
Description of a new peacock spider from the Gnangara Mound north of Perth, Western Australia (Araneae: Salticidae: Euophryinae: *Maratus*)

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Waldock (2007) reported a small and colourful peacock spider from Neerabup National Park, north of Perth, Western Australia. We subsequently published photographs of this undescribed species taken by Ron K. Kinsey in the Warwick Open Space (Otto & Hill 2012). Among photographers the spider had become known as either the “Northern Peacock Spider” (Cam 2010) or the “Gnangarra [sic] Peacock Spider” (Kinsey 2010, Anderson 2012), presumably a reference to its distribution north of Perth in association with the Gnangara Mound (Gnangara groundwater system; Figure 7). Here we describe the male of this new species.

Maratus clupeatus, new species

Maratus sp. nov. Waldock 2007

Maratus species D (Gnangarra [sic] Peacock Spider) Otto & Hill 2012a, 2012b

Type specimen. The holotype male was collected in the Warwick Open Space north of Perth, Western Australia (31°50'13.39"S, 115°48'58.97"E, 25 AUG 2013, David Knowles coll.) and will be deposited in the Western Australian Museum.

Etymology. The species group name (*clupeatus*, adj., Latin) means *shield-bearing*, a reference to the fact that the fan of males of this species is truncated at the rear and thus bears the shape of a medieval shield or escutcheon when raised during display.

Diagnosis. Male pedipalps are similar to those of other *Maratus* and of little use for identification. Males closely resemble *Maratus pavonis* (Dunn 1947) with respect to colouration and placement of setae or scales on the carapace, opisthosoma, and legs. However, the dorsal opithosomal plate or fan of *M. clupeatus* has a truncated posterior margin that has not been found in any other *Maratus*. When the flaps of the fan are expanded as it is raised, it takes on the appearance of a shield with a flat top edge. The detailed pattern of ornamental scales on this fan also differs from that of any other members of the genus, and includes a broad band of orange to red-orange scales near the lateral margin of each flap.

Description of male (Figures 1-5). The male holotype is 4.1 mm in body length (prosoma 2.1 mm, opisthosoma 2.0 mm), not including the spinnerets.

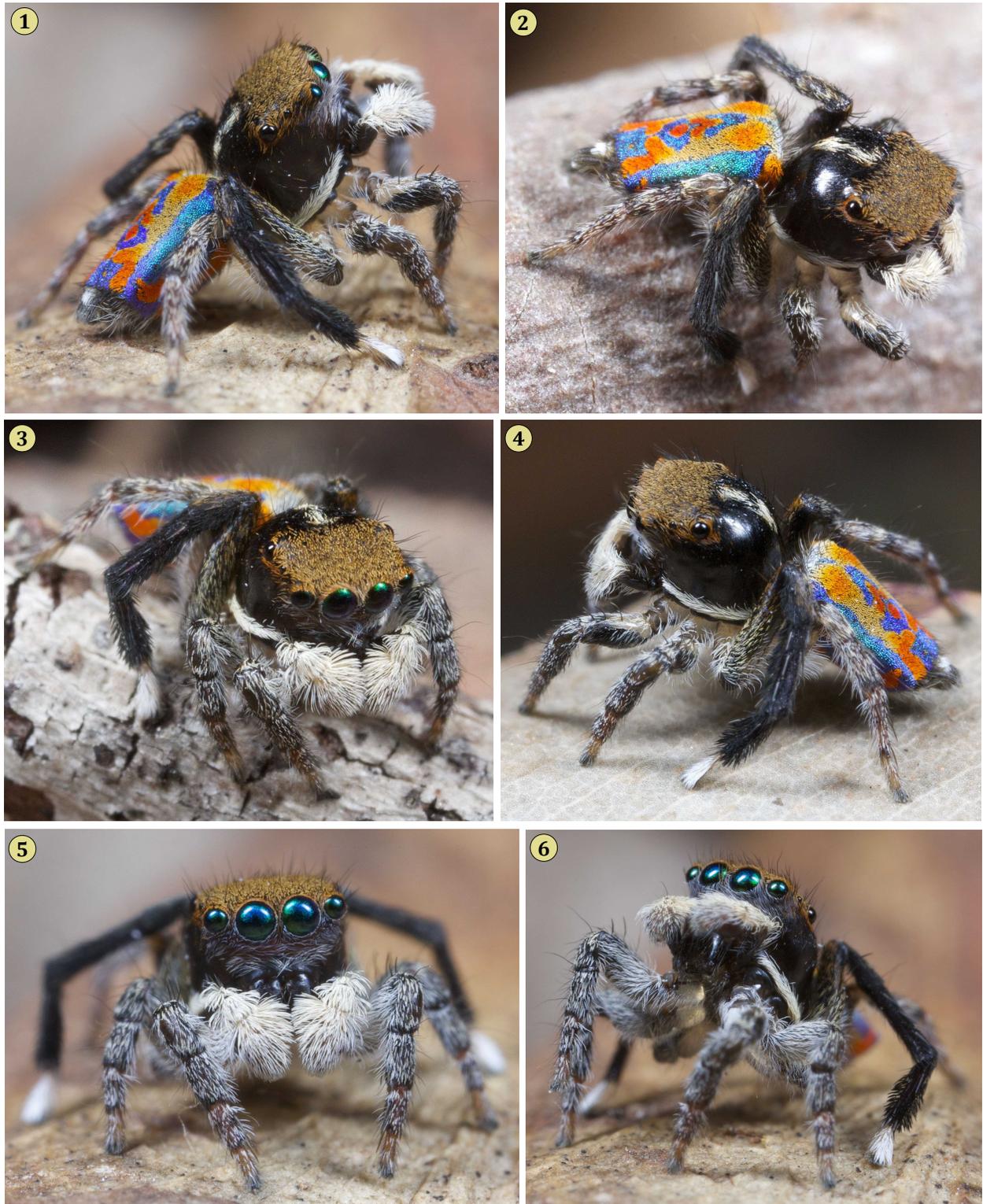


Figure 1. Living holotype male *Maratus clupeatus* with flaps of the fan retracted. Setation of the carapace and legs is similar to that of *M. pavonis*.

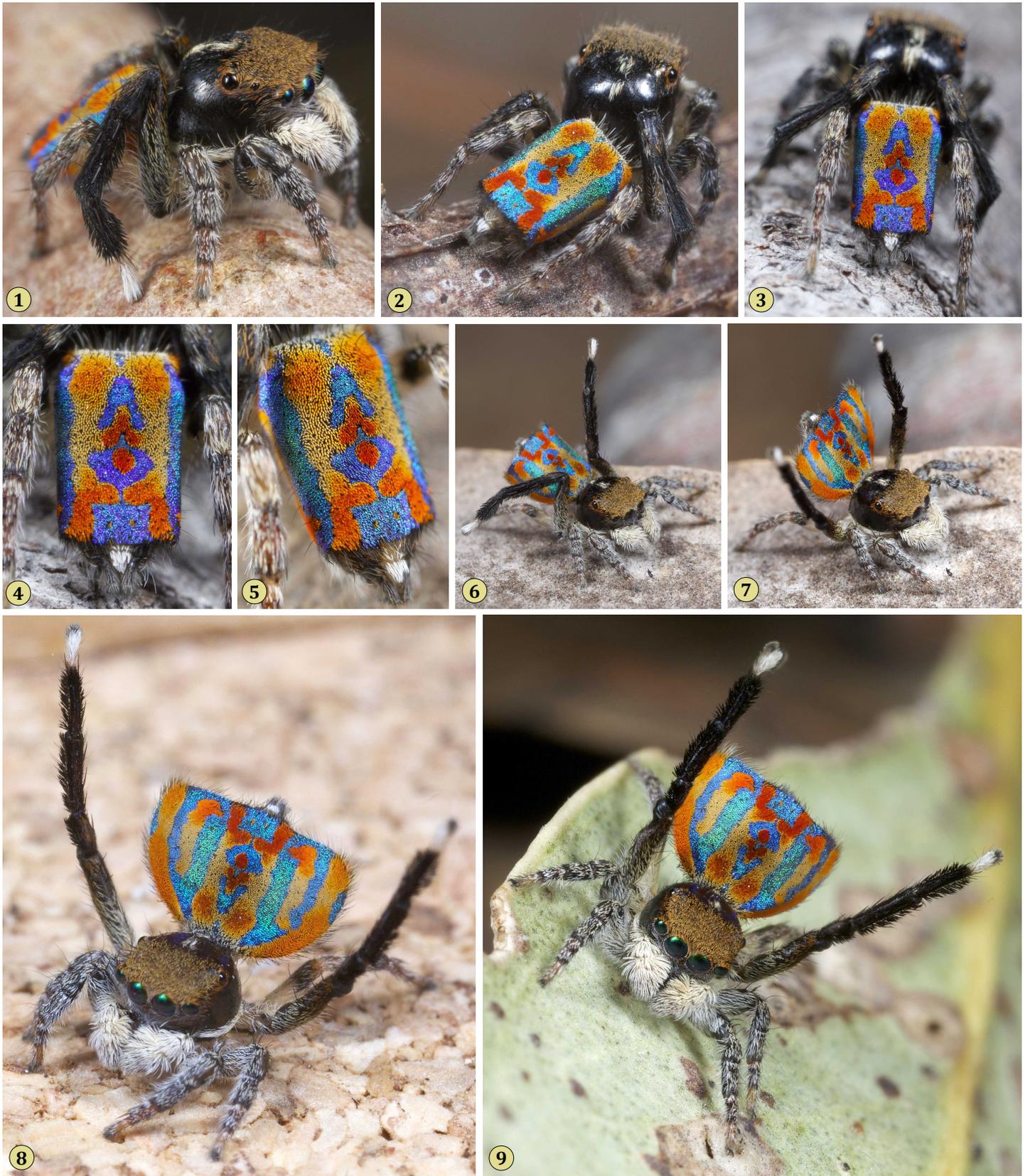


Figure 2. Living holotype male *Maratus clupeatus*. **2-5**, With flaps retracted, the distinctive ladder-like figure comprised of pigmented orange to red-orange scales is visible from above. **6**, Here the flaps of the fan are partly extended. **7-9**, When the lateral flaps are extended during display, two additional bands of orange to red-orange scales can be seen on either side. The posterior truncation of the fan in a nearly straight line is distinctive for this species. The V-shape of the extended legs III during this display is similar to that of *M. pavonis* and *M. splendens* (Hill & Otto 2011).

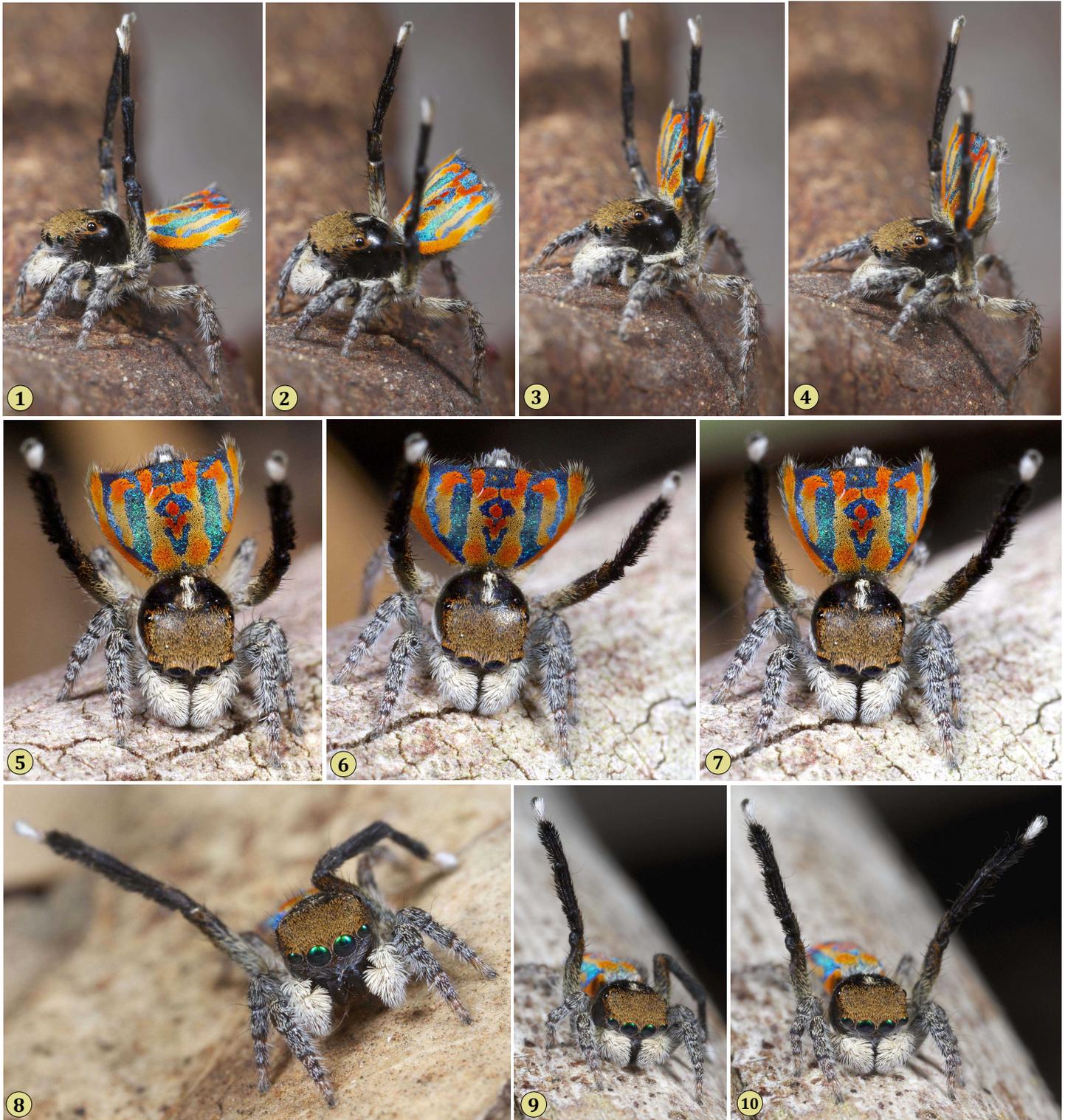


Figure 3. Display by the living holotype male *Maratus clupeatus*. **1-4**, Sequence in which the fan is expanded and raised behind the elevated legs III. **5-7**, Rotation and variable expansion of the fan can be seen in this sequence. **8-10**, Unilateral and bilateral signalling with legs III.



Figure 4. Two views of the living holotype male *Maratus clupeatus* as seen from below.

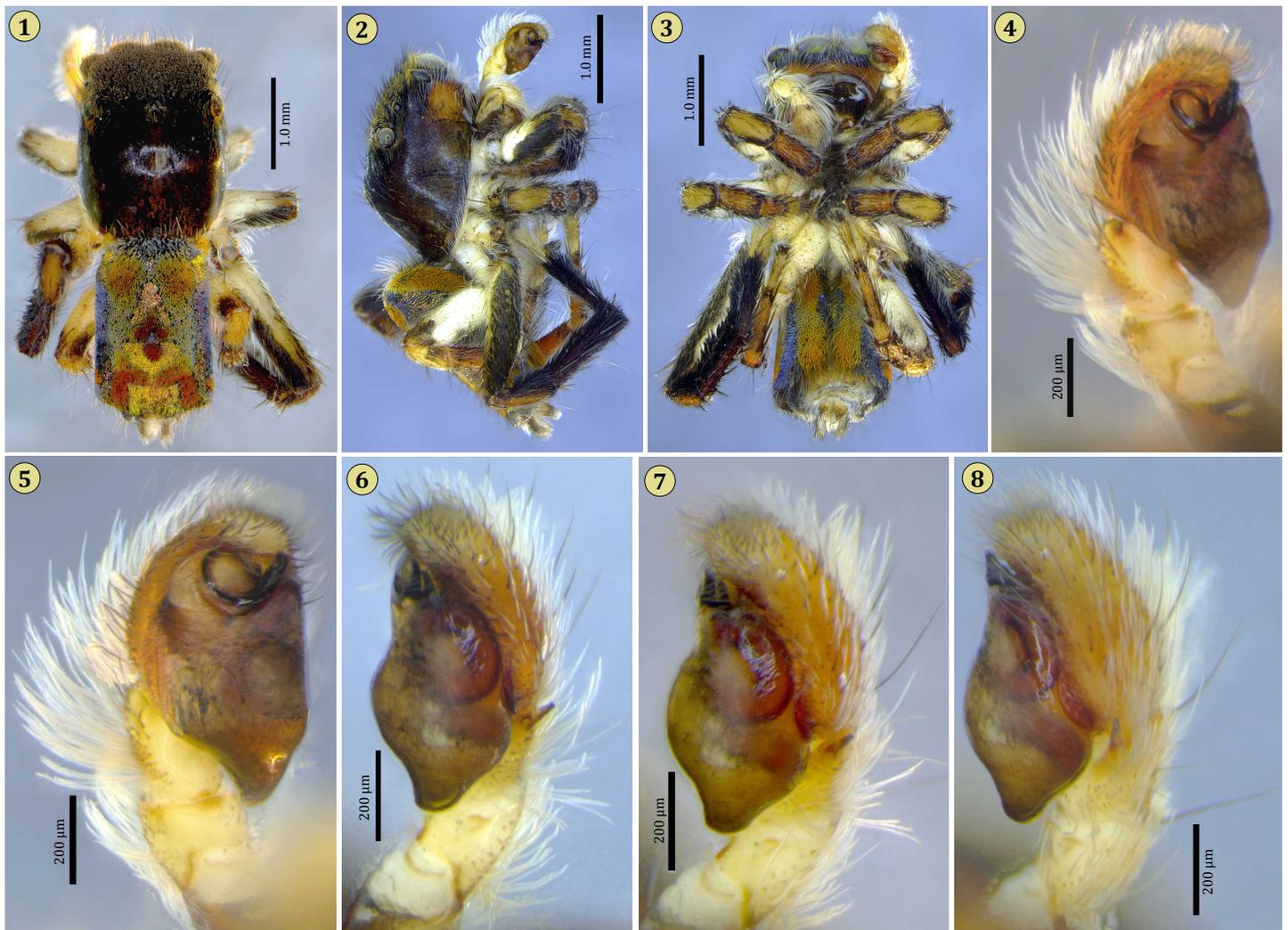


Figure 5. Holotype male *Maratus clupeatus* in ethanol. **1-3**, Three views of specimen with left pedipalp extended. **4-8**, Views of left pedipalp. As in other *Maratus* including members of the *pavonis* group (Otto & Hill 2013), heavy inner and outer apices of the embolus can be seen in lateral views (6-8).

The carapace is black, or dark brown in preserved specimens. The chelicerae are black, of average size for the genus. The anterior eyes are bordered with white scales below, and brown scales above. Numerous but not dense white setae are present on the dark clypeus, several projecting forward over the chelicerae at the median. The eye region is covered with uniform dense brown scales, extending laterally to surround the PLE. Behind the PLE row, and to the sides, the carapace is mostly black, except for a median band of white scales behind the PLE row that extends half-way to the rear margin, and a narrow marginal band of bright white setae on either side. The PME are closer to the PLE than to the ALE.

The opisthosoma bears a prominent dorsal plate with extensible flaps that, when not used in display, are wrapped around the lateral sides. The fully expanded plate (Figure 2:7-9) is weakly fringed laterally and to the rear. Distinctive markings of this plate readily identify the male *M. clupeatus*. On a field or background of uniform light blue to blue-green or purple iridescent scales (colour depending on illumination), the center of this plate is covered with a distinctive ladder-shaped figure comprised of orange to red-orange scales. When extended, each lateral flap reveals two broad bands of orange to red-orange scales. There is a small triangular tuft of white setae just above the anal tubercle as in other *Maratus*, and the spinnerets are of usual length and grey. The ventral opisthosoma (Figure 4) is dark toward the rear and light toward the front, with many long setae.

The sternum, labium, and endites are dark in living spiders. As viewed from below, the coxae, trochanters, and femora are light and translucent, or white in preserved specimens.

Legs I and II are about the same length, much shorter than legs III and IV. Legs III are by far the longest. Legs I, II, and IV are similar in appearance, light to dark brown with many white setae. There are no distinct rings or bands on these legs. Legs III are dark brown to black from femur to metatarsus, with a dense fringe of black setae along their length. Brown setae are also present on the anterior femur and dorsal patella of legs III. The cuticle of the tarsi III is light in colour, and these segments are covered with dense, bright white setae. Tenent setae of the footpads are dark grey.

Each pedipalp is densely covered dorsally with uniform, long, bright white setae. The pedipalp (Figure 5) is typical for the genus with a heavy apex of the embolus divided into inner and outer parts.

Jumping behaviour. Like other *Maratus* (Otto & Hill 2013), *M. clupeatus* power their jumps through rapid extension of legs III (Figure 6).



Figure 6. Male *M. clupeatus* positioned for take-off by raising legs I and II and flexing legs III against the underlying surface.

Habitat and distribution. In addition to the type locality in Warwick, *M. clupeatus* has been found at three additional sites within the Gnangara Mound (Figure 7). In Warwick (Figure 8), *M. clupeatus* have been seen on or near the ground in *Banksia* heath growing on white sand, and adult males have been found from 15 JUL to 25 AUG (Kinsey 2010, Anderson 2012), suggesting a very early seasonal emergence of adults. The *Banksia* (Proteaceae) woodland communities in this area are phreatophytic (groundwater-dependent), growing in well-drained sands of the subcoastal 'Bassendean dunes' (Sommer & Froend 2011). The Warwick Open Space is an open Jarrah/Marri/Tuart woodland with a *Banksia* subcanopy and an understorey of *Xanthorrhoea* and heathland; the Yanchep National Park and Melaleuca Park sites are similar, but at the former the eucalypt overstorey is much more sparse, and at the latter it is lacking altogether (Knowles, pers. comm.).

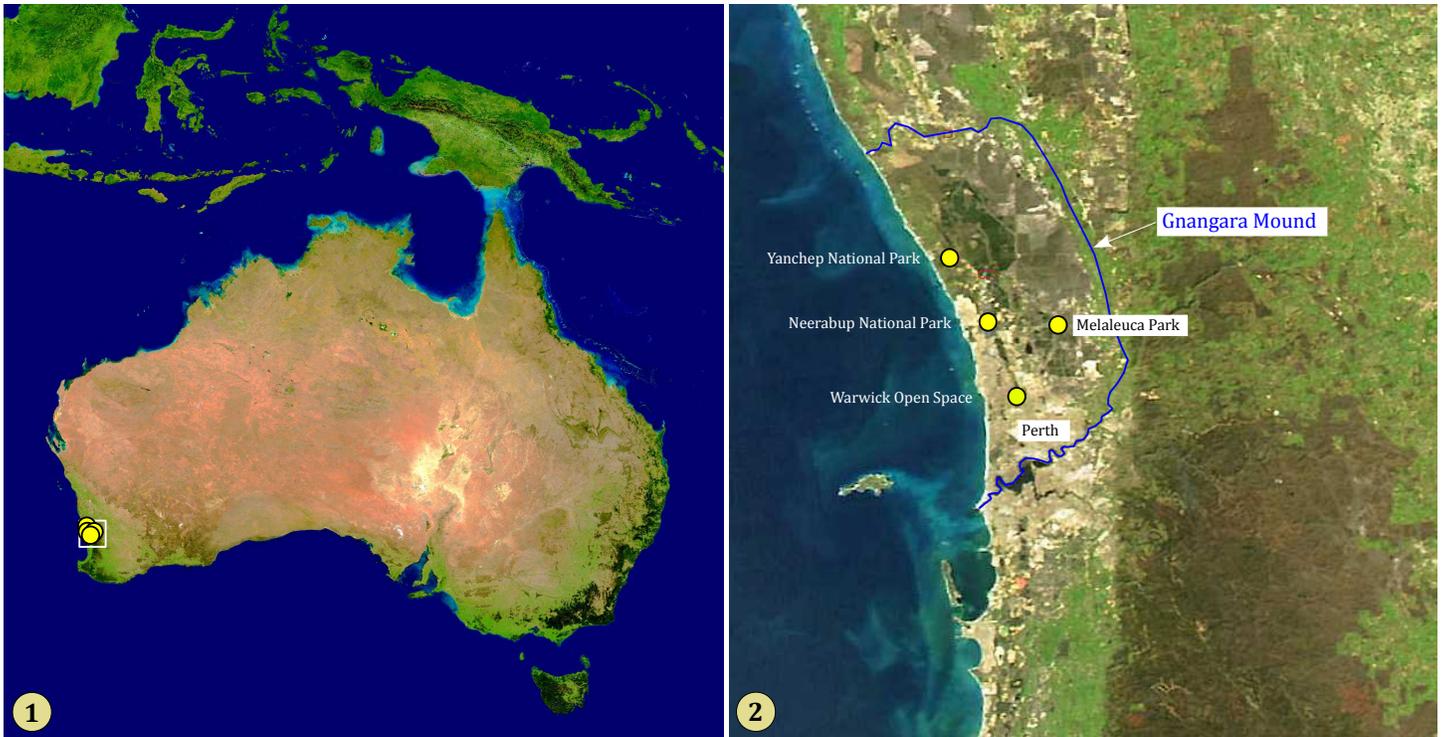


Figure 7. Localities where *Maratus clupeatus* has been found, all in the Gnangara Mound north of Perth in Western Australia: Warwick Open Space (type locality), Neerabup National Park (Waldock 2007, Cam 2010), Melaleuca Park (Knowles, pers. comm.), and Yanchep National Park (Knowles, pers. comm.). **2**, Shown as inset in (1), this satellite image was taken 15 JUL 2010. The blue line indicates the extent of the Gnangara Mound, a subterranean water feature (after Gnangara Sustainable Strategy 2014). Satellite images courtesy of NASA Visible Earth.

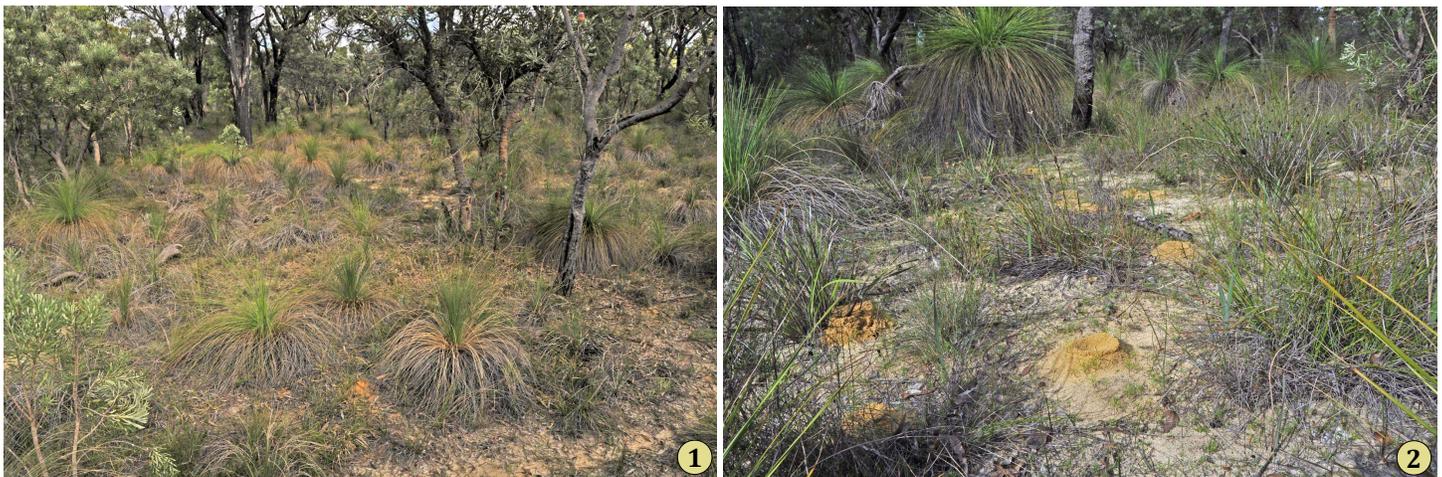


Figure 8. Two views of the Warwick Open Space site. Photographs copyright © David Knowles, used with permission.

Acknowledgments

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