

# A new species of peacock spider, *Maratus prozysniskii* sp. nov. (Araneae: Salticidae: Euophryini), from Tasmania, with a review of *Maratus* in Tasmania, Australia

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**ABSTRACT** – A new species of the peacock spider genus *Maratus*, *M. prozysniskii*, is described from north-eastern Tasmania, Australia. This species appears most similar to *M. velutinus* Otto and Hill, 2012, and brings to four the number of described species of *Maratus* known from Tasmania: *M. pavonis* (Dunn, 1947), *M. harrisi* Otto and Hill 2011, *M. tasmanicus* Otto and Hill 2013, and *M. prozysniskii* sp. nov.

**KEYWORDS:** taxonomy, morphology, peacock spiders, Tasmania, Australia

## INTRODUCTION

The genus *Maratus* was first described by Karsch (1878), and after being subsumed into *Saitis* by Bonnet (1958) following Simon (1901), was revalidated by Žabka in 1987. The genus was further expanded when Otto and Hill (2012) synonymised *Lycidas* Karsch, 1878, thus expanding *Maratus* to cover more than 45 species, with another six recently described species (*M. madelineae* Waldock, 2014, *M. hortorum* Waldock, 2014, *M. jactatus* Otto and Hill, 2015a, *M. sceletus* Otto and Hill, 2015a, *M. elephants* Otto and Hill, 2015b and *M. personatus* Otto and Hill, 2015c) bringing the total number to 55 described species at the time of writing (World Spider Catalog, 2015).

Recent work by Maddison (2015) has confirmed the placement of *Maratus* within the Tribe Euophyrini, a monophyletic group (based on molecular data) which has a cosmopolitan distribution and includes many Australasian taxa.

This study documents the description of *Maratus prozysniskii* sp. nov. from specimens collected in heathlands of northeastern Tasmania for a spider survey supported by the Plomley Foundation. Additionally, a review of the other three named species of *Maratus* from Tasmania includes *M. tasmanicus* Otto and Hill, *M. pavonis* (Dunn), and *M. harrisi* Otto and Hill.

## MATERIAL AND METHODS

Material examined for this study is lodged in the Queen Victoria Museum and Art Gallery, Launceston,

Tasmania, Australia (QVM), Tasmanian Museum, Hobart, Tasmania, Australia (TM) and Australian Museum, Sydney, New South Wales, Australia (AM).

Specimens were preserved and described in 75% ethanol, illuminated with Halogen lights, and illustrated with the abdomen and cephalothorax in a horizontal position. Female genitalia were examined by dissecting epigynes and clearing them in 10% lactic acid overnight. Epigynes were mounted in glycerol and illustrated with a camera lucida on a Leica DM 2500 compound microscope. Other drawings and measurements were made using a Leica MS5 or Leica MZ16A stereo microscope and Leica Application Suite V3.8.0 from Leica Microsystems Ltd.

## TAXONOMY

**Family Salticidae Blackwall, 1841**

**Subfamily Salticinae Blackwall, 1841**

**Tribe Euophryini Simon, 1901**

**Genus *Maratus* Karsch, 1878**

*Maratus* Karsch, 1878: 27.

## TYPE SPECIES

*Maratus amabilis* Karsch, 1878, by subsequent designation of Bonnet (1957: 2713).

## COMPOSITION

At the time of writing, the World Spider Catalog (2015) listed 55 species under the genus *Maratus*.

## REMARKS

The specific (and often spectacular) colour patterns on male *Maratus* species are the result of specialised short squamous setae which cover the dorsal abdominal scute and parts of the dorsal carapace, however in the two species discussed in this paper, *M. velutinus* Otto and Hill, 2012 and *M. prozysniskii* sp. nov., the squamous abdominal setae are lengthened and noticeably extend beyond the posterior edge of the abdomen (Figures 1–2; see also Otto and Hill, 2012, figure 67(2)).

In other species of *Maratus* it has been noted that when preserved in alcohol, the vibrancy of the colours of the squamous setae may be reduced, e.g. setae that appear red in life will show as orangey to light brown and with *M. prozysniskii* sp. nov. this is compounded by the fading of the specimens over time so that the once black long squamous setae on the abdomen range from dark brown through to orangey brown.

***Maratus prozysniskii* sp. nov.**

Prószynski's peacock spider

<http://zoobank.org/urn:lsid:zoobank.org:act:7696C5CC-2992-47C3-98AE-56E872DA961E>

Figures 1–9

## MATERIAL EXAMINED

*Holotype*

**Australia: Tasmania:** ♂, Eddystone Point, Mt William National Park, site 4, 41°00'02"S 148°19'15"E, October 1987, T. Churchill (QVM 13:1257).

*Paratypes*

**Australia: Tasmania:** 1 ♀, Eddystone Point, Mt William National Park, site 3, 40°59'44"S 148°19'27"E, October 1986, T. Churchill (QVM 13:186); 10 ♂, 1 ♀, same data except site 4, 41°00'02"S 148°19'15"E, October 1986, T. Churchill (QVM 13:175, 13:178-9, 13:180-4, 13:187); 17 ♂, 3 ♀, same data except site 4, 41°00'02"S 148°19'15"E, November 1986, T. Churchill (QVM 13:155, 13:158, 13:164, 13:167-9, 13:297, 13:716, 13:160-1, 13:154, 13:163, 13:157); 3 ♂, 2 ♀, same data except site 4, 41°00'02"S 148°19'15"E, December 1986, T. Churchill (QVM 13:190, 13:193-4, 13:191, 13:197); 1 ♀, same data except site 4, 41°00'02"S 148°19'15"E, May 1987, T. Churchill (QVM 13:1200); 1 ♀, same data except site 3, 40°59'44"S 148°19'27"E, October 1987, T. Churchill (QVM 13:3470); 12 ♂, 1 ♀, same data except site 4, 41°00'02"S 148°19'15"E, October 1987, T. Churchill (QVM 13:1253-4, 13:1258, 13:1259, 13:1260, 13:1262-4, 13:1267, 13:1273, 13:3313,

13:3575); 11 ♂, 6 ♀ same data except site 4, 41°00'02"S 148°19'15"E, November 1987, T. Churchill (QVM 13:1225, 13:1227, 13:1230, 13:1232, 13:1234-5, 13:1236, 13:1238, 13:1239, 13:1241, 13:1242, 13:1244, 13:1245, 13:1246, 13:1274, 13:3915, 13:19531); 7 ♂, 3 ♀, same data except site 4, 41°00'02"S 148°19'15"E, December 1987, T. Churchill (QVM 13:1204, 13:1206, 13:1215, 13:1217, 13:4231, 13:1210-1, 13:1218); 1 ♀, same data except site 3, 40°59'44"S 148°19'27"E, January 1988, T. Churchill (QVM 13:4594); 1 ♀, same data except site 4, 41°00'02"S 148°19'15"E, January 1988, T. Churchill (QVM 13:4595).

*Additional material*

**Australia: Tasmania:** 1 ♂, Waterhouse Point [Waterhouse Conservation area], site 1, 40°50'51"S 147°38'07"E, October 1986, T. Churchill (QVM 13:84); 1 ♂, same data except site 2, 40°50'20"S 147°40'45"E, October 1986, T. Churchill (QVM 13:188); 2 ♂, same data except site 1, 40°50'51"S 147°38'07"E, November 1986, T. Churchill (QVM 13:171, 13:174); 1 ♂, same data except site 2, 40°50'20"S 147°40'45"E, November 1986, T. Churchill (QVM 13:159); 1 ♀, same data except site 1, 40°50'51"S 147°38'07"E, January 1987, T. Churchill (QVM 13:1193); 1 ♂, 1 ♀, same data except site 1, 40°50'51"S 147°38'07"E, November 1987, T. Churchill (QVM 13:1243); 1 ♂, 1 ♀, same data except site 2, 40°50'20"S 147°40'45"E, November 1987, T. Churchill (QVM 13:1240, 13:1237).

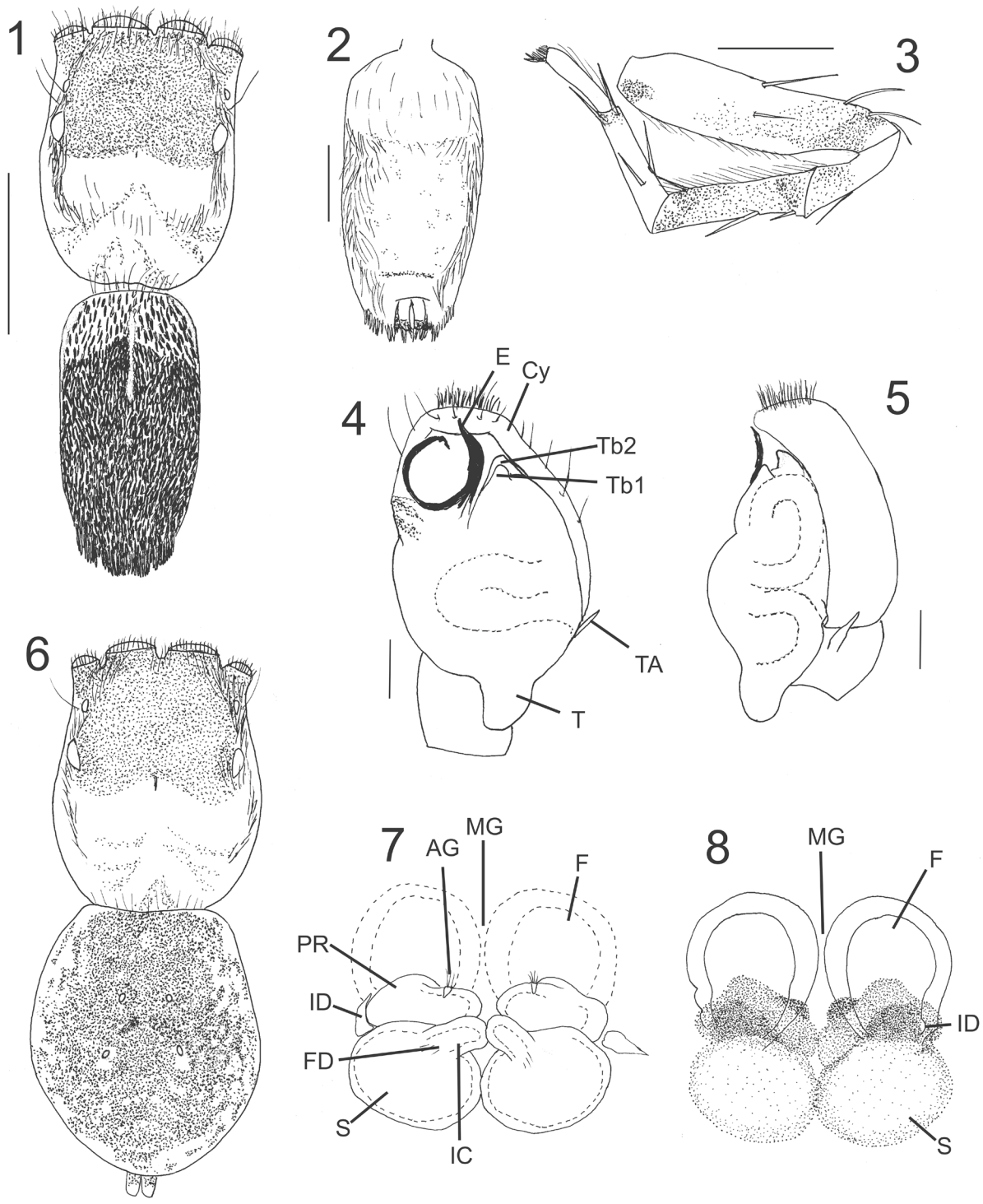
## DIAGNOSIS

Males of *Maratus prozysniskii* sp. nov. can be distinguished from all other known species of *Maratus*, other than *M. velutinus*, by the presence of elongate rather than truncate squamous setae on the abdominal scute (which extend noticeably beyond the posterior edge of the scute: see Figure 2), and by the lack of abdominal flaps and lack of thick brushes on leg III (Figure 3). *Maratus prozysniskii* sp. nov. differs from *M. velutinus* by the presence of an anterior narrow band of mauve-grey/blue-green squamous setae, by an elongate central stripe anterior to a small mauve-grey/blue-green central spot, and by the presence of short brownish bristles within the ocular quadrangle and white setae around the anterior eyes, and by the absence of a strip of white setae posterior to the fovea (Figure 1). In contrast, *M. velutinus* has reddish bands extending behind the anterior eyes, broad white bands between these eyes, and a broad band of white setae extending from between the AME and beyond the fovea to a point three-quarters down the length of the pars thoracica (see Otto and Hill 2012, figures 68, 69).

## DESCRIPTION

*Male (holotype)*

Cephalothorax black to dark brown with white setae bordering lateral edges and clypeus. No squamous setae. Dense patches of fine white setae extend from behind



FIGURES 1–8 *Maratus prozysniskii* sp. nov., male holotype (QVM 13:1257): 1, cephalothorax and abdomen, dorsal view; 2, abdomen, ventral view; (QVM 13:1257): 3, left leg III, prolateral view; 4, left pedipalp, ventral view (QVM 13: 1243); 5, left pedipalp, retrolateral view (QVM 13:1243). Female paratype (QVM 13:3470): 6, cephalothorax and abdomen, dorsal view; 7, cleared epigyne, dorsal view; 8, epigyne, ventral view. Scale lines = 1 mm (Figures 1, 6), 0.5 mm (Figures 2, 3), 0.1 mm (Figures 4, 5), 0.2 mm (Figs 7, 8). Cy = cymbium; E = embolus; T = tegulum; TA = tibial apophysis; TB1–2 = tegular bulges 1–2; AG = accessory gland; F = fossa; FD = fertilisation duct; IC = intermediate canal; ID = insemination duct; MG = median guide; PR = proximal receiver; S = spermatheca.

anterior lateral eyes, below posterior lateral eyes and along sides of cephalothorax, dissipating before steep drop to posterior margin; no white patch of short setae posterior to fovea. Anterior eyes fringed with creamy setae along dorsal margin; rest of cephalothorax lightly covered with scattered short white setae and brown bristles (Figure 1). Clypeus tan, chelicerae tan, cream distally. Maxillae light brown, labium tan with cream edge. Sternum tan.

Venter of abdomen dark yellow with greyish smudges anteriorly, border above spinnerets dark grey; spinnerets grey. Venter posterior to epigastric furrow covered with pelt of long cream setae, densest along border with dorsal scute. Dorsal abdominal scute not developed as lateral flaps (Figure 2). Entire dorsum densely covered in dark brown elongate squamous setae, except for a very small central spot of mauve-grey/blue-green short squamous setae and a narrow central elongate stripe extending from anterior margin of abdomen to just above the central spot (Figure 1). Posterior border of abdominal scute fringed with elongate brown squamous setae which extend over spinnerets (Figures 1, 2). Anterior third of dorsum lighter brown than rest (Figure 1), edged with thin line of mauve-grey/blue-green short squamous setae, no stiff bristles at anterior corners of abdomen. Stiff long brown bristles projecting from anterior border of abdomen (Figure 1). Abdomen swollen anteriorly raising anterior part of scute, exposed sides of abdomen with greyish patterning, no squamous setae. The long venter setae do not extend onto these lateral regions (Figure 2).

Legs I, II, III and IV: proximal femora pale yellow dorso-anteriorly with dark grey patches ventro-posteriorly; patellae and tibiae tan; metatarsi and tarsi pale yellow with grey bands at joints; covered with dense short white setae interspersed with black bristles. Leg III: patella, tibia, metatarsus and tarsus with brush of fine white setae dorso-ventrally. No long setae covering claws (Figure 3).

Pedipalpal femur grey, distal segments creamy yellow. Tibial apophysis straight, narrowing distally from a broad base (Figure 5). Cymbium, dorsal tibia and dorsal patella densely covered with long white setae, a single very long black seta on dorsal pedipalpal patella; tibia and cymbium with a few long creamy setae on ventral side just under tegulum. Embolus with broad tip and conductor closely aligned with embolus into tight coil, tucked under tip of cymbium; tegulum with two bulges adjacent to embolus (Figure 4).

#### *Female (paratype, QVM 13:3470)*

Ocular region tan, densely covered with short brown setae; areas around eyes black-brown with white setae in patches around all eyes; rest of cephalothorax yellowish-grey with scattered brown setae. With pale grey bands posterior to ocular area (Figure 6). Clypeus

light yellow; chelicerae yellow with light grey patches, maxillae, labium light yellow with white border. Sternum yellow with light grey edging.

Abdomen oval with tan dorsal sigillae and brown bristles scattered amongst brown and creamy setae; most of dorsum covered in diffuse greyish patch on creamy background that narrows to point above spinnerets, three creamy chevrons between posterior sigillae and spinnerets (Figure 6). Venter of abdomen cream, with small grey spots in longitudinal rows. Ventral spinnerets cream, dorsal pair light grey.

Femora and patellae of all legs creamy; dorsal femora of legs III and IV with light grey central stripe, femora I and II with grey stripe only in proximal third; all leg segments except metatarsi I and II and tarsi I to IV with light grey patches at joints; all femora with light grey patches ventro- and posterolaterally.

Proximal receivers of epigyne large, separated from each other at median guide. Intermediate canals abutting each other across median guide, resting on spermathecae, openings directed off-centre of anterior of spermathecae. Insemination duct opening on lower lateral border of fossae (Figures 7–8).

#### *Dimensions (mm)*

Holotype ♂ (paratype ♀, QVM 13:3470): total length (excluding chelicerae) 3.36 (4.03). Carapace length 1.60 (2.08). Abdomen length 1.70 (2.08). Leg I: femur 0.64 (0.84), patella 0.42 (0.62), tibia 0.46 (0.42), metatarsus 0.40 (0.31), tarsus 0.34 (0.27). Leg II: femur 0.59 (0.86), patella 0.46 (0.60), tibia 0.41 (0.42), metatarsus 0.37 (0.37), tarsus 0.33 (0.37). Leg III: femur 1.14 (1.39), patella 0.50 (0.64), tibia 0.70 (0.73), metatarsus 0.54 (0.68), tarsus 0.36 (0.33). Leg IV: femur 0.84 (1.04), patella 0.36 (0.65), tibia 0.59 (0.68), metatarsus 0.48 (0.75), tarsus 0.35 (0.43). Legs, relative lengths: III: IV: I: II/III: IV: II: I.

#### DISTRIBUTION

*Maratus proszynskii* has been collected from two widely separated locations of heathland (for site descriptions see Churchill, 1996) in northeastern Tasmania, namely Mount William National Park (two sites near Eddystone Point) and Waterhouse Conservation Area (two sites near Waterhouse Point) (see Figure 9). Waterhouse and Eddystone Points are approximately 58 km apart, with the intervening habitat consisting of areas that have been cleared for farmland and other purposes. Mount William National Park (Eddystone Point) is the larger reserve, now consisting of 18,425 hectares, first established in 1973 (MWNP, 2010). Tracey Churchill's (1996) study sites 3 and 4 were located up to 800 m inland from the beach zone on the coast south of Eddystone Point. The Waterhouse Point sites, in Waterhouse Conservation Area (WCA), are less than 600 m from the beaches on the eastern and western sides of the point. The WCA extends in a narrow band

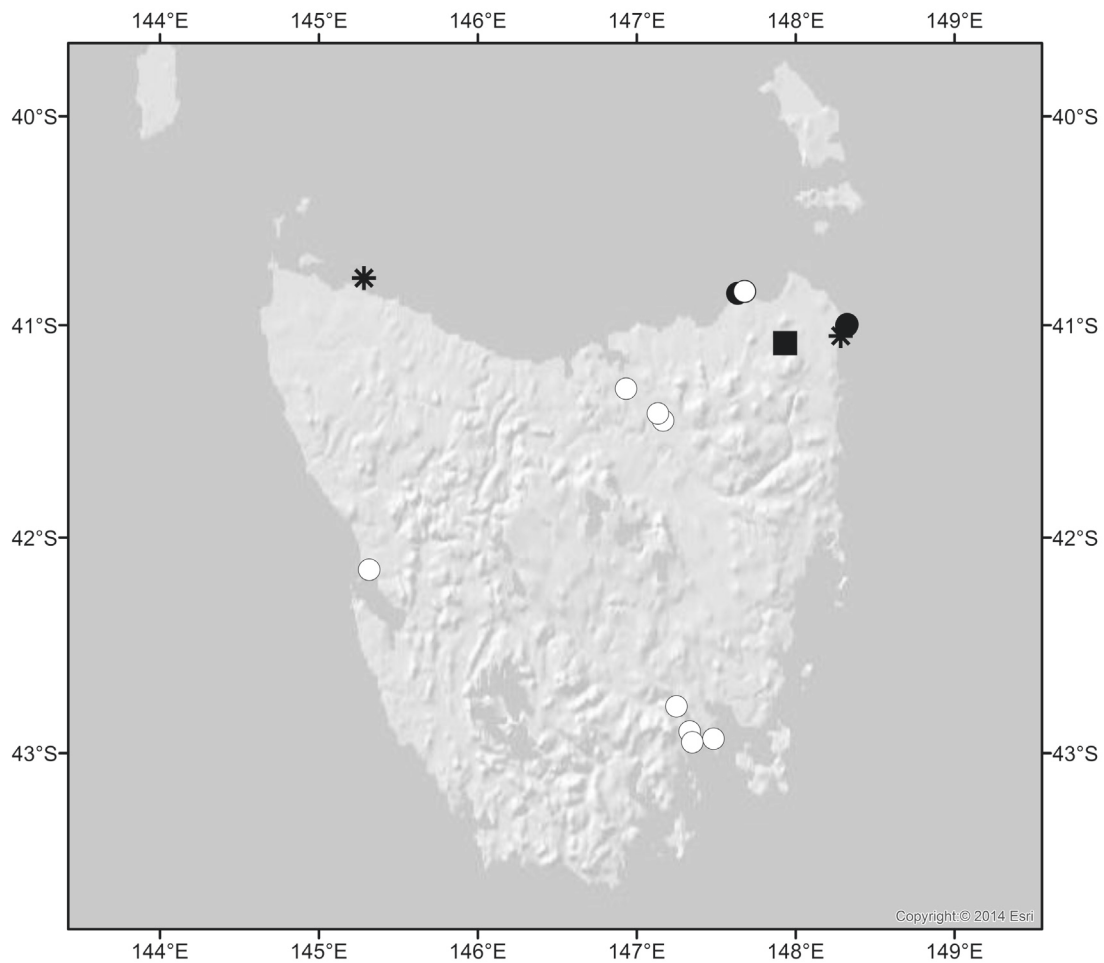


FIGURE 9 Map of Tasmania with the collection sites for *Maratus prozyskii* sp. nov. (closed circles); *Maratus pavonis* (open circles); *Maratus harrisi* Otto and Hill, 2011 (closed square); *Maratus tasmanicus* Otto and Hill, 2013 (asterisks).

from around the point and south-westerly along the coast, encompassing 6, 953 hectares and one of the largest areas of heathland on the Tasmanian northeast coast (WCAMP 2003).

#### REMARKS

*Maratus prozyskii* closely resembles *M. velutinus*, with the males of both species possessing dark-brown to black elongate squamous setae, and lacking brushes on leg III and lateral abdominal flaps (see Otto and Hill, 2012). In addition to the differences in colour pattern on the carapace and abdomen (see Diagnosis, above), the males of *M. velutinus* are slightly larger than those of *M. prozyskii*, with the total length of *M. velutinus* ranging from 3.25 to 4.20 mm averaging 3.76 mm ( $n = 7$ ), whilst *M. prozyskii* males range from 2.98 to 3.98 mm averaging 3.43 mm ( $n = 10$ ).

Otto and Hill (2012) describe the embolic tip of *M.*

*velutinus* as consisting of the apices of the inner and outer rings of the embolus which present a prominent distal apex (see Otto and Hill 2012, figures 67-5, -6, -7); this statement is interpreted here as referring to the conductor being shorter than the embolus resulting in the embolus tip extending above the tip of the conductor. This arrangement of the embolus and conductor has been noted by Žabka (1987: page 472), “[e]mbolus narrow, forming a single coil, accompanied by a shorter strongly sclerotized conductor”. Upon comparison the embolic tip of *M. velutinus* is broader than that of *M. prozyskii* but the overall arrangement of the embolus and conductor does not differ significantly (see Figures 4, 5).

The female of *M. velutinus* is unknown so it is not possible to compare them with *M. prozyskii*.

Both *M. velutinus* and *M. prozyskii* share characters that separate them from the more spectacular species of

*Maratus*. The lack of brightly coloured squamous setae on the abdomen, lack of squamous setae in the optical quadrangle and most significantly, the lack of brushes on leg III suggest that these two species may be closely related.

#### ETYMOLOGY

The specific epithet is a patronym in honor of Polish Professor Dr Jerzy Prószyński, who, since 1969, has dedicated a lifetime to salticid systematics.

#### *Maratus tasmanicus* Otto and Hill, 2013

*Maratus tasmanicus* Otto and Hill, 2013: 14, figs 15–25.

#### MATERIAL (NOT EXAMINED)

**Australia: Tasmania:** Stanley, 40°46'30.71"S 145°16'58.65"E, J. Otto (TM); Ansons Bay, 41°03'S 148°17'E, 1 January 1929, V. V. Hickman (AM KS30911) as listed in Otto and Hill, 2013.

#### *Maratus pavonis* (Dunn, 1947)

*Saitis pavonis* Dunn, 1947: 83.

*Maratus pavonis* (Dunn): Žabka, 1991: 39; Otto and Hill, 2014: 46, figs 52–55.

#### MATERIAL EXAMINED

**Australia: Tasmania:** 1 ♂, no data, (QVM 13:42186); 1 ♂, Claremont, Hobart, [42°47'S 147°15'E], inside house, 5 December 1982, B. Watson, (TM J2721); 2 ♀, Exeter [41°18'S 146°56'E], 21 November 1970, R. T. G. (QVM 13:42902-3); 2 ♂, Invermay, Launceston, [41°25'S 147°08'E], 19 March 1996, V. Case (QVM "1796"); 1 ♂, Launceston, [41°27'S 147°10'E], 16 November 1970, R. Upsom (QVM 13:42904); 1 ♂, Launceston, [41°27'S 147°10'E], 1 December 1975, H. Dell (QVM 13:42905); 1 ♂ [abdomen missing], Lower Sandy Bay, Hobart, [42°54'S 147°20'E], 2 November 1975, E. L. Martin, (TM J1079); 1 ♂, same locality, E. L. Martin, (TM J1161); 1 ♂, same locality, 13 December 1983, K. Medlock (TM E1907); 1 ♂, Punchbowl, [41°27'S 147°10'E], 26 November 1994, G. Finnigan (QVM 13:16588); 1 ♂, Sandford, [42°56'S 147°29'E], inside of window in house, 30 October 1984, M. Gaffney, (TM J1936); 1 ♂, Strahan, *Melaleuca* swamp, [42°09'S 145°19'E] on ground cover, 15 November 1973, K. C. Collins (AM KS17120); 1 ♂, Tarooma, [42°57'S 147°21'E], 5 January 1977, R. J. Burns, (TM J1171); 1 ♂, 1 ♀ [very faded], Waterhouse Point, site 2, 40°50'20"S 147°40'45"E, Dec. 1987, T. Churchill (QVM 13:1203).

#### Other Tasmanian *Maratus* Species

#### *Maratus harrisi* Otto and Hill, 2011

*Maratus harrisi* Otto and Hill, 2011: 4, figs 4-10.

#### MATERIAL EXAMINED

**Australia: Tasmania:** 1 ♂, Friend Creek, E of Pioneer, in pitfall trap in open bracken, [41°05'S 147°56'E], 27 March 1990, R. Taylor (TM J3113).

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