brevi, extus ad angulum apophysii nigra gracillima et recta armata, tarso sat longe ovato et curvato, bulbo magno, nigro et simplici, ad basin obtuse trirrinato et retro-producto.

Stat. 115, North Fremantle.

***Habrocestum speculiferum* n. sp.**

♂. Length 4 mm. Cephalothorax black, black-haired, on both sides under the posterior eyes, bearing a few strong reddish hairs, hairs of the eyes and clypeus thick and dense red-orange, but white on the sides and under the middle eyes, the clypeus wide and slightly oblique to the rear. Anterior eyes blue, distinctly separated, a line across the top clearly recurved. Sides of ocular quadrangle parallel from above, or the posterior slightly narrower than the anterior and the posterior cephalothorax narrower by the diameter of the eye. Small eyes of the second row (PME) centered between the ALE and PLE. Abdomen slightly ovate, black, the front truncated bearing a few long white setae toward the front margin, above a tough black shield, glabrous and shining, the apical third overhanging, covered with black velvet, clay beneath with white hairs. Chelicerae short, parallel, black, the apices slightly thinner, smooth and subglabrous, small and sharp teeth on the inferior margin of the groove and bearing a separate projection. Mouth parts black, endites with a prominent and rectangular angle to the outside. Sternum black, gleaming, with long white hairs. Legs pale yellow, with metatarsus, anterior tarsus and posterior femur slightly darker, covered with thick white hairs, but the anterior femur and tibia with black and hairy marks on the inside, the front and rear four legs short and thick, legs III much longer than legs IV, studded with many sharp spines. Pedipalps short and thick, shell-white, with many long white hairs, femur thick, flattened and curved, patella not or scarcely longer than broad, tibia short, bearing a black, thin erect apophysis at the lateral corner, tarsus long, ovate and curved, bulb large, black and simple, at the base obtuse, turbinate and directed toward the rear.

Site 115. North Fremantle.

Appendix 10: Unresolved species of *Jotus* and *Lycidas* (*incertae sedis*)

We have not examined these species and thus cannot associate them with a genus at the present time.

***Jotus braccatus* L. Koch 1881, Gayndah, Queensland**

Jotus braccatus L. Koch 1881

Lycidas braccatus. — Žabka 1987; Žabka 1991

Jotus braccatus. — Platnick 2012

The epigynum of the female figured by Žabka (1987) is different from any known *Maratus*, and the male described by L. Koch, with long legs I and shorter legs III, is not a *Maratus* either. The femora of legs I and II are not enlarged as they are in the type species for *Jotus*, *J. auripes*.

***Jotus minutus* L. Koch 1881, Peak Downs, Queensland**

Jotus minutus L. Koch 1881

Lycidas minutus. — Žabka 1987; Žabka 1991

Jotus minutus. — Platnick 2012

Žabka (1987) thought that this spider, described from a single male, was related to *L. chlorophthalmus* although the embolus had a different shape. From the original description legs I and II are not enlarged, so this may not be a *Jotus*. No dorsal opisthosomal plate is mentioned in any description, and legs IV are longer than legs III.

***Lycidas anomaliformis* Žabka 1987, Rockhampton, Queensland**

Habrocestum nigriceps Keyserling 1882

Lycidas anomaliformis Žabka 1987; Žabka 1991

The epigynum as drawn by Žabka (1987) is not too different from that of other known *Maratus*. Descriptions of the male by Keyserling and Žabka, including the presence of an opisthosomal scutum and the structure of the pedipalp, suggest a close relationship to *Maratus anomalus*.

***Lycidas bitaeniatus* (Keyserling 1882), Peak Downs, Queensland**

Thorellia bitaeniata Keyserling 1882

Lycidas bitaeniatus. — Žabka 1987; Žabka 1991

This species is known from a single female with a macerated opithosoma, but the epigynum drawn by Žabka (1987), with widely separated fossae and posterior spermathecae, is not like that of any known *Maratus*.

***Lycidas chlorophthalmus* (Simon 1909), York, Western Australia**

Eugasmia chlorophthalmus Simon 1909
Lycidas chlorophthalmus. — Žabka 1987; Žabka 1991

Žabka (1987) drew the pedipalp, but did not measure the legs. From his description, leg I is ornamented with a brush, and leg III is not ornamented. There is no mention of a dorsal opisthosomal plate. This suggests that this species is not a *Maratus*.

***Lycidas dialeucus* (L. Koch 1881), Sydney, New South Wales; Port Mackay, Queensland**

Ergane dialeuca L. Koch 1881
Hasarius lineatus Keyserling 1882
Ergane dialeuca. — Keyserling 1883
Sigytes dialeuca. — Simon 1903
Lycidas dialeucus. — Žabka 1991

The original description of one male (L. Koch 1881) described a yellow-brown median stripe, bounded by white, surrounded by a field of yellow-brown scales, with longer, erect hairs on the dorsal opisthosoma. Koch also described a shield or scute over only the anterior part of the opisthosoma. However, his drawing of the face of this spider (Plate CVIII, Figure 4a) shows a salticid with a high clypeus and long, wide chelicerae that is definitely not a *Maratus*. Nonetheless, this spider, when found, should be easy to identify from Koch's description.

***Lycidas furvus* Song & Chai 1992, Wuhan, China**

Lycidas furvus Song & Chai 1991; Song & Li 1997; Song, Zhu & Chen 1999

The published drawing of a male pedipalp is not sufficient to link this to any genus with certainty. The type locality, Wuhan, is in interior China, about 700 km west of Shanghai.

***Lycidas griseus* (Keyserling 1882), Gayndah, Queensland**

Cytaea grisea Keyserling 1882
Lycidas griseus. — Žabka 1987; Žabka 1991

This species was described from a single female specimen. The epigynum (Žabka 1991) is different from those of known female *Maratus*. Legs III and IV of the female are the same length, and the body length (7.6 mm) is beyond the range of any known *Maratus*.

***Lycidas heteropogon* (Simon 1909), Busselton, Western Australia**

Saitis heteropogon Simon 1909
Lycidas heteropogon. — Žabka 1987; Žabka 1991

This species has been described from a single female, and the epigynum (Žabka 1987) is quite different from any known *Maratus*.

***Lycidas karschi* Žabka 1987, Sydney, New South Wales**

Lycidas karschi Žabka 1987; Žabka 1991

This species is known only from two female specimens and a brief description with drawings of the epigynum, different from those of known female *Maratus*. This species would be quite large (~7 mm body length) for that genus.

***Lycidas kochi* Žabka 1987, Peak Downs, Queensland**

Lycidas kochi Žabka 1987; Žabka 1991

Žabka's brief description of this species is based on two females that were labeled *Habrocestum nigriceps* Keyserling, one of which he designated as the holotype.

***Lycidas michaelsoni* (Simon 1909), Boyanup, Western Australia**

Saitis Michaelsoni Simon 1909
Lycidas michaelsoni. — Żabka 1987; Żabka 1991

Known only from a set of fragments of one female, the epigynum of this spider (Żabka 1991) does not resemble that of a *Maratus*.

***Lycidas nigriceps* (Keyserling 1882), Gayndah, Queensland**

Thorellia nigriceps Keyserling 1882
Saitis nigriceps. — Rainbow 1911
Lycidas nigriceps. — Żabka 1987; Żabka 1991

Żabka (1987) described this from a single damaged female and the epigynum is quite unlike that of *Maratus*. Keyserling also described a male with long legs I which is also not a *Maratus*.

***Lycidas obscurior* (Simon 1909), southwestern Australia**

Saitis Michaelsoni obscurior Simon 1909
Lycidas obscurior. — Żabka 1987; Żabka 1991

There is but a single female specimen. The epigynum differs considerably from *S. michaelsoni* (Żabka 1987), but it is also unlike that of any known *Maratus* female.

***Lycidas piliger* (Keyserling 1882), Gayndah, Queensland**

Cytaea piligera Keyserling 1882
Lycidas piliger. — Żabka 1987; Żabka 1991

The structure of the pedipalp of the single male specimen (Żabka 1987) resembles *Maratus*, although legs III and IV are of similar length (Keyserling 1882).

***Lycidas pilosus* (Keyserling 1882), Bowen, Queensland**

Habrocestum pilosum Keyserling 1882
Lycidas pilosum. — Żabka 1987; Żabka 1991

This species was described from a single female specimen. The epigynum as drawn (Żabka 1987) is quite different from *Maratus*.

***Lycidas scutulatus* (L. Koch 1881), Peak Downs, Queensland**

Ergane scutulata L. Koch 1881
Sigytes scutulata. — Simon 1903
Lycidas scutulatus. — Żabka 1987; Żabka 1991

Żabka's redescription under *Lycidas* was based on a single damaged female syntype, large (~6.5 mm) for a *Maratus*. L. Koch described both sexes and listed four different localities for *Ergane scutulata*: 'Sidney, Rockhampton, Peak Down, Gayndah'. The male described by L. Koch had shorter legs III and does not belong to *Maratus* as defined here.

***Lycidas vittatus* (Keyserling 1881), Peak Downs, Queensland**

Hasarius vittatus Keyserling 1881; Proszynski 1984
Lycidas vittatus. — Żabka 1991

This species is known from one male and one female specimen. Legs I of the male are ornamented with long fringes, the other legs are not ornamented, and the pedipalp as originally drawn does not look like a euophryine pedipalp. Both the male and female are boldly patterned with longitudinal stripes. Proszynski (1984) also drew the epigynum of the female specimen. With large fossae and small spermathecae it does not resemble the epigynum of any known *Maratus*. Żabka (1991) did not add to the original description when he moved this spider to *Lycidas*.

Appendix 11: List of changes associated with this version (103.2)

The names presented in PECKHAMIA 103.1 have priority over those presented in this version. The correct reference for that publication, which remains the document of record for naming purposes, is:

Otto, J. C. and D. E. Hill. 2012. Notes on *Maratus* Karsch 1878 and related jumping spiders from Australia, with five new species (Araneae: Salticidae: Euophryinae). Peckhamia 103.1: 1-81.

urn:lsid:zoobank.org:pub:F5DA5408-ABD7-4BFF-98E8-7AF731EA8B8E [registered 26 OCT 2012, published 4 NOV 2012]

To facilitate access to corrections and updates, the policy of PECKHAMIA is to publish a corrected and updated version of each document rather than a post-publication list of changes. When any changes are made to a previously published document, the ICZN requires that the new version obtain a new ZooBank registration number to identify the fact that it is a separate publication. All changes made to the first version of this document (103.1) are listed here:

Changes from 103.1 to 103.2

None of these changes significantly affects the status or the description for any of the new species or new combinations proposed in the first version (103.1), or the pagination of contents in that version. Changes are listed here by page:

- 01. A new ZooBank (zoobank.org) registration number and date for this version is shown
- 01. Note (1) with reference to page 82, Appendix 11 was added under title
- 01. '*Maratus*' and 'Euophryinae' added to list of key words
- 02. (second sentence) Spelling of first 'similarity' corrected and 'that' inserted after *L. anomalus*
- 11. (first paragraph) Replaced third sentence
- 20. (Fig. 22) Removed 'in the living female' from caption
- 22. (second paragraph) Replaced reference to relatively short prosoma of *H. villosum* with 'chelicerae shorter than patellae I'
- 23. (Fig. 27) Stoney Creek locality in southeastern Queensland, not near Cairns
- 27. (Fig. 32) KS.70099 is 29 AUG-3 SEP 1998, N. Power coll.
- 27. (Fig. 32) KS.73325 is 26 OCT 1979
- 27. (Fig. 32) KS.87188 is 25-27 NOV 2001
- 30. (Fig. 36) Changed collection date for KS.69535 from 3 SEP 1997 to 29 AUG-3 SEP 1997
- 36. Sixth male paratype from Munmorah is specimen KS.58735, 27 NOV 1997, not KS.5873533
- 36. (Fig. 43) Replaced 'KS.5873533' with 'KS.58735, Munmorah'
- 47. Duplicate word 'opisthosoma' removed
- 50. Added punctuation ('. —') to later synonyms of *M. splendens* for consistency
- 67. (Table) Replaced 'cephalothorax about 1/4 longer than wide' with 'Cephalothorax more than 1/4 longer than wide'
- 79. Replaced text under *Jotus braccatus*
- 79. Replaced text under *Lycidas anomaliformis*
- 79. Corrected spelling of *Lycidas bitaeniatus* (was *bitaeniata*)
- 79. Replaced text under *Lycidas bitaeniatus*
- 80. Replaced text under *Lycidas karschi*
- 81. Replaced text under *Lycidas kochi*
- 81. Replaced text under *Lycidas nigriceps*
- 81. Replaced text under *Lycidas scutulatus*
- 81. Under *Lycidas vittatus*, corrected spacing between name and synonym list
- 82. This page was added to list changes to the original publication (Peckhamia 103.1) under a new appendix (11)