

## Observations of courtship display by a male *Maratus amabilis* Karsch 1878 (Araneae: Salticidae)

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### Summary

Visual courtship display by a male *Maratus amabilis* Karsch 1878 is documented in a series of new photographs. Like other *Maratus*, the display of *M. amabilis* includes the extension of both legs III and lateral abdominal flaps, accompanied by elevation of the abdomen, to present a colourful and distinctive visual pattern to the female. Features of the display of *M. amabilis* are compared to those described previously for other *Maratus*, with the suggestion that future studies may be able to establish species-specific display behavior within this genus.

### Introduction

Jumping spiders of the genus *Maratus* are characterized by the brightly coloured extensions (flaps) that are wrapped or folded around the abdomen of the adult males. O. Pickard-Cambridge (1874), who illustrated these for *Maratus volans*, regarded it as probable that they were of a “sexual” nature but at the same time appeared convinced that they aided the spider in flying or gliding. Dunn (1957) provided the first real evidence that the flaps of a male *Maratus* were actually used in courtship. Clearly captivated by the specimen he observed, he gave a detailed and moving account of this behaviour in *Saitis pavonis* Dunn 1947, later reassigned to the endemic Australian genus *Maratus* (Žabka 1991). Waldock (1993, 2007) later added to Dunn's observations on *M. pavonis*, and also reported similar behaviour in other *Maratus*. Waldock (2007, 2008) has also indicated that there may be at least 21 species, many with a limited distribution, assignable to this genus. Presently, only 7 of these have been described, and published records of the designated type species, *M. amabilis*, are based on a single pinned male specimen collected in the nineteenth century (Karsch 1878, Žabka 1987, Prószyński 2009, Platnick 2010).

Observations of the courtship behavior of additional species of *Maratus* have come recently from photography enthusiasts. Photographs by one of us (J. C. Otto) have so far depicted the courtship display in *M. volans* (Nieuwenhuys 2008, Hill 2009) and also in a second, undescribed species of *Maratus* (Hill 2009, Figs. 26–27). One photographer has also posted observations and photographs of courting male *Saitis speciosus* (Pickard-Cambridge 1874) (also see Hill 2009), apparently living on *Tetragonia decumbens* in the vicinity of Perth, southwestern Western Australia, on the Internet (Cam 2009a, b). Dunn (1947) thought that his *S. pavonis* was most closely related to *S. speciosus*, which he included in his key to Australian *Saitis*, and it is possible that *speciosus* will be included in *Maratus* in a future revision of that genus. Although distinctive, *S. speciosus* also resembles the type species of *Maratus*, *M. amabilis*, in the presence of a pair of large dark, lateral spots that figure prominently in the display of the elevated abdomen of adult males.

In November, 2009 one of the authors (J. C. Otto) had the opportunity to collect an additional species, *M. amabilis* Karsch 1878 ('lovely' *Maratus*), in the vicinity of Sydney, Australia, and to observe this male's courtship display. The present paper includes photographs and observations of this rarely collected or observed species. The single specimen of *M. amabilis* in the Berlin Museum was labelled “Austral. sept. —

Daemel" (Karsch 1878, Žabka 1987). This appears to be a reference to northern (Latin, *septentrionalis*) Australia, but Žabka later (1991) suggested that this spider may have been from New South Wales. For reference, the published descriptions of this specimen are presented in an appendix here, along with a new English translation of Karsch (1878). The female of this species is still unknown and undescribed.

### Methods

The observations presented here are based on a single male specimen captured on 29 November 2009 in the vicinity of Sydney, Australia. This specimen was subsequently identified by Julianne Waldock of the Western Australian Museum as *Maratus amabilis* Karsch 1878, and will be deposited in the Australian Museum (Sydney). Courtship display by this male was elicited by introducing it to females collected days earlier at the same locality. These females were most likely of a different species, *M. volans* (Pickard-Cambridge 1874), as this was a much more common species at this locality and all of these females had previously elicited courtship responses in males of *M. volans*.

### Colouration

The specimen shown in the photographs here has the characteristic black spots that were described by Karsch (1878) and Žabka (1987), and is fairly consistent with the overall description these authors provided. However, some differences exist. For example, the photographed specimen (Figs. 1–2) shows a light yellow area anteriorly on the abdomen and has the longitudinal abdominal bands bicoloured (yellow and orange), which has not been noted by either Karsch or Žabka. It is possible that these differences in colouration are due to the fact that Karsch and Žabka both described a pinned specimen while the photographs shown here are from a live one.

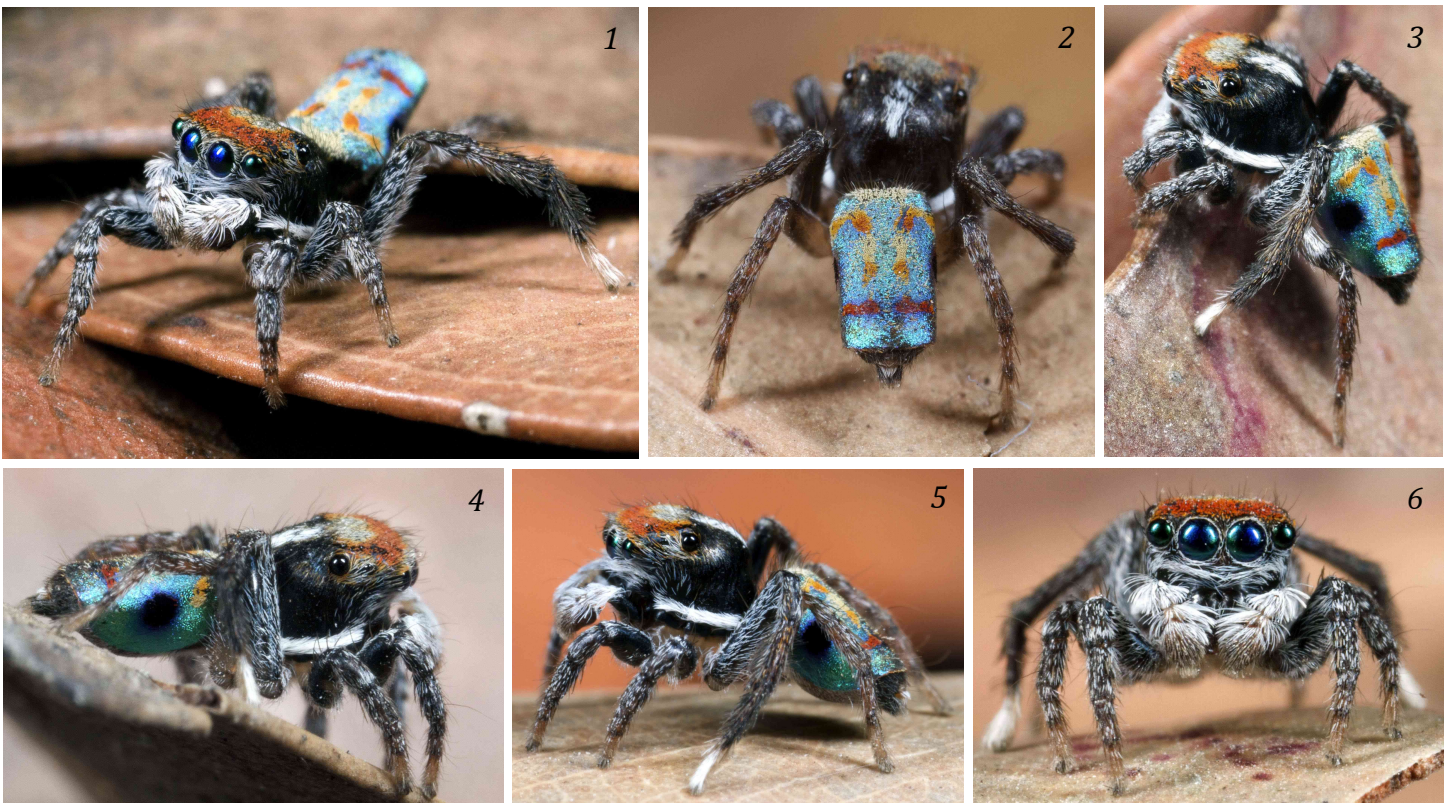


Figure 1. Views of adult male *Maratus amabilis* with the flaps retracted, or wrapped around the abdomen. The dark lateral spots are scarcely visible from above (2), but are prominent in lateral views (3–5). Setae of the clypeus and pedipalps are white (1, 6). 1, just before raising the abdomen, at the onset of its courtship display. 2–6, on the lookout.



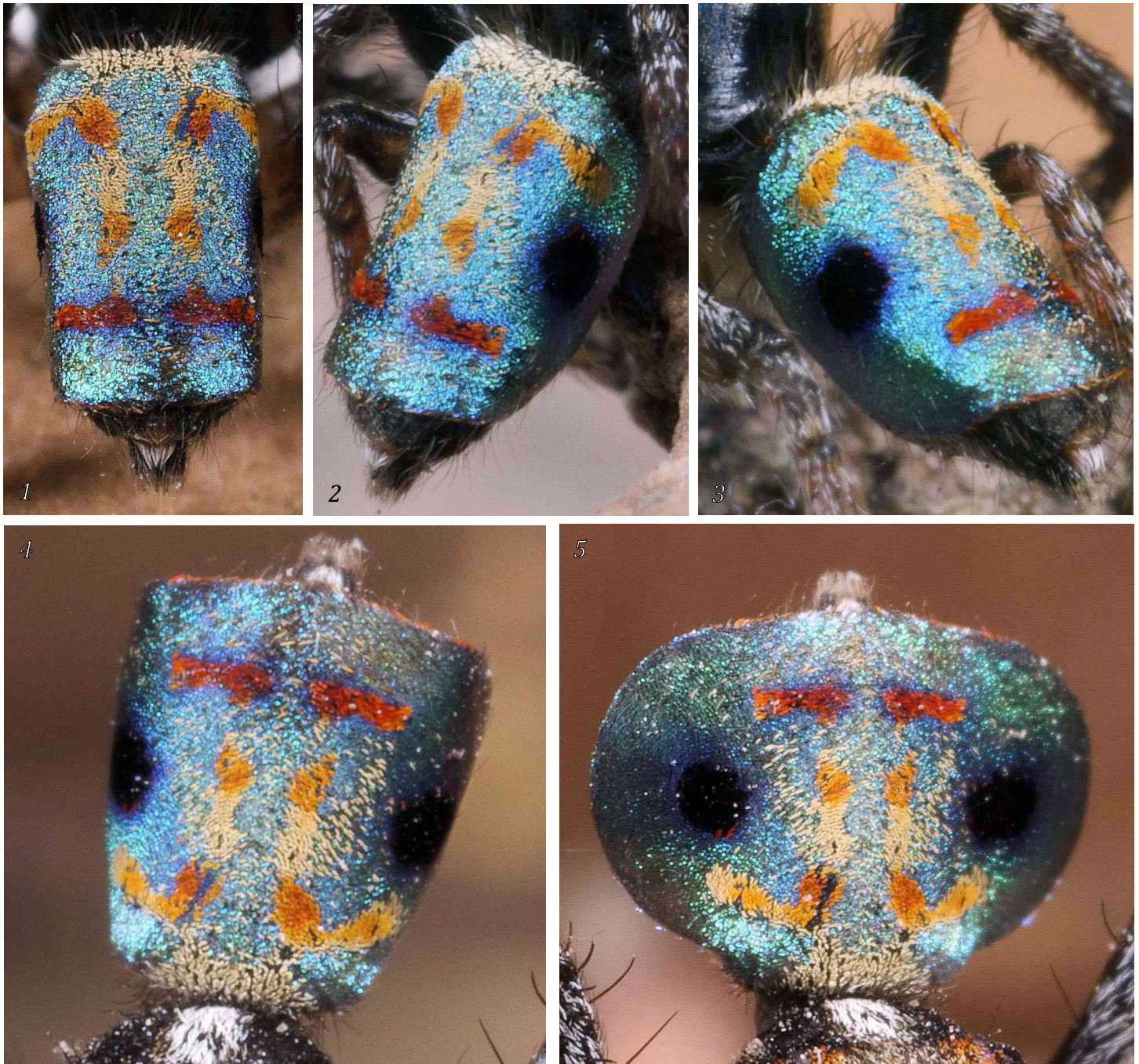


Figure 2. Views of the dorsal abdomen of an adult male *Maratus amabilis*. A distinctive pattern of tan to red-orange scales contrasts with a background of iridescent blue-green scales. 1, dorsal view, flaps retracted. 2, 3, lateral oblique views, flaps retracted. 4, 5, dorsal view of raised abdomen with lateral flaps in various degrees of expansion. In (5), the distinctive pair of dark spots are clearly visible. These might represent the primary eyes within a caricature or exaggerated image of a salticid face, eliciting a *supernormal response* by the female.

### Courtship display

The courtship display of this male *Maratus amabilis* was observed on several occasions after the male was placed in close proximity to a female *Maratus*. It usually started when the male and female made eye contact and oriented toward each other. The male then began to slightly raise his abdomen (Fig. 1.1) and then quickly raised the third pair of legs and flaps (Fig. 3).



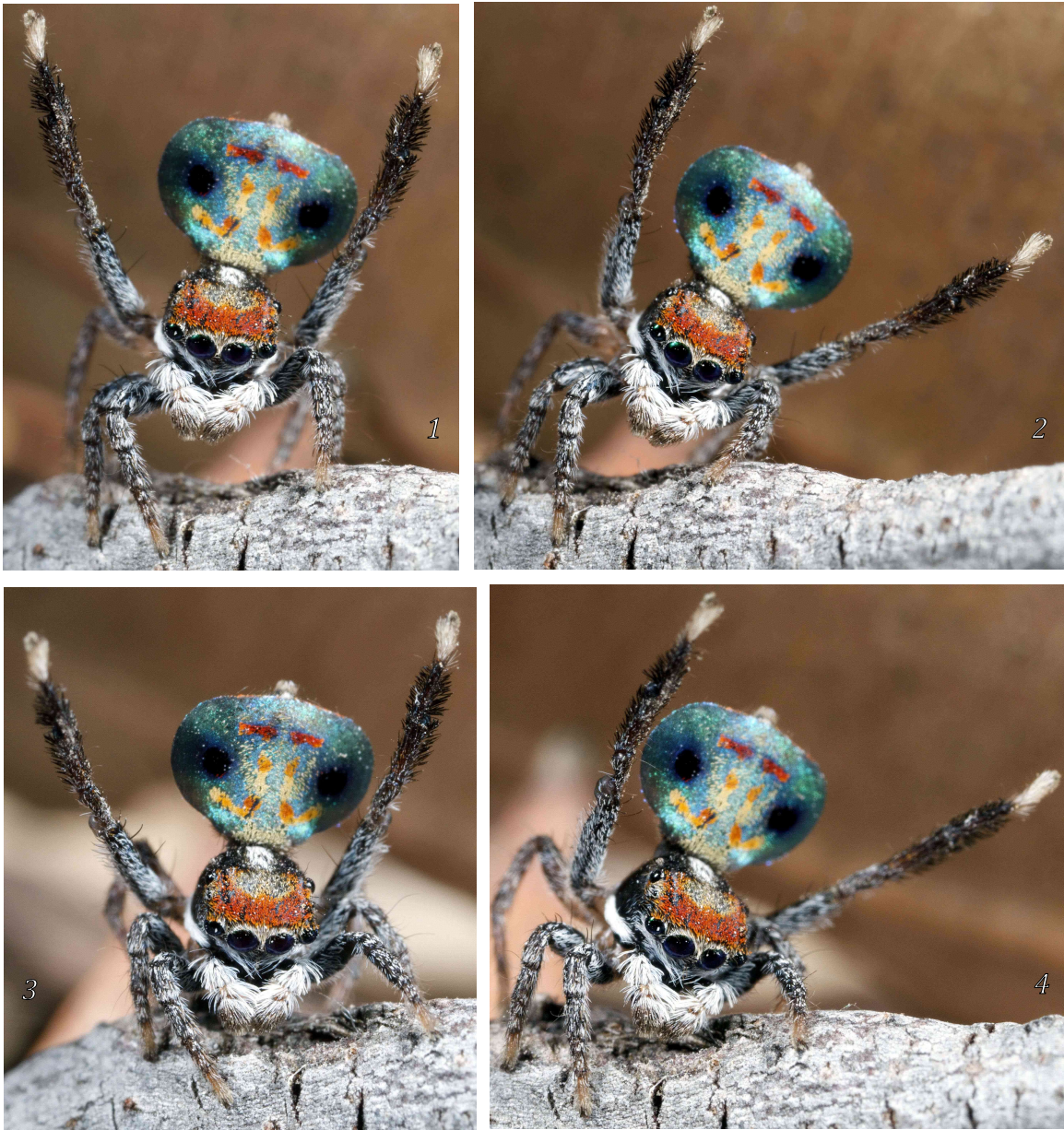


Figure 3. Two sequences (1–2, 3–4) depicting male *M. amabilis* as it moved or deflected its body to the left, and held the extended legs III in a V-shape, during courtship display. Note the elevation of this spider's body above the branch in the first sequence (1–2).

After extending legs and flaps the male appeared relatively motionless. During one nearly 3.5 minute display (Fig. 4) the legs on the ground barely moved from their position, and the raised legs were initially kept in a similar relative position to each other without vibrating or shaking. Then the male began crouching down on one side, deflecting his body and legs to that side, creating the appearance of a “Mexican wave.” During this 3.5 minute interval this deflection to one side was observed approximately 10 times. The display usually ended as the female lost interest and the male folded his abdominal flaps back to their original position (Fig. 4.5). In some instances the male was attacked by the female and retreated quickly. Despite this he continued to search for the female, and kept raising a single leg, presumably to signal his presence (Fig. 5).

Extension of legs III (Figs. 5–6) follows the pattern of behavior seen in other male *Maratus*, but in *M. amabilis* the degree of flexion of this leg at both the tibio-metatarsal and metatarso-tarsal joints is greater than has been described in other members of this genus.



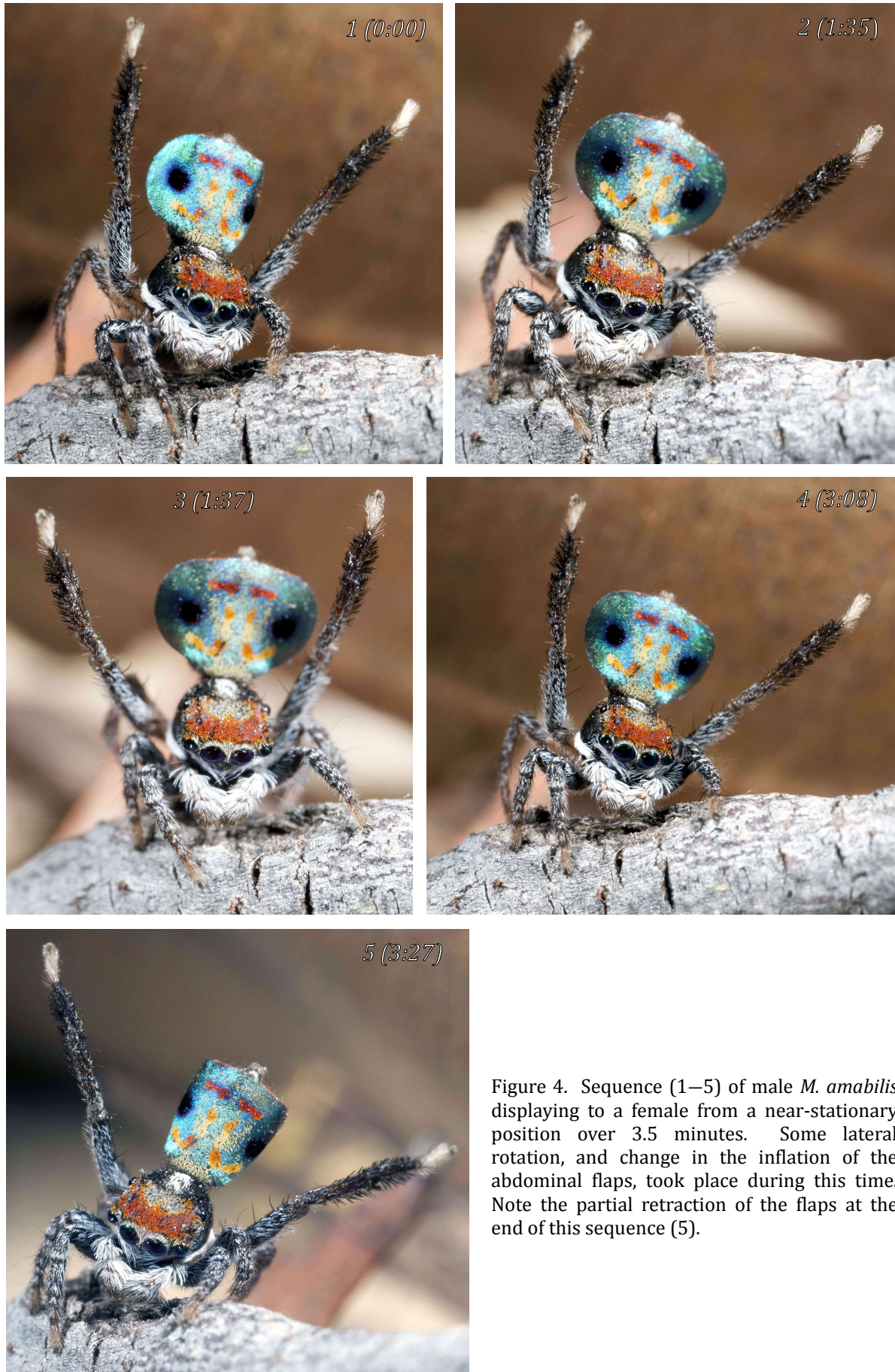


Figure 4. Sequence (1–5) of male *M. amabilis* displaying to a female from a near-stationary position over 3.5 minutes. Some lateral rotation, and change in the inflation of the abdominal flaps, took place during this time. Note the partial retraction of the flaps at the end of this sequence (5).





Figure 5. Searching male *M. amabilis*, apparently using one leg III to signal or to elicit a response from any females in the area. 1, unilateral extension of right leg III. 2, unilateral elevation and extension of left leg III, accompanied by elevation and inflation of the abdominal fan, a frequent response to a sighted female.

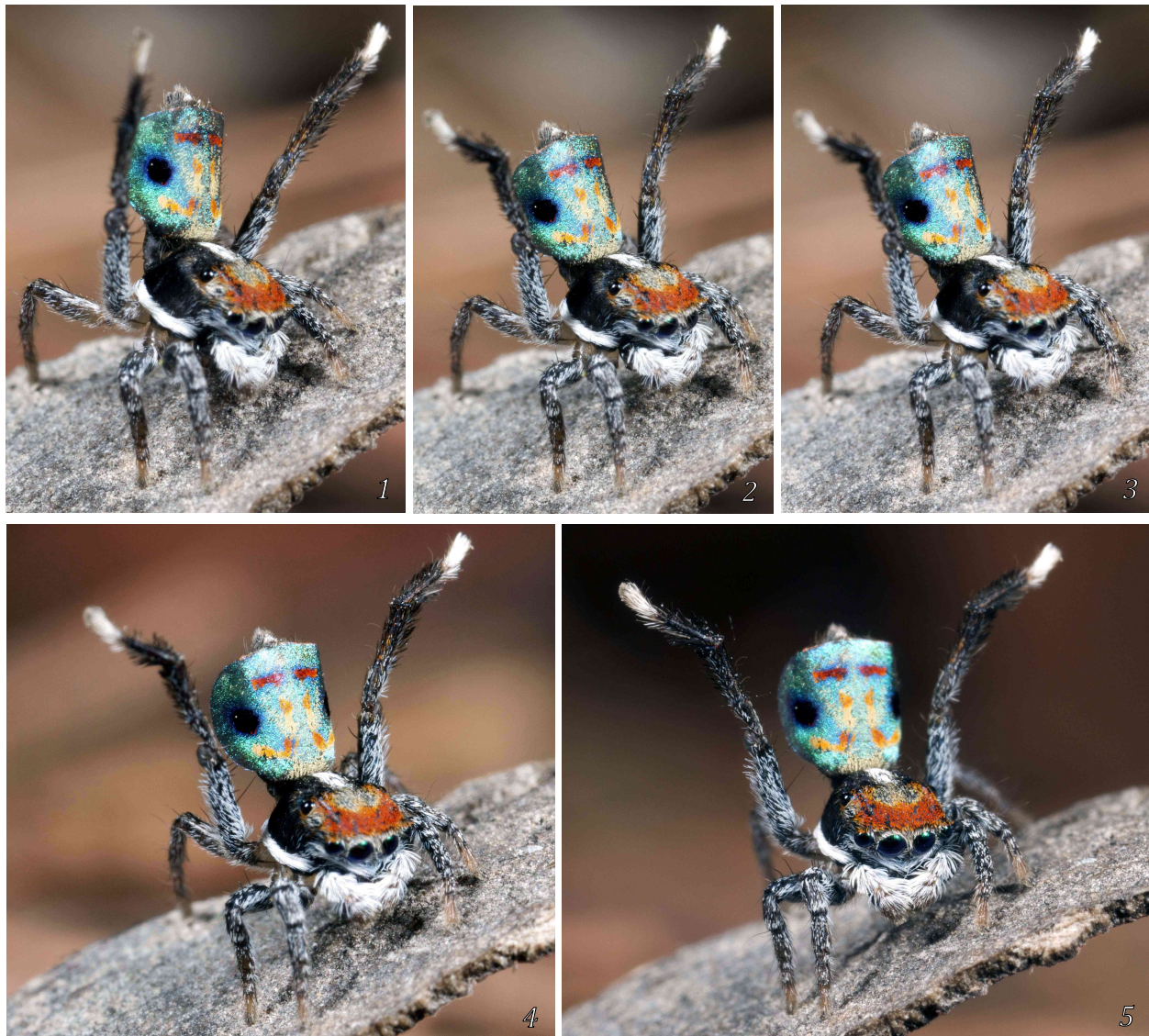


Figure 6. Sequence (1–5) showing male *M. amabilis* displaying with partially extended fan to a sighted female. Note the bilateral extension of legs III and the extent to which this spider flexed these legs at both the tibio-metatarsal and metatarso-tarsal joints during this display.



Subsequent analysis of several photographs (Fig. 7) suggests that the flaps are usually extended before the legs are raised, but it is unclear whether or not this sequence can be varied. A sequence involving retraction or deflation of the abdominal flaps (or *fan*) of this male is also shown here, in Fig. 8.

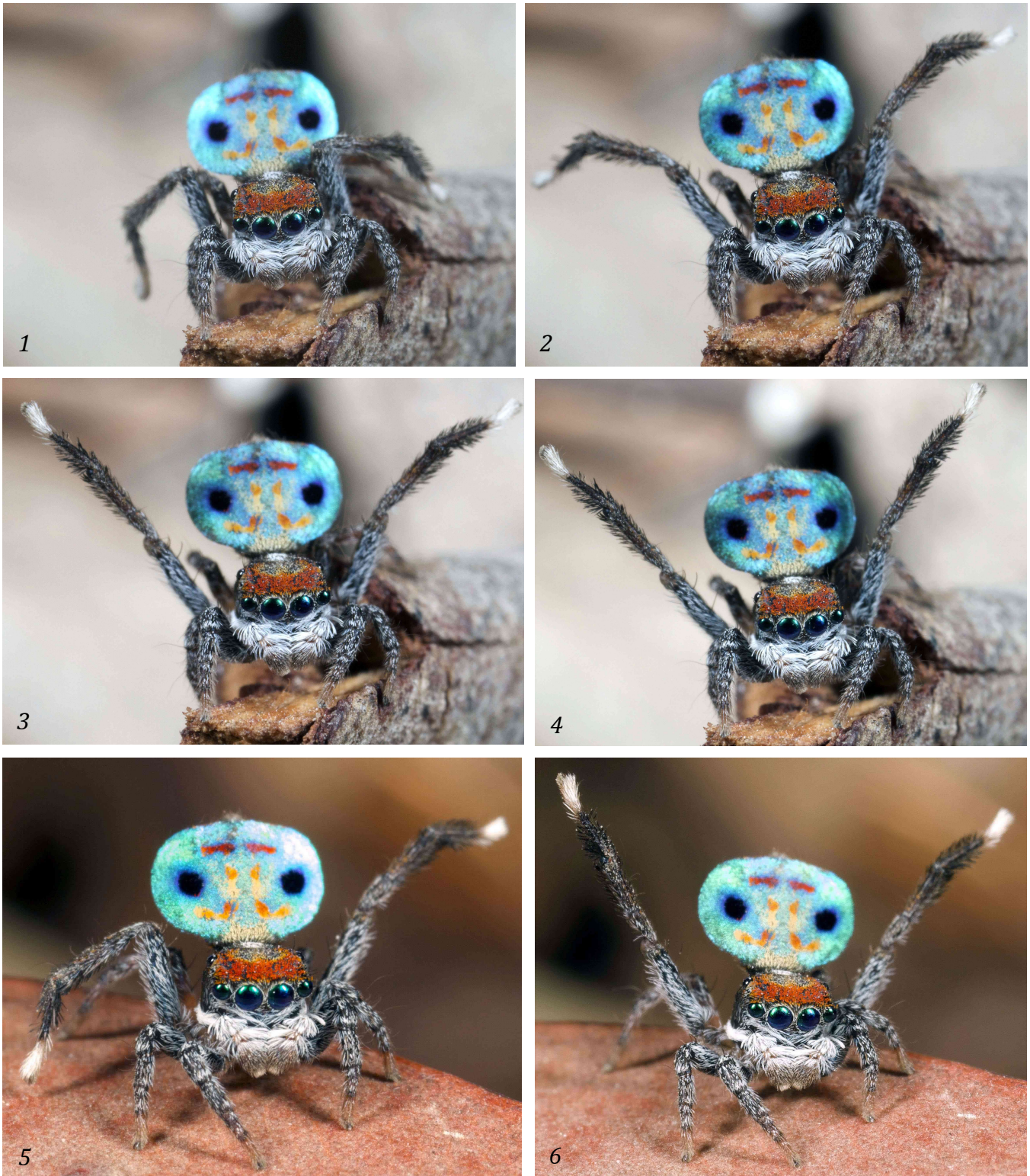
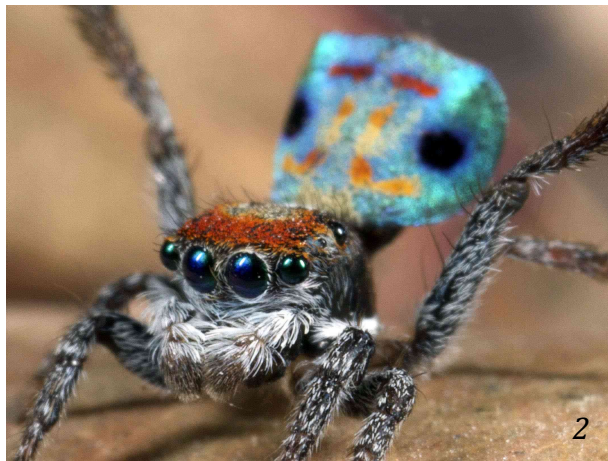


Figure 7. Two sequences (1-4 and 5-6) depicting the elevation of legs III after inflation and elevation of the abdominal fan of a male *M. amabilis* facing a female *Maratus*. Several of these images also show the flexion at the distal joints of legs III. (5) and (6) give some indication of the relative brightness of the fully-extended fan, when oriented toward a light source. In this orientation the two dark lateral spots are most apparent, as they contrast with the brilliant iridescent blue-green scale background.





Figure 8. Sequence (1–3) depicting retraction or deflation of the abdominal fan by this displaying male *M. amabilis*, as it flexed legs III at the femuro-patellar joint.



## Discussion

The courtship behaviour described for *Maratus amabilis*, *M. pavonis*, *Saitis speciosus* and *M. volans* males is generally similar in that all four species raise and extend their abdominal flaps and their third pair of legs. More detailed study of these species should, nonetheless, reveal some distinctive differences in behaviour, in accordance with the variable appearance of these colourful spiders. Based on available descriptions, some of these possible distinctions are outlined in Table 1. So far, the degree of flexion of legs III by *M. amabilis* males, at both the tibio-metatarsal and the metatarso-tarsal joints, appears to be distinctive for this species.



Table 1. Comparison of described courtship displays of male *Maratus* (or *Saitis*). In the absence of more detailed studies of behaviour, these comparisons should be taken only as suggestions. It is noteworthy that among the species listed below successful mating was observed only in *M. pavonis* (Dunn 1957, Waldock 2007).

species	reference	common features	distinctive features
<i>amabilis</i>	Otto and Hill 2010 (this paper), near Sydney, NSW	vertical elevation of abdomen, variable bilateral expansion of abdominal flaps, lateral rotation of elevated abdomen, unilateral extension of leg III, elevation of femur III with flexion at trochantero-femoral and femuro-patellar joints, body rotated laterally with legs III bilaterally extended in V-shape	marked flexion of legs III at tibio-metatarsal joint, marked flexion of legs III at metatarso-tarsal joint
<i>pavonis</i>	Dunn 1957, Carnegie, Victoria ? (based on Dunn 1947)	vertical elevation of abdomen, bilateral expansion of abdominal flaps, rapid vibration of pedipalps with abdomen and legs III, bilaterally extended and vertical legs III, side to side stepping during zig-zag approach, leg III in direction of lateral movement more vertical as contralateral leg III vibrates more rapidly, extension of pedipalps which are then lowered to touch the front of the female	
	Waldock 1993, 2007, near Perth, WA ?	unilateral extension of leg III, leg III lowered laterally in a jerking motion, jumping forward, at 3 cm vertical elevation of abdomen, bilateral expansion of abdominal flaps, vigorous vibration of elevated abdomen, bilaterally extended and vertical legs III, bilateral lateral movement of extended legs III, bilaterally extended and vertical legs III lowered to the rear	bilateral leg III stomp (tapping), rapid vibration during side to side approach
	Bokhari 2009, Herdsman Lake near Perth, WA	unilateral extension of leg III, leg III lowered laterally in a jerking motion	
	Cam 2009c, near Perth, WA	vertical elevation of abdomen, unilateral extension of leg III, stretch and hold one leg III extended, slow jerky single leg wave, side to side movement, body rotated laterally with legs III bilaterally extended in V-shape, constant movement of pedipalps	rapid vibration during side to side approach, unilateral leg stomp
<i>speciosus</i>	Cam 2009a, b, near Perth, WA	vertical elevation of abdomen, vibration of abdomen, shimmy side to side while vibrating abdomen, bilateral sideways extension of legs III, legs III bilaterally extended in V-shape (45°), bilaterally extended and vertical legs III, bilateral movement of legs III between horizontal and vertical extended positions, unilateral extension of leg III, leg III lowered laterally in a jerking motion, unilateral extension of leg III, unilateral leg stomp	drag one outstretched leg against leaf surface, bilateral three position (vertical, intermediate, horizontal) semaphore with legs III, flatten raised abdomen with extended lateral fringe of setae
<i>volans</i>	Nieuwenhuys 2008, Hill 2009, near Sydney, NSW (Otto)	vertical elevation of abdomen, variable bilateral expansion of abdominal flaps, unilateral extension of leg III to the side, bilaterally extended and vertical legs III lowered to the rear; movement of legs III between multiple horizontal and vertical extended positions, elevation of femur III with flexion at trochantero-femoral and femuro-patellar joints	extended vertical legs III moved to contact each other at midline behind the expanded fan, marked rotation of elevated and expanded fan to either side
undescribed species A	Žabka 1991, Figs 2–3, p. 8, Perth, WA	bilaterally extended and vertical legs III lowered to the rear	
undescribed species B	Hill 2009, Figs. 26–27, p. 21–22, near Sydney, NSW	unilateral extension of leg III, elevation of femur III with flexion at trochantero-femoral and femuro-patellar joints	unilateral expansion of abdominal flaps



## Acknowledgments

We thank Dr. Marek Żabka for allowing the reproduction of his descriptions of the two Karsch *Maratus*, Val Hogan of the Museum Victoria Library in Melbourne who kindly furnished a copy of Dunn's original (1947) description of *Maratus pavonis*, as well as Dr. David B. Richman and Dr. G. B. Edwards for their respective reviews of the manuscript. We also thank Julianne Waldoek from the Western Australian Museum for assisting with the identification of *M. amabilis*, as well as for providing us with reprints of her publications on *Maratus* and a copy of Dunn's (1957) article on *M. pavonis*.

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## Appendix

### Original descriptions and classification of *Maratus amabilis*

Karsch (1878) also described a second species, *M. amoenus*, in a footnote that is also presented here. This specimen was also redescribed by Žabka (1987), and later (Žabka 1991) synonymized with *M. volans* (Pickard-Cambridge 1874). Waldock (1995) recognized *M. amoenus* Karsch 1878 as a valid description, although Karsch clearly took a noncommittal approach. Karsch wrote in the neoclassical scientific Latin ('Neolatin') that was popular in the nineteenth century. A new English translation is provided here. Pagination of original material is indicated in yellow header bars. The Karsch descriptions and translations are in the public domain. Text in red was omitted from the original. More recent descriptions are presented with the permission of Dr. Marek Žabka and Annales Zoologici.

#### 1. Karsch 1878 (*Maratus*)

[Karsch, F. 1878. Diagnoses Attoidarum aliquot novarum Novae Hollandiae collectionis Musei zoologici Berolinensis [Descriptions of several new salticids from Australia in the collection of the Berlin Museum]. Mittheilungen des Münchener Entomologischen Vereins 2 (1) : 22—32.]

Diagnoses Attoidarum aliquot novarum Novae Hollandiae etc.

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#### *Maratus* (n. g.)

Cephalothorace minus longo, altiore, oculis III paullo ante medium sitis; oculis II minimis, ab oculis I et III spatio aequae saltem longo disjunctis. Quadrangulo oculorum paullo latiore antice quam postice. Abdomine deplanato, lateribus parallelis, quadrangulo, longiore quam latiore. Pedibus gracilioribus; corpore piloso.

15. *Maratus amabilis* (n. sp.). Species *Atto splendido* Walck. (Hist. Nat. des Ins. Apt. I, 1837, p. 458, n. 103) habitu simillima, attamen pictura omnino diversa. Cephalothorace nigro, lateribus albido-pilosus, parte cephalica flavo-brunnea, adpresso-pilosa. Pedibus et palpis flavidis, brunneo-maculatus, albido-pilosus; tibiis, metatarsis

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Mittheil. d. Münchener Ent. Ver. 1878

cum tarsis III nigricantibus. Abdomine livido, metallico-nitido. Dorso antice duabus fasciis longitudinalibus obliquis rubris, basi lateribus aduscatis; postice fascia transversa sanguinolenta, medio interrupta. Lateribus infra paullo ante medium macula magna rotundata nigra. Mamillis nigricantibus. Cephalothorace 2.1, abdomine 2 mill. long.

Specimen unicum (♂) spec. sub Nr. 1553, acu affixum, "Austral. sept. — Daemel" signatum.\*)

\*) In collectione Musei zoologici Berolinensis sub Nr. 1554 unicum specimen siccum, acu affixum, "Austr. sept. — Daemel" signatum vidi ad *Atto splendido* Walck. (l. c.) vix differens, longitudine *Atti amabilis* (n. sp.). Cephalothorace postice nitido, nigro-brunneo; parte cephalica viridi-brunneo-pubescente; inter oculos I et III supra oculos medios I fasciis duabus opacis longitudinalibus rubro-brunneis, pone oculos III macula albopilosa et inter has maculas fasciola albo-pilosa longitudinali media. Abdomine aureo-viridi-metallico, lateribus, antice et postice margine aureo-albido-metallico, dorso postice fasciola transversa albido-metallica, lateribus supra macula parva rubra; antice tribus fasciis longitudinalibus rubris, media porrecta postice nigra, exterioribus paullo obliquis, lateribus aureo-albido-metallico-marginatis. Pedibus pallidus, metatarsis III omnino nigris, femoribus, tibiis, metatarsis omnibus nigro-brunneo maculatis. Tot corpore omnino sparse fusco-piloso. Pulcherrimam hanc speciem, alia si fuerit quam *Attus splendidus* Walck., *Maratum amoenum* denominatus (22).



## **2. New English translation of Karsch 1878 (*Maratus*)**

[Additional comments (not in the original) are in brackets. This was the first description of the genus *Maratus*, and *M. amabilis* is the type species, known from a single specimen collected somewhere in Australia.]

### ***Maratus* (n. g.) [new genus]**

Cephalothorax less long, higher, eyes III [posterior lateral eyes, or PLE] situated slightly before the middle; eyes II [posterior medial eyes, or PME] small, separated equally from eyes I [anterior eye row, including AME and ALE] and III [PLE]. Ocular quadrangle a little wider in front [ALE to ALE] than in back [PLE to PLE]. Abdomen plane [flat on top], the sides parallel, quadrangular, longer than wide. Legs thin, body hairy.

15. ***Maratus amabilis*** (n. sp.) [new species]. Similar in appearance to *Attus splendidus* [actually listed under both *Atte splendide* and *Attus splendidus*] Walckenaer (Hist. Nat. des Ins. Apt. I, 1837, p. 458, n. 103), however entirely different in coloration. Cephalothorax black, white-haired on the sides, the head yellow-brown, with adpressed hairs. Legs and pedipalps yellow, with brown spots, white-haired; tibia, metatarsus, and tarsus III blackish [dark]. Abdomen lead-colored, shining-metallic [iridescent]. Above, in front, two oblique longitudinal red tracts, ending below on the sides; to the rear blood-red transverse tracts, interrupted at the middle. On the sides below, slightly in front of the middle, a large round black spot. Spinnerets blackened [dark]. Cephalothorax 2.1 mm, abdomen 2 mm in length.

One pinned ♂ specimen, No.1553, labeled “Austral. sept. — Daemel”. \*)

[22. ***Maratus amoenus*** (n. sp.) = *M. volans* (O. Pickard-Cambridge 1874)]

\*) In the collection of the Zoological Museum in Berlin, under No. 1554, one dry, pinned specimen labeled “Austr. sept. — Daemel” looking little different from *Attus splendidus* Walckenaer. (l. c.) [abbreviation for *loco citato*, or *loc. cit.*, referring to the previous citation], in length like *Attus amabilis* (n. sp.). [reference to *Maratus amabilis*]. Cephalothorax shining to the rear, dark-brown; head with green and brown hairs; between eyes I and III [within optic quadrangle] above middle eyes I [AME] two longitudinal rust-red-brown tracts, to the rear of eye III (PLE) a patch of white hairs and within has longitudinal medial patches of bundled white hairs. Abdomen gold-green-metallic, the sides, anterior, and posterior margins gold-white-metallic, dorso-posterior transverse tracts white-metallic, the sides above the spots with a little red; anterior with three red longitudinal tracts, black in the middle toward the rear, laterally slightly oblique, the sides with gold-white-metallic margins. Legs pale, metatarsus III entirely black, femur, tibia, metatarsus completely spotted with dark-brown. The entire body covered with sparse dark hairs. This most beautiful species, if it is other than *Attus splendidus* Walck., is named *Maratum amoenum* (22) [*Maratus amoenus*, new species number 22 for this paper].

## **3. Żabka 1987 (*Maratus*)**

[Żabka, Marek. 1987. Salticidae (Araneae) of Oriental, Australian and Pacific Regions, II. Genera *Lycidas* and *Maratus*. Annales Zoologici, Warszawa 40 (11): 451—482. In this 1987 paper, Żabka redescribed the single type specimen of *M. amabilis*, and *M. amoenus* (= *M. volans*) from the Zoologisches Museum der Humboldt-Universität, Berlin (ZMB).]



***Maratus* Karsch, 1878**

1878 *Maratus* Karsch, Mitt. münch. ent. Ver., 2: 27.

The structure of the male copulatory organs suggests the affinity of the genus with *Lycidas*. This is proved by the form of the palpal organs, similar course of seminal reservoir, structure of embolus and conductor and single tibial apophysis. The character distinguishing *Maratus* is the entirely different body appearance: abdomen rectangular, covered with vast scutum reaching the ventral area. The body with an intense metallic lustre and the bright colours — mainly green and red — produce an interesting coloration.

Bonnet (1957) has given only one species of this genus — *M. amabilis* — known from Australia.

***Maratus amabilis* Karsch, 1878**

1878 *Maratus amabilis* Karsch, Mitt. münch. ent. Ver., 2: 27.

Material: 1 ♂ "*Maratus amabilis* Karsch, Holotypus, Austral., Sept., Daemel" ZMB 1553.

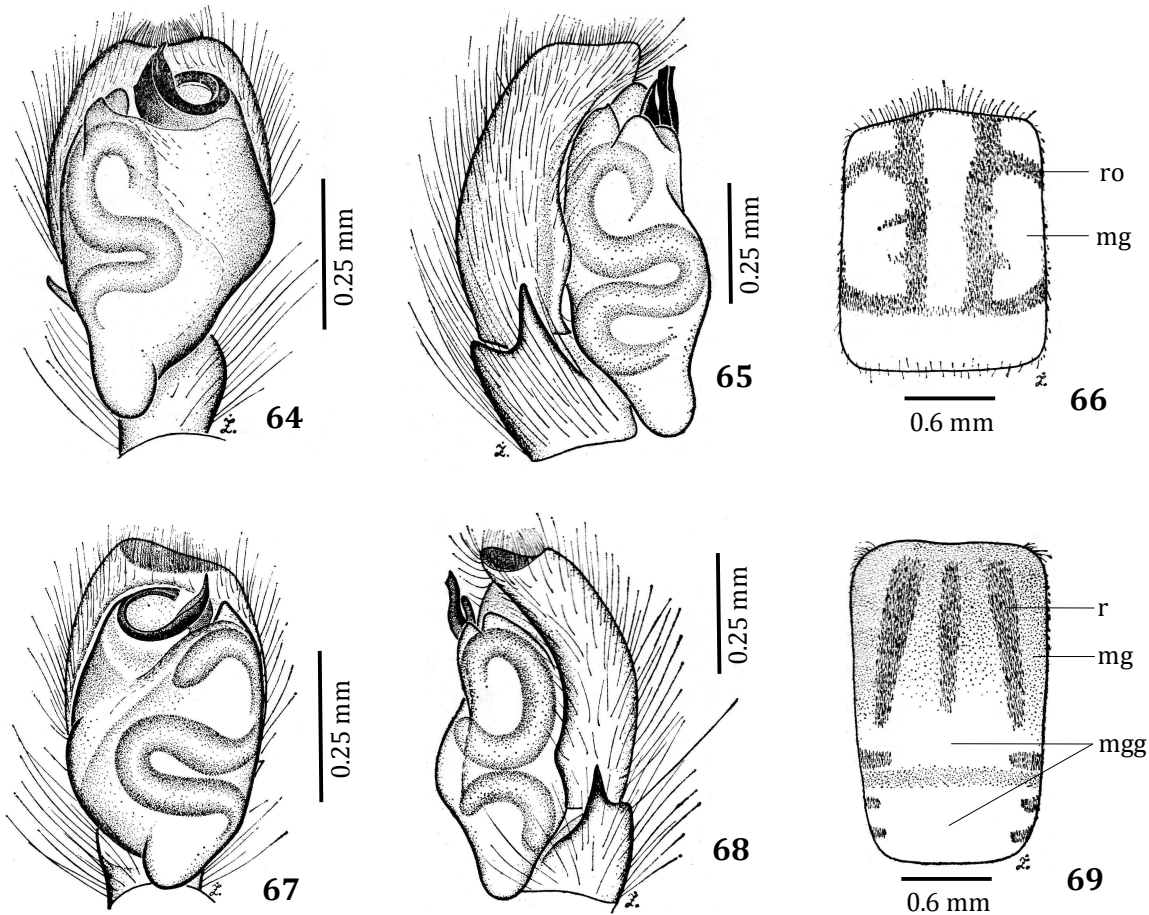
Male. Cephalothorax dark brown. Anterior and lateral areas of eye field with fine dense scaly orange setae. Remaining part of eye field and region of fovea media with white setae. Around lower margin protruding white hairs. Also present white-grey hairs on the whole surface and grey bristles near eyes. length of cephalothorax 2.09, length of eye field 0.82, width of eyes I and III 1.48. Abdomen rectangular (Fig. 66) covered with scutum — reaching the ventral area — with an intense green metallic lustre. On its surface orange and red-orange streaks of scaly setae. Furthermore, the entire surface and especially the margin with orange hairs. Anterior margin with grey-brown bristles. Lateral area with a black oval spot surrounded by red setae. Length of abdomen 2.14. Clypeus dark brown with white-grey longer and white — shorter hairs. Chelicerae, maxillae, labium and sternum brown, venter orange. Palpal organ (64, 65) grey-brown, club-shaped. Bulbus broad with meandering seminal reservoir. Upper part of bulbus in the form of two flaky outgrowths. Embolus strongly sclerotized, conductor broad, tibial apophysis narrow, laterally bent. Legs greyish-brown with dense white and grey protruding hairs. Spines grey-brown.

***Maratus amoenus* sp. n.**

Material: 1 ♂ "*Maratus amoenus* Karsch, Holotypus, Austral., Sept., Daemel", ZMB 1554.

Male (holotype). Cephalothorax dark brown. Along the eye field 3 streaks of white setae divided by red ones. On thorax tufts of white scaly setae, around





Figs. 64—69. ♂ *Maratus amabilis* Karsch, 1878: palpal organ (64, 65) and schematic diagram of coloration of abdomen (66). ♂ *Maratus amoenus* sp. n.: palpal organ (67, 68) and schematic diagram of coloration of abdomen (69). Abbreviations: ro — red-orange, mg — metallic grey, r — red, mgg — metallic grey-green.

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lower margin protruding white hairs. Also present sparse grey bristles. Length of cephalothorax 2.20, length of eye field 0.92, width of eyes I and II 1.54. Abdomen (Fig. 69) relatively longer than in previous species — also rectangular and covered with scutum. In the anterior part 3 longitudinal streaks of red scaly setae on a green background having a metallic lustre. Posteriorly on a grey-green background a transverse green streak and 3 pairs of spots of red setae, laterally becoming 3 pairs of streaks on a green metallic background. Lack of black dots present in *M. amabilis*. On the margin grey-orange setae, on the whole surface and especially on anterior margin long grey bristles. Length of abdomen 2.20. Clypeus light brown with long white hairs. Chelicerae, maxillae, labium and sternum grey-brown, venter grey-orange. Palpal organ (Figs. 67, 68) similar as in the previous species, but bulbus narrower, in its upper part only one flaky outgrowth. Conductor narrower and shorter, partly hidden under embolus. Tibial apophysis more adjacent. Legs I and II orange with black-grey spots — especially in the region of joints. Legs III and IV dark-grey-brown, only their tarsi orange. Hairs dense — white adpressed, grey and brown — protruding. Spines brown.

Both species of the genus differ in body coloration, shape of abdomen and details of the structure of palpal organs.

The name *M. amoenus* has been given by Karsch, but it is not clear why it is not published in the paper on the genus *Maratus*. Especially as in the collection of Zoological Museum in Berlin — elaborated by Karsch — both species are collected and catalogued one after another.

## REFERENCES

Karsch, F. 1878. Diagnoses *Attoidarum* aliquot novarum Novae Hollandiae collectionis Musei zoologici Berolinensis. Mitt. münch. ent. Ver., München, 2: 22-32.

**4. Żabka 1991 (*Maratus*)**

[Żabka, Marek. 1991. Studium taksonomiczno-zoogeograficzne nad Salticidae (Arachnida: Araneae) Australii. Wyższa Szkoła Rolniczo-Pedagogiczna w Siedlcach. Rozprawa Naukowa 32: i-ii, 1-110. This reference suggests that *M. amabilis* may have been found in New South Wales. MNHN is the Muséum National d'Histoire Naturelle, Paris, and ZMB is the Zoologisches Museum der Humboldt-Universität, Berlin. This is the paper that transferred most of the known *Maratus* to that genus from *Saitis*.]

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*Maratus* Karsch, 1878

Rodzaj endemiczny, spokrewniony z *Lycidas*, wyróżniający się pokrojem ciała i zachowaniem (Mascord 1970, Prószyński 1984a, Żabka 1987b, Davies, Żabka 1989), rozmieszczony wzdłuż wybrzeży kontynentu I na Tasmanii (Żabka nieopubl.).

133. *Maratus amabilis* Karsch, 1878  
 1878 *M. a.* Karsch, Mitt. muench. ent. Ver., 2: 27.  
 1987 *M. a.*: Żabka, Ann. zool., 40: 479.  
 Rozmieszczenie. Nowa Południowa Walia (?).  
 Uwagi. Gatunek typowy rodzaju.
134. *Maratus pavonis* (Dunn, 1947), comb. nov.  
 1947 *Saitis p.* Dunn, Mem. Nat. Mus. Vict., 15: 83.  
 Rozmieszczenie. Wiktoria.
135. *Maratus splendens* (Rainbow, 1896), comb. n.  
 1896 *Attus s.* Rainbow, Proc. Linn. Soc. NSW, 4, 63.  
 1901 *Saitis s.*: Simon, Hist. nat. des Araign., 2: 560.  
 Rozmieszczenie. Nowa Południowa Walia.
136. *Maratus vespertilio* (Simon, 1901), comb. n.  
 1901 *Saitis v.* Simon, Ann. Soc. ent. Fr., 70: 68.  
 Rozmieszczenie. Australia.
137. *Maratus volans* (O. Pickard-Cambridge, 1874), comb. nov.



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1874 *Saitis* v. O. Pickard-Cambridge, Ann. Mag. Nat. Hist., 14: 178.  
 1970 *S. v.*: Mascord, Austral. Spid., p.28.  
 1987 *M. amoenus* Żabka, Ann. zool., 41: 479, syn. n.  
 Rozmieszczenie. Nowa Południowa Walia.  
 Material. 3♂, 2♀ *Saitis volans* O. P.-C., MNHN 21125.  
 ♂ *Maratus amoenus* Żabka, 1987, Holotype, ZMB 1554.

138. *Maratus* sp. Davies, Żabka, Mem. Qd. Mus., 27: 237.  
 Rozmieszczenie. SE Queensland.

### **5. New English translation of Żabka 1991 (*Maratus*)**

*Maratus* Karsch, 1878

Endemic genus, related to *Lycidas*, distinguished by its appearance and behavior (Mascord 1970, Prószyński 1984a, Żabka 1987b, Davies, Żabka 1989), found along the coasts of the continent, and in Tasmania (Żabka, unpublished).

133. *Maratus amabilis* Karsch, 1878  
 1878 *M. a.* Karsch, Mitt. münch. ent. Ver., 2: 27.  
 1987 *M. a.*: Żabka, Ann. zool., 40: 479.  
 Distribution. New South Wales (?).  
 Remarks. Type species for genus.
134. *Maratus pavonis* (Dunn, 1947), comb. nov.  
 1947 *Saitis p.* Dunn, Mem. Nat. Mus. Vict., 15: 83.  
 Distribution. Victoria.
135. *Maratus splendens* (Rainbow, 1896), comb. n.  
 1896 *Attus s.* Rainbow, Proc. Linn. Soc. NSW, 4, 63.  
 1901 *Saitis s.*: Simon, Hist. nat. des Araign., 2: 560.  
 Distribution. New South Wales.
136. *Maratus vespertilio* (Simon, 1901), comb. n.  
 1901 *Saitis v.* Simon, Ann. Soc. ent. Fr., 70: 68.  
 Distribution. Australia.
137. *Maratus volans* (O. Pickard-Cambridge, 1874), comb. nov.  
 1874 *Saitis* v. O. Pickard-Cambridge, Ann. Mag. Nat. Hist., 14: 178.  
 1970 *S. v.*: Mascord, Austral. Spid., p.28.  
 1987 *M. amoenus* Żabka, Ann. zool., 41: 479, syn. n.  
 Distribution. New South Wales.  
 Material. 3♂, 2♀ *Saitis volans* O. P.-C., MNHN 21125.  
 ♂ *Maratus amoenus* Żabka, 1987, Holotype, ZMB 1554.
138. *Maratus* sp. Davies, Żabka, Mem. Qd. Mus., 27: 237.  
 Distribution. SE Queensland.