

## A new species of *Maratus* from southwestern Australia (Araneae: Salticidae)

Julianne M. Waldock

Western Australian Museum, Francis Street, Perth, Western Australia 6000, Australia

**Abstract** – A new species of jumping spider, *Maratus mungaich*, is described from the banksia woodlands and jarrah forests of southwestern Western Australia. *Maratus amoenus* Żabka, 1987, is designated as a junior primary homonym and junior primary synonym of *M. amoenus* Karsch, 1878.

### INTRODUCTION

The Australian jumping spider genus *Maratus* was described by Karsch (1878) for the species *M. amabilis* Karsch and *M. amoenus* Karsch, but *M. amabilis* Karsch was later tentatively synonymised with *Saitis* Simon by Simon (1901). Żabka (1987) redescribed both *M. amabilis* and *M. amoenus* based on the type material in the Zoological Museum in Berlin and revalidated *Maratus* as a separate genus. Males of many species of the genus possess brilliantly coloured abdomens, making them easy to recognise in the field and in museum collections. A relatively common species found in the banksia, marri and jarrah mixed forests of southwestern Australia is described here.

### MATERIALS AND METHODS

Material is lodged in the Western Australian Museum (WAM) and the South Australian Museum, Adelaide (SAM). The female genitalia was examined by dissecting the epigynum from the abdomen and clearing it in 10% lactic acid for 10 min. in a warm water bath. The epigynum was mounted in glycerol and drawn with a camera lucida. Other drawings were made using a graticule fitted to a Wild dissecting microscope.

### SYSTEMATICS

#### Family Salticidae

#### Genus *Maratus* Karsch

*Maratus* Karsch, 1878: 27; Żabka, 1987: 479.

*Saitis*?: Simon, 1901: 564–565.

#### Type species

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

### Remarks

In 1987 Żabka resurrected *Maratus*. Males of *Maratus* species have various modifications to their abdomens which include long fringing hairs or extendable side-flaps as well as special coloured hairs which give the abdomen a silk-like lustre which can vary in colour according to the angle of view, similar to a peacock's tail feathers. These modifications and the colours and patterns of the coloured hairs are species specific. Males also have the third legs longer than the others and these legs have thick black hairs on the dorsal surfaces of the tibia and metatarsi whilst the tarsi of these legs have thick white hairs on the dorsal surface.

Female *Maratus* do not have any of the special attributes of the males and must be distinguished from related genera by genitalic differences. The main distinguishing feature in female *Maratus* genitalia is that the spermathecae are wider than the fossae (Figs 8,9).

### Abbreviations

The names of some collectors have been abbreviated as follows in the *Other Material* section: M.S. Harvey (MSH), J.M. Waldock (JMW), A. Sampey (AS), A.E. de Jong (AEJ).

### *Maratus mungaich* sp. nov.

Figures 1–10

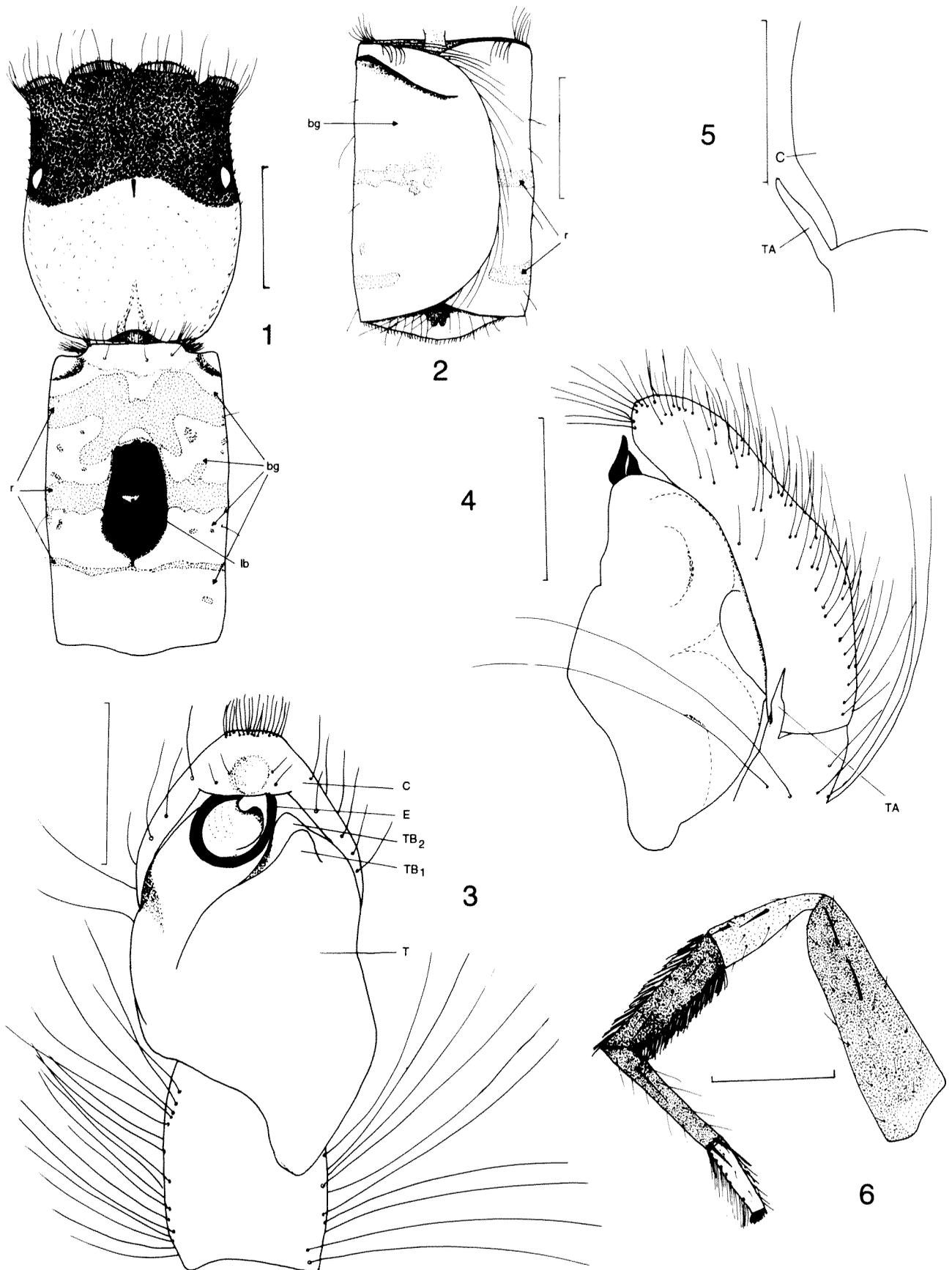
### Material Examined

#### *Holotype*

♂, Mt Cooke, Western Australia, Australia, 32°25'S, 116°18'E, 1 October 1990, M.S. Harvey, J.M. Waldock (WAM 93/1635).

#### *Paratypes*

**Australia: Western Australia:** 1♂, base of Mt Cooke, 32°25'S, 116°18'E, 29 September 1990, J.M. Waldock (WAM 93/1628); 6♂, 1♀, Mt Cooke,



**Figures 1-6** *Maratus mungaich* sp. nov.: 1, cephalothorax and abdomen, dorsal; 2, abdomen, ventral, folded abdominal flaps; 3, left pedipalp, ventral; 4, left pedipalp, retrolateral; 5, left pedipalp, tibial apophysis, dorsal; 6, right leg III, retrolateral. Holotype ♂, WAM 93/1635. Scale lines = 0.5 mm. Abbreviations: C (cymbium), E (embolus), TA (tibial apophysis), TB1 (anterior tegular bulge), TB2 (posterior tegular bulge), T (tegulum); bg (blue/green/purple/rose-gold), lb (light blue), r (red/orange/brown).

32°25'S, 116°18'E, 1 October 1990, M.S. Harvey, J.M. Waldock (WAM 93/1629-34; 93/2091); 3♂, same data as holotype, 19 September 1991, M.S. Harvey, J.M. Waldock (WAM 93/1636-8); 1♂, same data as holotype, 12 October 1991, J.M. Waldock (WAM 93/1639); 3♂, 1♀, same data as holotype, 13 October 1991, J.M. Waldock (WAM 93/1640-3).

#### Other Material

**Australia: Western Australia:** 1♂, Armadale, [32°10'S, 116°01'E], January 1974, M. Morcombe (WAM 93/1617); 1♂, 4 km N. of Beraking Brook, ca. 32°09'S, 116°25'E, 29 September 1991, JMW (WAM 93/1618); 2♂, 1 juv. ♀, 2 juvs, Bluff Knoll, 34°23'S, 118°15'E, 29 November 1988, D. Knowles (WAM 93/1619-23); 1♂, Crowea Forest, 34°28'S, 116°10'E, ridge site, area A, open forest (regrowth), 8 Nov. 1979, S.J. Curry (WAM 93/1649); 1♂, Hartfield Park, Forrestfield, [31°59'S, 115°58'E], August 1976, R. Browne (WAM 93/1624); 1♂, Julimar Road, [ca. 31°31'S, 116°14'E], 28 September 1986, JMW (WAM 93/1625); 1♂, Julimar Road, [ca. 31°31'S, 116°14'E], 18 September 1986, JMW (WAM 93/1626); 1♂, Julimar State Forest, [ca. 31°31'S, 116°14'E], 18 September 1988, D. Knowles (WAM 93/1627); 2♂, Manjimup, [34°15'S, 116°09'E], 30 November 1926, L. Cheney (WAM 26/801-802); 1♂, S. slope of Mt Dale, 32°08'S, 116°18'E, 30 September 1991, JMW (WAM 93/1644); 1♂, 3 km N. of Mt Dale, 32°08'S, 116°18'E, 5 October 1992, JMW (WAM 93/1645); 1♂, Parmelia, [32°15'S, 115°50'E], 10 October 1986, AEJ (WAM 93/1646); 1♂, Parmelia, [32°15'S, 115°50'E], 18 May 1989, AEJ (WAM, 93/1647); 1♂, Parmelia, [32°15'S, 115°50'E], 13 Sept. 1989, AEJ (WAM 93/1648); 1♂, Perth Airport, site 7, wet pitfalls, 31°58'34"S 115°58'25"E, 24 June - 28 July 1993, MSH, JMW, AS (WAM 93/2334); 1♂ (abdomen and one leg III only), Perth Airport, site 6, wet pitfalls, 31°58'05"S 115°58'05"E, 28 July - 23 Sept. 1993, JMW *et al.* (WAM 93/2335); 1♂, "South-western Australia", 28 January 1912, (SAM N1993731); 1♂, Talbot Road Reserve, site 1, 31°52'05"S 116°03'04"E, 28 July 1993, JMW, AS (WAM 93/1650); 1♂, 1 juv., Talbot Road Reserve, site 1, wet pitfalls, 31°52'05"S 116°03'04"E, 10 May - 24 June 1993, MSH, JMW (WAM 93/2336-7); 3♂, 1 juv., Talbot Road Reserve, site 1, wet pitfalls, 31°52'05"S 116°03'04"E, 24 June - 28 July 1993, MSH, JMW, AS (WAM 93/2338-41); 3♂, 1♀, Talbot Road Reserve, site 4, wet pitfalls, 31°52'23"S 116°02'46"E, 24 June - 28 July 1993, MSH, JMW, AS (WAM 93/2342-5); 1♂, 20 km NW. of Toodyay, [31°24'S, 116°20'E], 30 September 1992, G. Harold (WAM 93/1651).

#### Diagnosis

*Maratus mungaich* differs from all other described and undescribed species known to the author by

the following combination of characters:

Male with abdominal lateral edges extended into flaps that fold under and overlap when folded. Abdomen with purple/green/rose-gold broad transverse stripes alternating with narrow red stripes with blue central patch on a black background. Only tibia III with brush of black hairs.

Female with splotched abdomen. Entire body yellow, no markings on venter. Epigyne with swollen proximal receivers, intermediate canals lie lengthwise across anterior portion of spermathecae with openings towards external lateral anterior margin of spermathecae.

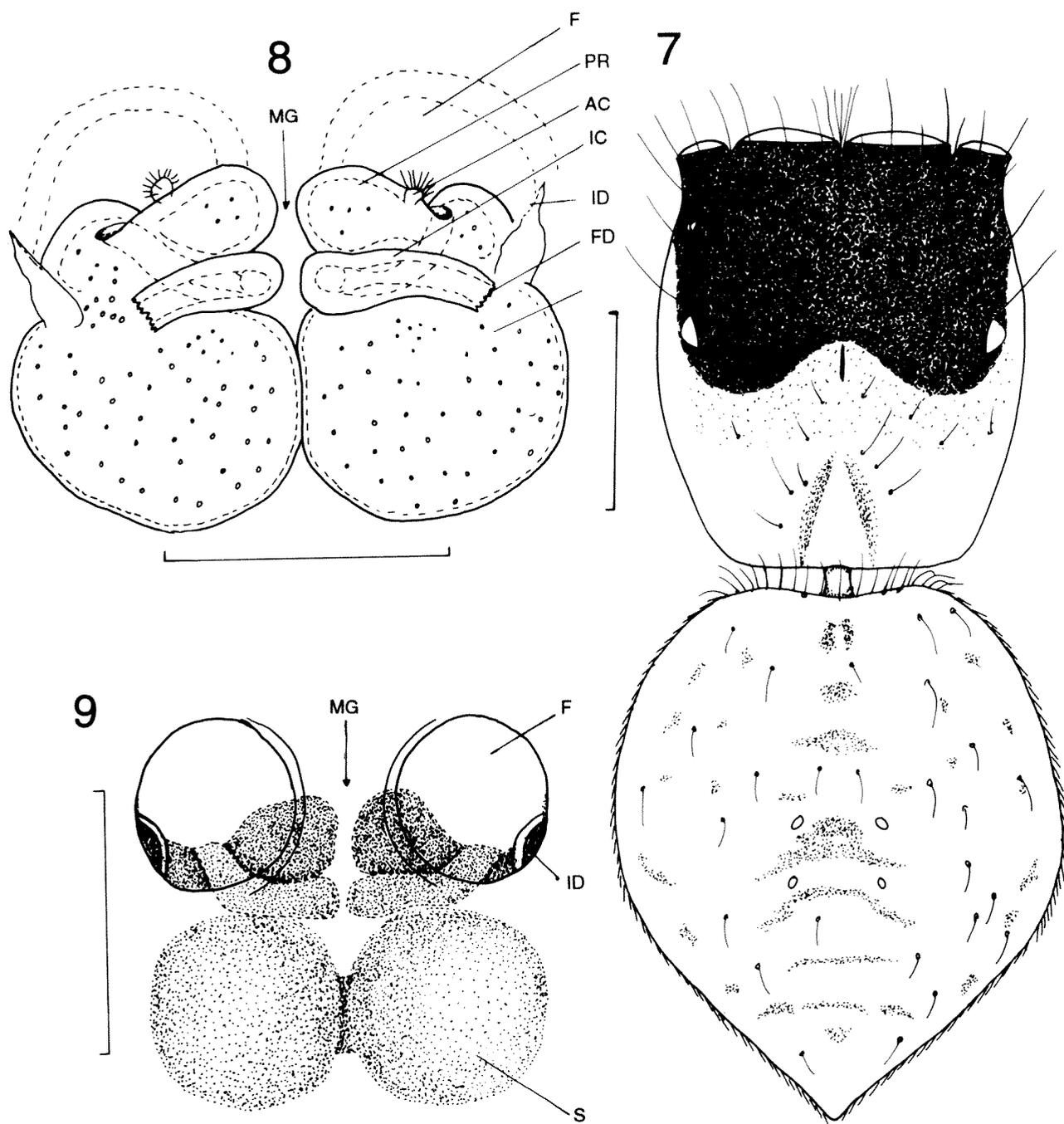
#### Description

##### Male (holotype)

Cephalothorax black to dark brown with white hairs bordering lateral edges. Dense scattering of brown (orange in life) flat hairs covers ocular region. Anterior eyes fringed with bright orange hairs along dorsal edge; rest of cephalothorax lightly covered with scattering of short white hairs. Abdomen rectanguloid and dorsal surface covered with species specific pattern of short squamous hairs which reflect different colours when viewed at different angles. Abdominal sides developed as lateral flaps which fold over each other but can be extended laterally to exhibit a continuation of dorsal pattern. Abdominal pattern consists of alternating transverse stripes of red/orange/brown narrow and wider blue/purple/rose-gold/green. Centre with a matte black oval patch which contains a small triangular light blue patch. Anterior corners of abdomen with red/orange patches and stiff bright orange bristles extending from these patches. Stiff long black bristles project from anterior border of abdomen (Fig. 1). Long white hairs border the abdominal flaps (Fig. 2).

Clypeus and chelicerae dark brown. Maxillae, labium light cream. Sternum dark brown; venter of abdomen pale yellow with greyish smudges; spinnerets black. Palp light cream with scattered greyish patches (Figs 3-5). Tibial apophysis narrow, straight except for a slight inward distal curve. Ventral surface of palpal tibia without spurs. Cymbium, dorsal tibia and dorsal patella densely covered with long white hairs, a single very long black hair on dorsal palpal patella, tibia and cymbium as well as a few on external ventral side just under tegulum. Embolus tightly coiled and tucked under tip of cymbium; tegulum with two bulges, one behind the other, next to embolus; anterior bulge smaller.

Legs: femora, patellae and tibiae dark brown to red-brown coloured; metatarsi and tarsi light cream. Covered with dense short white hairs interspersed with black bristles except for leg III



**Figures 7–9** *Maratus mungaich* sp. nov.: 7, cephalothorax and abdomen, dorsal; 8, epigyne, dorsal; 9, epigyne, ventral. Paratype ♀, WAM 93/2091. Scale lines = 0.5 mm (Figures 7,9), 0.2 mm (Figure 8). Abbreviations: AG (accessory gland), ID (insemination duct), IC (intermediate canal), F (fossa), FD (fertilisation duct), MG (median guide), PR (proximal receiver), S (spermatheca).

which has a brush of bristles and thick hairs on tibia, metatarsus and tarsus; tibia III ventrally with thick brush of black bristles; tibia III dorsally with medium brush of black bristles. Metatarsus III with scattering of white hairs; tarsus III with a brush of long white bristles, especially dense on dorsal surface, that extend over tips of claws (Fig. 6).

*Female* (paratype, WAM 93/2091)

Ocular region black with short black and white hairs, rest of cephalothorax tan grading to yellow towards posterior with scattered black hairs. Two

tan stripes extend from posterior edge towards centre and join at top of cephalothorax. Abdomen oval with dark yellow sigillae; faint dark greyish smudges on a light yellow to cream background with black bristles scattered amongst dark hairs (Fig. 7).

Clypeus, chelicerae, maxillae, labium yellow. Sternum cream to pale yellow. Venter of abdomen cream, without markings. Ventral spinnerets cream coloured; dorsal spinnerets greyish. Legs: yellow with a pair of greyish patches or faint stripes on the ventral surface of all femora (retrolateral on

legs I and II, and prolateral on legs III and IV).

Epigyne: proximal receivers of epigyne somewhat swollen towards median guide, well separated. Distal portion of long intermediate canals lie length-wise across anterior portion of the spermathecae and are also well separated. Openings of intermediate canals situated towards external lateral anterior margin of spermathecae (Figs 8–9).

*Dimensions (mm), holotype ♂, WAM 93/1635 (paratype ♀, WAM 93/2091)*

Total length (excluding chelicerae) 4.8 (5.2). Carapace length 2.4 (2.4). Abdomen length 2.4 (2.8). Leg I: femur 1.0 (1.0), patella 0.7 (0.7), tibia 0.6 (0.6), metatarsus 0.5 (0.5), tarsus 0.4 (0.4). Leg II: femur 1.1 (0.8), patella 0.6 (0.5), tibia 0.6 (0.6), metatarsus 0.5 (0.5), tarsus 0.4 (0.4). Leg III: femur 1.7 (1.3), patella 0.8 (0.8), tibia 1.0 (0.9), metatarsus 0.7 (0.8), tarsus 0.5 (0.5). Leg IV: femur 1.3 (1.2), patella 0.6 (0.7), tibia 0.8 (0.8), metatarsus 0.9 (0.9), tarsus 0.4 (0.5). Legs, relative lengths: III:IV:I,II (III:IV:I:II).

#### Remarks

Known only from southwestern Australia, north and east to Julimar Road, north-west of Toodyay, and as far south as Crowea forest near Pemberton. *Maratus mungaich* is found in banksia (*Banksia grandis* Willdenow), marri (*Eucalyptus calophylla*

Lindsey) and jarrah (*Eucalyptus marginata* Donn ex Smith) mixed forests (Fig. 10). A colour photograph of the male can be found in Morcombe (1978, 1985).

Most authors seem to be unaware that Karsch described two species of *Maratus* when establishing the genus in 1878, *M. amabilis* (p. 27) and in a footnote, *M. amoenus* (p. 28). The latter was based upon a male specimen lodged in the Zoological Museum of Berlin, catalogue no. 1554. This specimen was subsequently redescribed by Žabka (1987) as *M. amoenus* Žabka, which is a junior primary homonym and junior primary synonym of *M. amoenus* Karsch (**new synonymy**).

Both species originally included in *Maratus* qualify as type species of the genus, which was not designated by Karsch (1878). Bonnet (1957) appears to be the first author to nominate *M. amabilis* Karsch as the type species.

#### Etymology

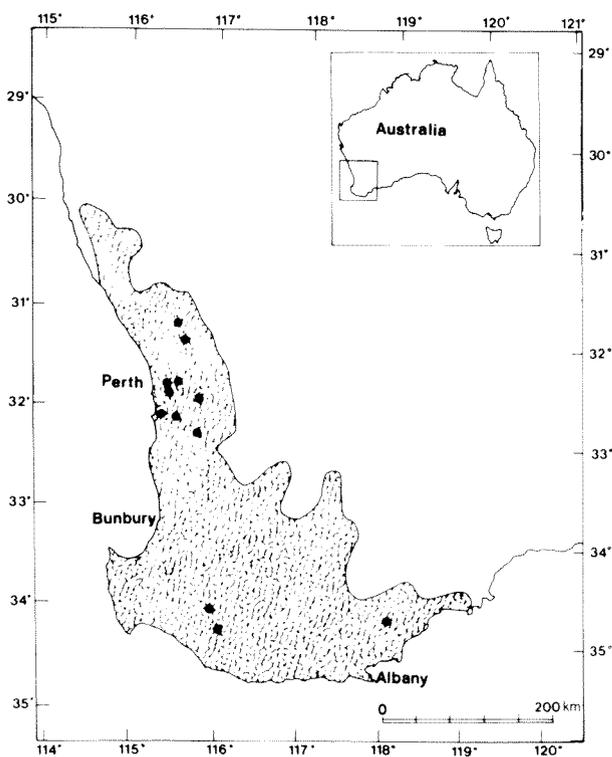
The specific epithet is derived from the southwestern Aboriginal (Nyoongar) word for "banksia" (Bindon and Chadwick 1992).

#### ACKNOWLEDGEMENTS

This paper is dedicated to Dr Barbara York Main in honour of her continued and varied interest in arachnids in Western Australia. Mark Harvey offered valuable comments on a draft of the manuscript. Additional thanks to Drs Robert Raven and Marek Žabka for constructive reviews of this paper.

#### REFERENCES

- Bindon, P. and Chadwick, R. (1992). *A Nyoongar Wordlist from the South-West of Western Australia*. Western Australian Museum, Perth.
- Bonnet, P. (1957). *Bibliographia Araneorum*, 2(3). Douladoure, Toulouse.
- Karsch, F. (1878). Diagnoses Attoidarum aliquot novarum Novae Hollandiae collectionis Musei zoologici Berolinensis. *Mitteilungen des Münchener Entomologischen Verein*, München 2: 22–32.
- Morcombe, M. (1978). *Australian Nature Close-up*. Lansdowne Press, Dee Why West, N.S.W.
- Morcombe, M. (1985). *Australian Nature Close-up*. Reed Books, Frenchs Forest, N.S.W.
- Simon, E. (1901). *Histoire Naturelle des Araignées*, 2. Roret, Paris.
- Taylor, A. and Hopper, S.D. (1991). *The Banksia Atlas*. Australian Government Printing Service, Canberra. (Australian Flora Series No. 8).
- Žabka, M. (1987). Salticidae (Araneae) of Oriental, Australian and Pacific Regions, II. Genera *Lycidas* and *Maratus*. *Annales Zoologici* 40: 451–482.



**Figure 10** Map of southwestern Western Australia. Shaded area indicates the distribution of mangite or bull banksia, *Banksia grandis* Willdenow (after Taylor and Hopper 1991), with the collection localities of *Maratus mungaich* sp. nov. indicated by solid circles.