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Revision of the Australian wolf spider genus *Dingosa* Roewer, 1955 (Araneae, Lycosidae)

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Abstract

The Australian wolf spider genus *Dingosa* Roewer, 1955 is revised to include four species: *Dingosa simsoni* (Simon, 1898) (type species); *D. humphreysi* (McKay, 1985), n. comb.; *D. murata* n. sp.; and *D. serrata* (L. Koch, 1877), n. comb. *Dingosa* belongs to the subfamily Lycosinae Sundevall, 1833 and differs from all other lycosine spiders by the structure of the male pedipalp, which has an enlarged embolic division and an unusually elongated tegular apophysis. The median septum of the female epigyne is inverted T-shaped with the corners of the transverse part bent anteriorly in some species. Additional somatic characters, such as a raised cephalic region and distinct colour patterns of prosoma (narrow light longitudinal band between eyes) and opisthosoma (serrated cardiac mark) are unique within the Australian Lycosinae. Species within the genus *Dingosa* prefer sandy habitats with a sparse cover of vegetation where they construct a characteristic turret around their burrow entrance. All species mature in late summer to winter; females with eggsac can usually be found in July and August. The holotype of the Australian *Dingosa topaziopsis* (Hogg, 1896) is an immature spider and accurate species identification is not possible. This species is here considered *nomen dubium*. *Dingosa* is an Australian genus with much derived lycosine morphology. Other species from outside Australia currently included in this genus do not conform to the diagnosis of *Dingosa*. We propose the following new generic placements based on a critical evaluation of the original descriptions: *Pardosa angolensis* (Roewer, 1959), n. comb. (Angola), *Pardosa completa* (Roewer, 1959), n. comb. (Mozambique), *Pardosa hartmanni* (Roewer, 1959), n. comb. (Tanzania), and *Trochosa ursina* (Schenkel, 1936), n. comb. (China). We also support Mozaffarian and Marusik's (2001) previous suggested combination *Trochosa persica* (Roewer, 1955). *Dingosa traghardi* (Lawrence, 1947) (South Africa) was described from an immature female holotype which is lost; this species is here considered *nomen dubium*.

Keywords: Arachnida, Araneae, Australia, *Dingosa*, *Lycosa*, new species, *Pardosa*, systematics, taxonomy, turret-building

Introduction

The wolf spider genus *Dingosa* Roewer, 1955 was initially listed as *nomen nudum* (Roewer 1955a) and formerly described by the same author in a subsequent publication based on the female holotype of *Lycosa simsoni* Simon, 1898 collected in Launceston, Tasmania

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(Australia) (Roewer 1955b). Subsequently, *Dingosa* was considered a junior synonym of *Allocosa* Banks, 1900 (Guy 1966) but this synonymy in addition to many other taxonomic decisions by Guy (1966) was not accepted in later catalogues (e.g. Platnick 1998, 2007). Hickman (1967) re-described what he believed to be *Dingosa simsoni* in detail (in *Lycosa* Latreille, 1804), however, it appears that he never examined the type material of this species as he erroneously illustrated and described an enigmatic, trapdoor-building wolf spider, in Australia commonly known as “Grey Wolf Spider”, that shows only remote similarity with the true *D. simsoni*. Unfortunately, Hickman’s (1967) mistake persisted in the literature and the scientific name *D. simsoni* is commonly attributed to the Grey Wolf Spider (e.g. Mascord 1970; Australian Museum 2003).

It is therefore not surprising that McKay (1979), when he re-described *Lycosa serrata* L. Koch, 1877, did not recognize that this species is congeneric with *D. simsoni*. However, McKay (1979) did realize that the unusual morphology of the male pedipalp excluded this species from *Lycosa* or *Geolycosa* Montgomery, 1904, where *Lycosa serrata* was previously placed. Subsequently, he transferred *L. serrata* to *Pardosa* C. L. Koch, 1847 based on a perceived similarity of the male pedipalp. He also described a second species with similar morphology in *Pardosa*, *P. humphreysi* McKay, 1985 (McKay 1985a). In addition to a peculiar somatic and genital morphology, both *P. serrata* and *P. humphreysi* are well known for their unusual habit of constructing a palisade or turret of litter or rocks around their burrow (Lane 1965; Main 1976; McKay 1979, 1985a). Similar behaviour has been reported in the Australian *Mainosa longipes* (L. Koch, 1878) (Framenau 2006a) and in some species of the Holarctic genus *Geolycosa* (Wallace, 1942).

Although somewhat unusual due to an enlarged embolic division and an extended tegular apophysis of the male pedipalp, *Dingosa* clearly conforms to the diagnosis of the wolf spider subfamily Lycosinae Sundevall, 1833 (Dondale 1986). The Lycosinae are the most speciose of the Australian wolf spider subfamilies, in addition to the Zoicinae Lehtinen and Hippa, 1979, Venoniinae Lehtinen and Hippa, 1979, and Artoriinae Framenau, 2007 (e.g. Framenau 2006c, 2007; Yoo and Framenau 2006). A recent molecular phylogenetic analysis including 70 world-wide wolf spider terminals suggested that Australian Lycosinae belong to two distinct clades. The genus *Venatrix* Roewer, 1960 and the related *Tuberculosa* Framenau and Yoo, 2006 appear to have closest relationships to Northern Hemisphere taxa, whereas all other Australian Lycosinae formed a monotypic clade with the South American *Pavocosa gallopavo* (Mello-Leitão, 1941) suggesting a clade of Gondwanan origin (Murphy et al. 2006).

The aim of our study is to revise taxonomically the four Australian species of the wolf spider genus *Dingosa*, including *D. murata* n. sp., which is new to science. In addition, we critically review all other non-Australian species currently listed in *Dingosa* and suggest alternative generic placements mainly based on the original descriptions of these species.

Methods

Our study of *Dingosa* forms part of a systematic revision of the wolf spiders of Australia and is based on a comprehensive examination of about 20,000 records of wolf spiders from all major museum collections in this country. Type material lodged overseas was either borrowed or personally examined whilst the senior author visited the respective institutions.

Spiders were examined in 70% EtOH with a Wild stereomicroscope (Heerburg, Germany). Female genitalia were prepared for examination by submersion in lactic acid at room temperature for 1–3 h. All measurements are in millimetres (mm). Species descriptions and re-descriptions in the taxonomic part of this publication list the type species first, followed by all other species in alphabetical order. The morphological

nomenclature follows Framenau (2006b) with the exception of female genitalia for which we applied the terminology of Sierwald (2000).

Photographs were taken with a digital camera (G6; Canon, Japan) that was connected to the optical tube of a stereomicroscope (MZ6; Leica Microsystems, Wetzlar, Germany) with an optical adapter set (MaxView[™] Plus; Scopetronix, Cape Coral, FL, USA). Photographs were taken in different focal planes (ca 10–15 images) and combined with the software package Helicon Focus 4.07 (Khmelik et al. 2006).

The following abbreviations are used. Eyes: AE, anterior; AME, anterior median; ALE, anterior lateral; PE, posterior; PME, posterior median; PLE, posterior lateral. Measurements (adult spiders, if not otherwise stated): TL, total length; PL, prosoma length; PW, prosoma width; OL, opisthosoma length; OW, opisthosoma width. Collections: AM, Australian Museum, Sydney; BMNH, Natural History Museum, London; MCZ, Museum of Comparative Zoology, Harvard, Cambridge, MA; MHNP, Museum National d'Histoire Naturelle, Paris; NMV, Museum Victoria, Melbourne; QM, Queensland Museum, Brisbane; SAM, South Australian Museum, Adelaide; SMF, Senckenberg Museum, Frankfurt; WAM, Western Australian Museum, Perth; ZMB, Museum für Naturkunde, Zentralinstitut der Humboldt-Universität, Berlin.

Key to the species of *Dingosa*

1. Dark cardiac mark on opisthosoma strongly serrated, first anterior serration forms a distinct angle of ca 45° with body axis (Figure 1A, B, G, H); tegular apophysis of male pedipalp without basal tooth (Figures 2C, 6A); female epigyne with continuous anterior margin (Figure 2E) or much longer than wide (Figure 6C) 2
 - Dark cardiac mark on opisthosoma weakly serrated, with two flat, tooth-like shapes on either side (Figure 1C–F); tegular apophysis of male pedipalp with basal tooth (Figures 3A, 5A); lateral edges of transverse part of median septum extend anteriorly (Figures 3C, 5C) 3
2. Tip of tegular apophysis of male pedipalp curled ventrally (Figure 2D); epigyne wider than long and with continuous anterior margin (Figure 2E) *D. simsoni*
 - Tip of tegular apophysis blunt, distinctly keeled in ventral view (Figure 6A); female epigyne longer than wide and anterior margin not continuous (Figure 6C) *D. serrata*
3. Tip of tegular apophysis of male pedipalp distinctly curved ventrally (Figure 3B); lateral edges of transverse part of median septum in female epigyne reaching under the anterior pockets (Figure 3C) *D. humphreysi*
 - Tip of tegular apophysis of male pedipalp more or less straight (Figure 5B); lateral edges of transverse part of median septum in female epigyne truncated (Figure 5C) *D. murata* n. sp.

Taxonomy

Order ARANEAE Clerck, 1757

Family LYCOSIDAE Sundevall, 1833

Subfamily LYCOSINAE Sundevall, 1833

Dingosa Roewer, 1955

Lycosa Latreille, 1804 (in part): L. Koch 1877, p 930–932; Hickman 1967, p 80.

Pardosa C. L. Koch, 1847 (in part): Simon 1909, p 191–192; McKay 1979, p 225–229; McKay 1985a, p 101–105; McKay 1985b, p 85.

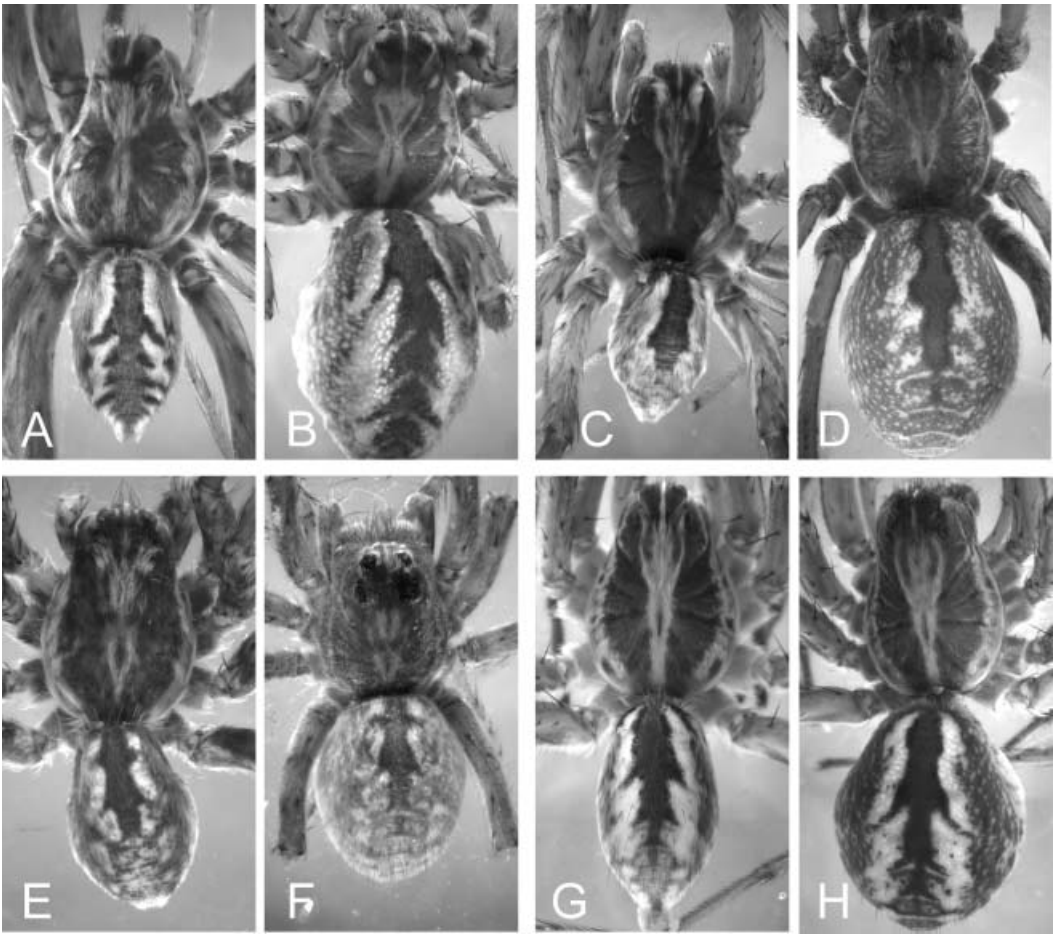


Figure 1. Photographs (dorsal view) of species of *Dingosa*. (A) Male of *D. simsoni* (Simon) from Grass Patch, Western Australia (WAM T62462); (B) female of *D. simsoni* (Simon) from Carnegie Homestead, Western Australia (WAM T53725); (C) male of *D. humphreysi* (McKay) from Hambidge, South Australia (SAM NN 16745); (D) female of *D. humphreysi* (McKay) from Goongarrie, Western Australia (WAM 84/649); (E) male holotype of *D. murata* sp. n. from Zuytdorp, Western Australia (WAM T51303); (F) female paratype of *D. murata* sp. n. from North Tarin Rock Nature Reserve, Western Australia (WAM 71/1428); (G) male of *D. serrata* (L. Koch) from Bold Park, Perth, Western Australia (WAM T58362); (H) female of *D. serrata* (L. Koch) from Murdoch University campus, Perth, Western Australia (WAM T62470).

Allocosa Banks, 1900 (in part): Guy 1966, p 33, 47, 63.

Geolycosa Montgomery, 1904 (in part): Roewer 1955a, p 243; McKay 1973, p 380.

Dingosa Roewer 1955a, p 240 (*nomen nudum*); Roewer 1955b, p 762–763.

Type species. *Lycosa simsoni* Simon, 1898, by original designation (Roewer 1955b) (gender feminine).

Diagnosis

Species of the genus *Dingosa* differ from all other species within the Lycosidae by a combination of somatic and genitalic characters. The cephalic area of the prosoma is

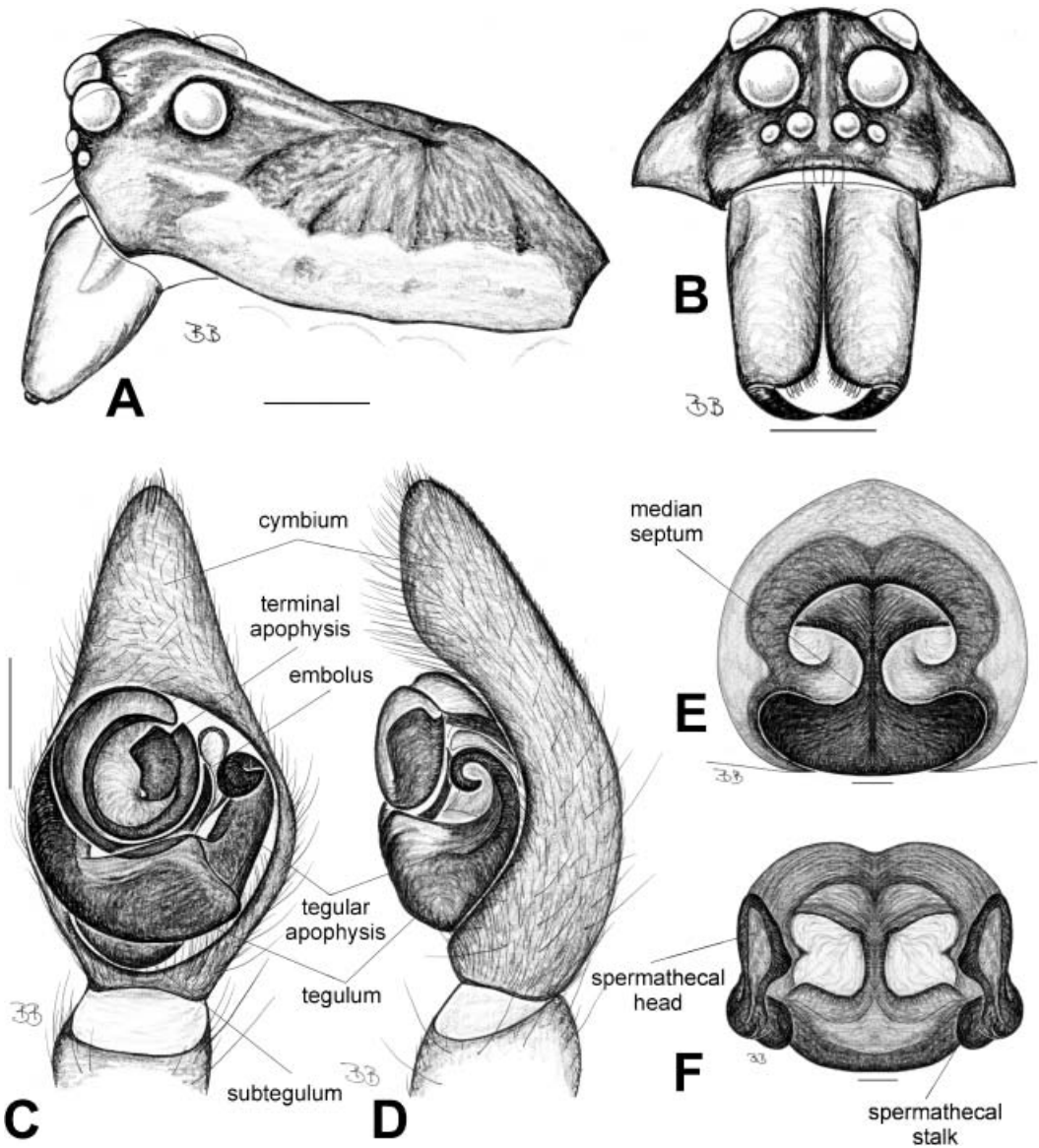


Figure 2. *Dingosa simsoni* (Simon), male from Grass Patch, Western Australia (WAM T62462) and female from Numbudding, Western Australia (WAM T53723). (A, B) Male carapace, lateral and frontal view. (C, D) Left pedipalp, ventral and lateral views, respectively; (E, F) female epigyne, ventral and dorsal views, respectively. Scale bars: 1.00 mm (A, B); 0.50 mm (C, D); 0.10 mm (E, F).

elevated (Figure 2A), the light median band of the prosoma has two short and longitudinal dark lines between fovea and PLE, and there is a narrow median light band between the eyes (Figure 1A–H). The opisthosoma has a unique serrated cardiac mark (Figure 1A–H). Legs are comparatively longer than in many other Lycosinae, in particular in males (average ratio leg length to prosoma width: leg 1=4.7, leg 2=4.5, leg 3=4.4, leg 4=5.9; $n=4$ species). In comparison, this leg ratio is much lower for the species of the Australian genus *Venatrix* (leg 1=3.6, leg 2=3.2, leg 3=3.0, leg 4=4.2; data for 17 species derived from

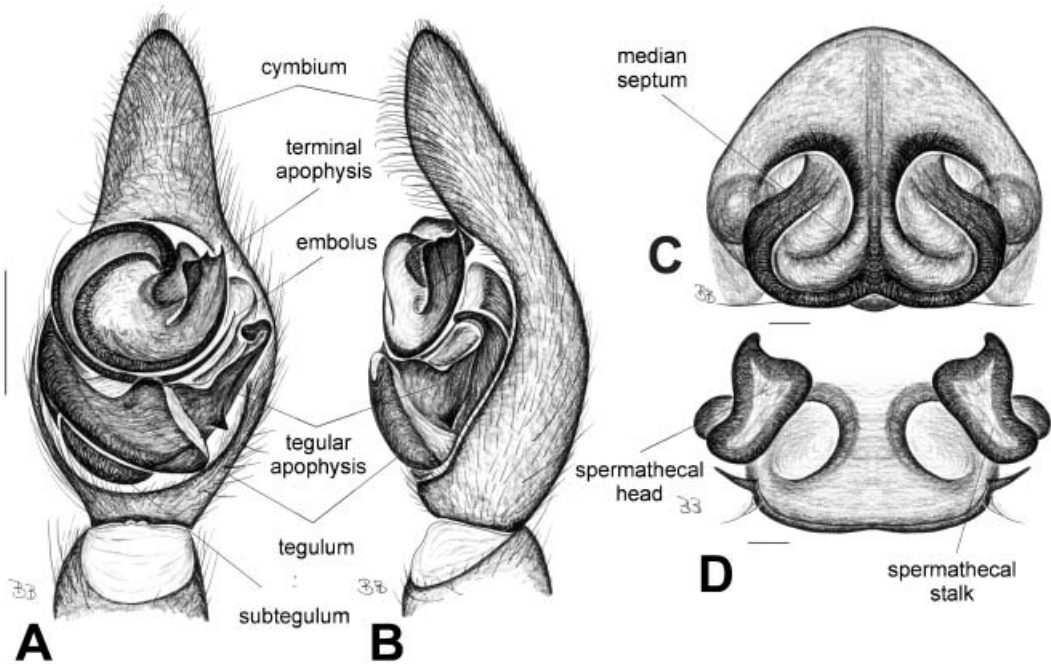


Figure 3. *Dingosa humphreysi* (McKay), male from Queen Victoria Springs Nature Reserve, Western Australia (WAM T48586) and female from Goongarrie, Western Australia (WAM 84/649). (A, B) Left pedipalp, ventral and lateral views, respectively; (C, D) female epigyne, ventral and dorsal views, respectively. Scale bars: 0.50 mm (A, B); 0.10 mm (C, D).

Framenau and Vink 2001). The embolic division is unusually large for members of the Lycosinae occupying at least half the length of the cymbium cavity, with long and curved terminal apophysis and embolus (Figures 2C, 3A, 5A, 6A). The tegular apophysis is elongated and points more or less apically, in contrast to most Lycosinae in which it points retrolaterally.

Description

Medium-sized wolf spiders (TL 6.50–15.00). Males smaller than females. Prosoma longer than wide, dorsal profile with distinctly elevated cephalic region (Figure 2A). Flanks of cephalic region steep in frontal view (Figure 2B). Dorsal shield of prosoma brown to dark brown with light median and submarginal bands. Median band with two short dark lines between PLE and fovea, sometimes forming a V. Narrow white line of white setae medially between eyes. AME larger than ALE, AE row shorter than PME row; AE row slightly procurved (Figure 2B). Chelicerae with three promarginal teeth, with the median largest and three retromarginal teeth of equal size. Labium about as long as wide, but generally little longer than wide in males and little wider than long in females. Opisthosoma dorsally light grey to dark olive-grey with distinct darker serrated cardiac mark in anterior half, accentuated by light lateral bands (Figure 1A–H). Leg formula IV>I>II>III. Legs brown with longitudinal dark pattern (*D. serrata*, *D. simsoni*) or indistinct light patches (*D. humphreysi*, *D. murata*). Spination of legs: males: femur: three dorsal, two apicoprolateral, two retrolateral (*D. humphreysi*, *D. serrata* only), one apicoretrolateral (missing in *D.*

murata); patella: one prolateral, one retrolateral; tibia: one dorsal in apical half, three ventral pairs, two prolateral, two retrolateral; metatarsus: three ventral pairs, two prolateral, one retrolateral, one apicoventral, one apicoprolateral, one apicoretrolateral. Females: three dorsal, two retrolateral (missing in *D. humphreysi*), two apicoprolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: three ventral pairs, two prolateral; metatarsus: three ventral pairs, one apicoventral.

Male pedipalp with undivided, relatively narrow tegulum. Tegular apophysis elongated, pointing more or less apically, its tip straight or curved ventrally. Subtegulum narrow and situated basally on bulb. Embolic division large, terminal apophysis semicircular and broad at its tip, embolus originating prolaterally on embolic division and semicircular, long and relatively thin. Cymbium tip without macrosetae or spines.

Female epigyne with inverted T-shaped median septum (indistinct in *D. serrata*). Spermathecal heads somewhat elongated and sometimes with distinct anterior tip (*D. humphreysi*, *D. murata*). Spermathecal stalks short.

Remarks

The genus *Dingosa* belongs to the subfamily Lycosinae as the male pedipalp has a transverse tegular apophysis (although somewhat elongated apically) with a sinuous channel on the dorsal surface (Dondale 1986; Murphy et al. 2006). The closest relative of this genus may be found in the monotypic Australian genus *Mainosa* Framenau, 2006 (Framenau 2006a). Similar to *Dingosa*, *Mainosa* builds a turret around the entrance of their burrow and has very long legs, in particular in males. However, male and female genitalia show considerable differences and the coloration of spiders, with *Mainosa* having light transverse bars on an otherwise blackish opisthosoma, is very different.

The four species of *Dingosa* can be separated into two distinct groups based on somatic and genital morphology. *Dingosa simsoni* and *D. serrata* have very distinct serrated bands on the opisthosoma, whereas the tooth-like shapes on these bands are comparatively flat in *D. humphreysi* and *D. murata*. These two groups are also evident when comparing genital morphology. Males of both *D. humphreysi* and *D. murata* have a tooth basally on the tegular apophysis in the male pedipalp that is absent in the other two species, and the lateral edges of the transverse part of the median septum in the female epigyne curve anteriorly, but not so in *D. simsoni* and *D. serrata*.

Dingosa simsoni (Simon, 1898)

(Figures 1A, B, 2A–F, 4)

Lycosa simsoni Simon 1898, p 29; Rainbow 1911, p 273; Bonnet 1957, p 2622; McKay 1973, p 379; McKay 1985b, p 83.

Dingosa simsoni (Simon): Roewer 1955a, p 240; Roewer 1959, p 360, Figure 199; Platnick 1998, p 550.

not *Lycosa simsoni* Simon *sensu* Hickman 1967, p 80, Figures 142, 143, Plate 13, Figure 3 (misidentification).

Pardosa serrata (L. Koch): McCullough 2000, p 35–36, Figures 3.17–3.20, 3.25 (not *Pardosa serrata sensu* L. Koch, 1877, misidentification).

Material examined

Holotype: female, Launceston (41°26'S, 147°08'E, Tasmania, Australia) (MHNP 4640).

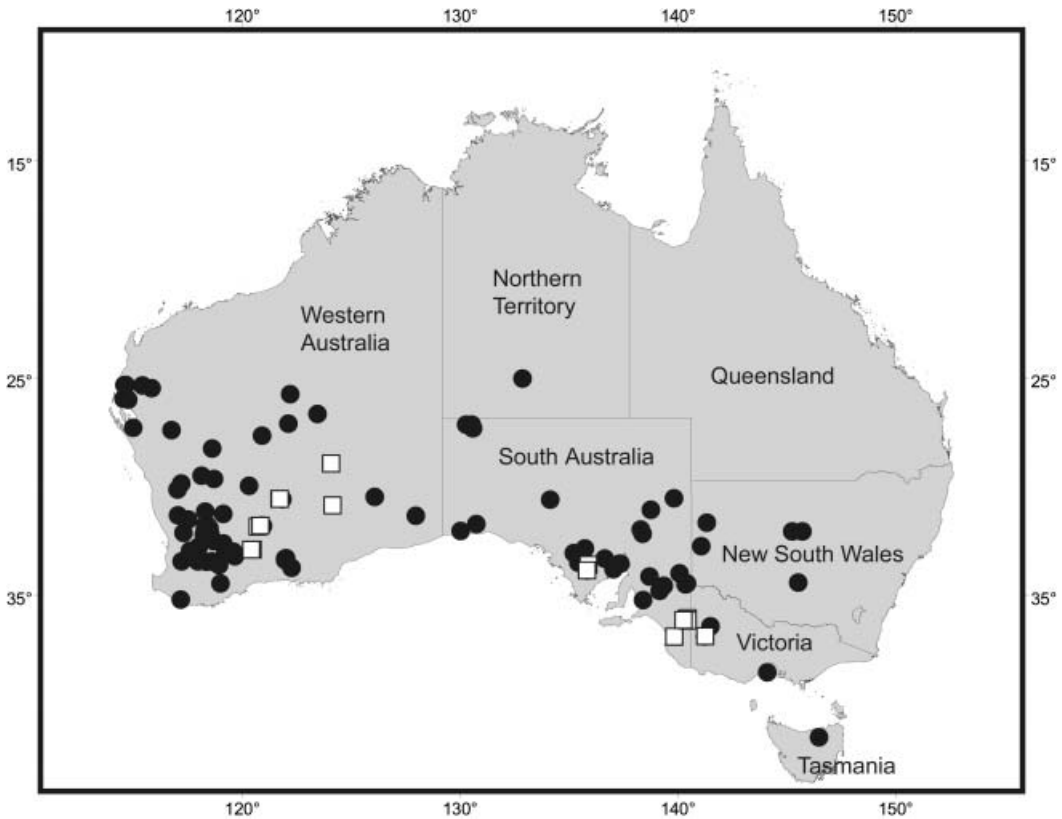


Figure 4. Records of *Dingosa* in Australia. *Dingosa simsoni* (Simon) (full circles; 112 records); *D. humphreysi* (McKay) (light squares; 41 records).

Other material examined. Australia: New South Wales: one female, 5 juv., Broken Hill, 17 miles S, 32°12'S, 141°27'E (QM S64938); one female with eggsac, Cobar, 31°29'S, 145°50'E (AM KS84121); one female, Cobar, 30 miles E, 31°29'S, 146°20'E (AM KS84122); two males, Fowlers Gap, 31°04'S, 141°43'E (AM KS43591); one female with eggsac, Round Hill, Euabalong, 33°00'S, 146°24'E (AM KS84120). **Northern Territory:** one male, Glen of Palms, 3 km S, Finke National Park, 24°05'50"S, 132°50'00"E (SAM NN16779); one female, Katherine District, 14°28'S, 132°16'E (NMV K8125); two females, Roper River region, 14°49'S, 134°08'E (NMV K8165). **South Australia:** one female, Brookfield Conservation Park, 34°21'S, 139°28'E (SAM NN16699); two females, Bunyeroo Creek, ABC Range, 31°24'S, 138°32'E (SAM NN16732–3); three females, Catacombs, N of Knowles Cave, 31°07'S, 130°37'E (SAM NN16694–6); one female, Clover Lake, Calperum Station, 34°00'S, 140°47'E (SAM NN16700); one male, Commonwealth Hill Station, 29°57'S, 134°10'E (SAM NN16726); one female, Hambidge, 33°23'S, 135°57'E (SAM NN16750); one male, Hanging Knoll, 2 km W, 26°19'23"S, 130°23'36"E (SAM NN16770); one male, two females, 1 juv., Koonalda, 6 km W, 31°27'S, 129°51'E (AM KS30556); one female, Lake Callabonna, 29°52'00"S, 140°08'02"E (SAM NN16693); three females, Lake Gairdner, 32°18'00"S, 135°50'20"E (SAM NN16728–30); one female with eggsac, Lake Gilles, 32°47'S, 136°48'E (SAM NN16753); two females, Moonarie Gap,

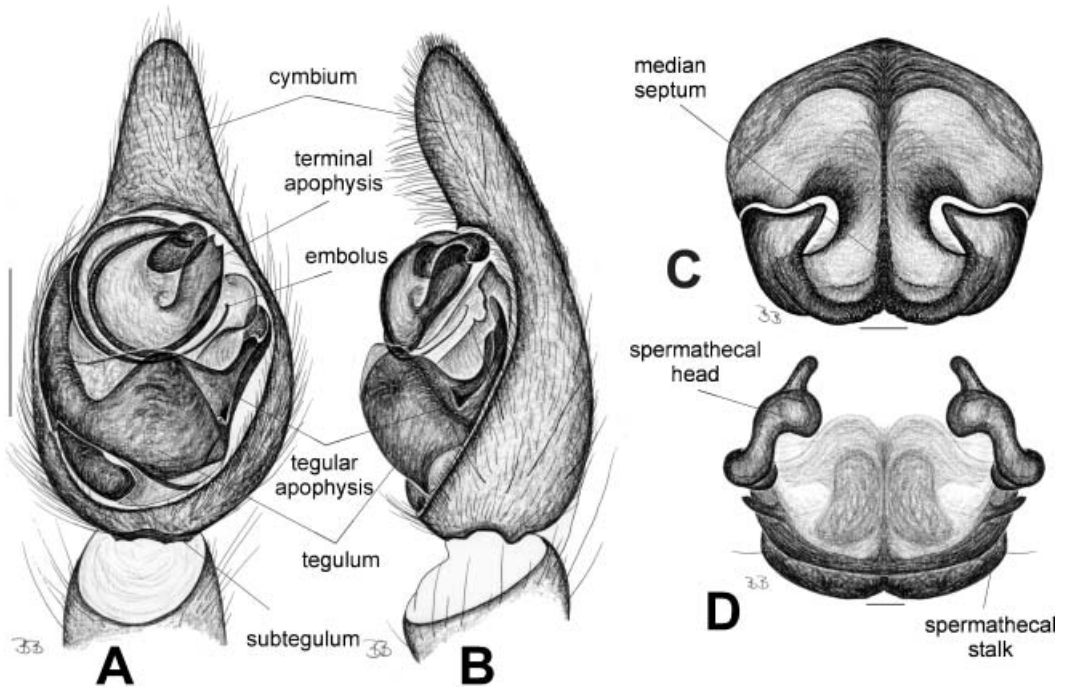


Figure 5. *Dingosa murata* sp. n., male holotype from Zuytdorp, Western Australia (WAM T51303) and female from North Tarin Rock Nature Reserve, Western Australia (WAM 71/1428). (A, B) Left pedipalp, ventral and lateral views, respectively; (C, D) female epigyne, ventral and dorsal views, respectively. Scale bars: 0.50 mm (A, B); 0.10 mm (C, D).

Wilpena Pound, 31°36'S, 138°37'E (SAM NN16734–5); one male, Mt Cooperinna, 17.5 km NNE, 26°19'20"S, 130°07'56"E (SAM NN16773); three males, Mt Cooperinna, 17.5 km NNE, 26°19'20"S, 130°07'56"E (SAM NN16771–2); four males, Mt Kintore, 7 km NNW, 26°29'56"S, 130°27'22"E (SAM NN16774–7); one male, Mt Kintore, 8.4 km NW, 26°29'57"S, 130°26'20"E (SAM NN16778); one male, Munyaroo Conservation Park, 33°19'50"S, 137°14'00"E (SAM NN16754); one female, Para Hills, Adelaide, 34°48'S, 138°39'E (SAM NN16711); four males, Renmark, 29 km NNW, 33°31'S, 140°24'E (QM S24514); two females, Sambot WH (near), Arcoona Creek, Gammon Ranges, 30°26'S, 139°02'E (SAM NN16736–7); one female with spiderlings, Scott Creek, near Morgan, 34°06'S, 139°40'E (SAM NN16704); one male, Scrubby Peak, 4 km S, 32°31'S, 135°19'E (SAM NN16727); one female, one female with eggsac, Terowie, 33°40'48"S, 138°57'44"E (SAM NN16721–2); one female, Whyalla, 33°02'S, 137°34'E (SAM NN23326); one male, one female with eggsac, Whyalla Fauna Park, 33°02'S, 137°34'E (SAM NN16766, SAM NN23325); two females, Wipena Pound Range, Flat E of Moonarie Gap, 31°36'S, 138°37'E (WAM 71/637–8); two females, Wudinna Hill, 32°59'44"S, 135°32'52"E (SAM NN16767–8). **Tasmania:** one female, Mulgrave Crescent, Launceston, 41°26'S, 147°08'E (QM S64937). **Victoria:** one female, Lake Albacutja, NW corner, ca 15 km WSW of Yaapeet, 36°04'S, 141°55'E (NMV K9264); one female, Little Desert, 36°33'S, 141°38'E (QM S64936); three females, Point Nepean, 38°18'S, 144°39'E (AM KS84119). **Western Australia:** two females, two females with eggsac, one female with spiderlings, Western Australia (no exact location, ? Perth region, W. J. Lane collection; see Lane 1965) (WAM

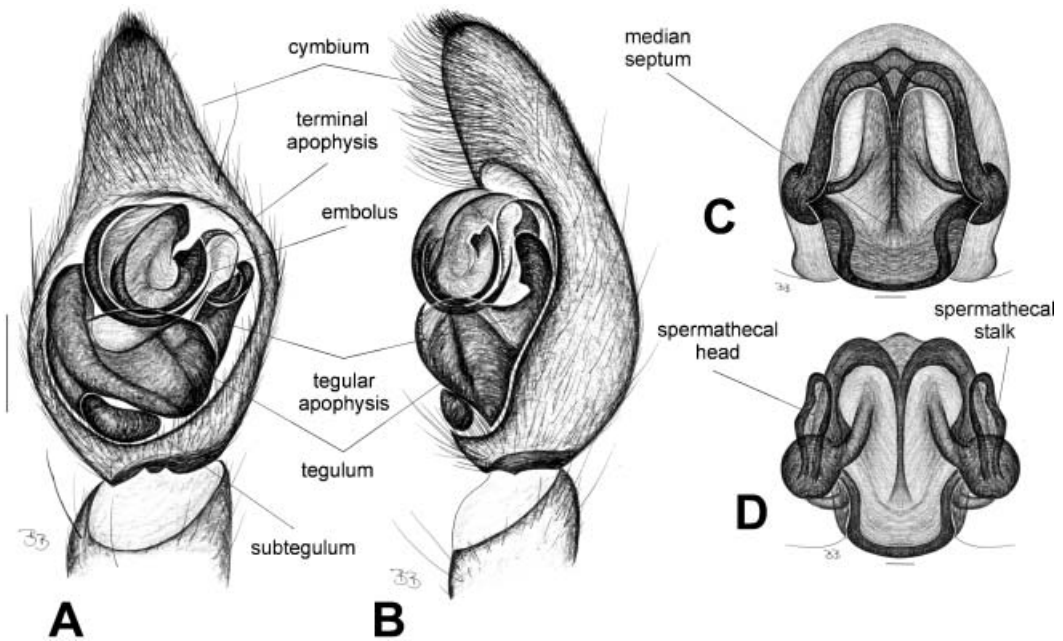


Figure 6. *Dingosa serrata* (L. Koch), male from Baldivis, Western Australia (WAM T60074) and female from Murdoch University campus, Perth, Western Australia (WAM T62470). (A, B) Left pedipalp, ventral and lateral views, respectively; (C, D) female epigyne, ventral and dorsal views, respectively. Scale bars: 0.50 mm (A, B); 0.10 mm (C, D).

T53880, T53884–6, T53900); one male, Boolathana Station, 24°24'49"S, 113°40'30"E (WAM T51281); three males, Boolathana Station, 24°24'49"S, 113°39'47"E (WAM T51289); four males, Boolathana Station, 24°24'49"S, 113°40'30"E (WAM T51288); five males, Boolathana Station, 24°24'49"S, 113°42'24"E (WAM T51286); two females, Boorabin, 31°13'S, 120°19'E (WAM T51251, T51253); two females, Boorabin Rock, 31°12'S, 120°17'E (WAM T51249); one female, Borden, N of, at junction Kojonup/Gnowangerup/Borden Roads, 34°00'S, 118°16'E (WAM 69/915); one female, Burnabinmah Station, 28°47'S, 117°22'E (WAM 69/819); one male, Bush Bay, 25°07'34"S, 113°49'22"E (WAM T51290); five males, Bush Bay, 25°04'40"S, 113°36'37"E (WAM T51285); one female, Canning Stock Route, Well 10–1, 24°51'S, 121°39'E (NMV K8170); two females, Carnegie Homestead, 0.5 km W, Carnegie camp, 25°48'S, 122°58'E (WAM T53725–6); one male, Doodlakine, ca 5 km NW, 31°36'S, 117°48'E (WAM T55264); one male, Erikin Road, 31°57'51"S, 117°56'05"E (WAM T51248); 11 males, two females, Exclamation Lake, 32°46'26"S, 121°26'49"E (WAM T45892, T45894, T45896, T45898–9, T51228, T51230); five males, Exclamation Lake, 32°50'28"S, 121°23'17"E (WAM T51229); six males, Exclamation Lake, 32°51'43"S, 121°24'04"E (WAM T51231); one male, Exclamation Lake, 32°49'18"S, 121°24'45"E (WAM T51232); one male, Exclamation Lake, 32°46'S, 121°26'E (WAM T45849); one male, one female, Exclamation Lake area, 32°47'S, 121°24'E (WAM T45843, T45857); one female with eggsac, Forrest, 30°44'S, 127°41'E (WAM T53661); one female, Goomalling Road, 31°33'S, 116°29'E (WAM 70/194); one female, Goongarrie, 29°55'S, 121°15'E (WAM T53850); one male, Grasspatch, Fitzgerald Locality 41, 33°14'S, 121°43'E (WAM T62462); one female, Great Northern Highway, 214 mile peg

(no exact location) (WAM 69/85); one female, Harrismith East, 32°56'S, 117°51'E (WAM 70/191); two females, 1 juv., Hyden, The Humps, 32°27'S, 118°54'E (WAM 71/1425-7); one male, Jouerdie Nature Reserve, 30°38'11"S, 118°25'39"E (WAM T51264); one male, Kadji Kadji, SE of, N along powerline, 29°10'18"S, 116°23'16"E (WAM T51259); one male, Kellerberrin area, 31°20'S, 117°45'E (WAM T62304); three males, Kennedy Range National Park, 24°33'05"S, 114°57'32"E (WAM T51282); one male, 4 juv., Lake Mollerin, West, 30°31'41"S, 117°33'54"E (WAM T51260); one male, Lake Ninan Shire Reserve, East, 30°57'09"S, 116°39'29"E (WAM T51254); one male, Mardathuna Station, 24°25'43"S, 114°30'00"E (WAM T51283); one male, Mt Elvire, 2.5 km 160° from, 29°16'40"S, 119°39'00"E (WAM T53745); six males, Mt Narryer Station, 26°35'S, 115°55'E (WAM T53621); eight males, Nanga Station, 26°28'40"S, 114°04'34"E (WAM T51284, T51287); three females, Narembeen Camp Site, 32°04'S, 118°24'E (WAM 69/908-10); one female, Narrogin Reserve, 32°56'S, 117°11'E (WAM 69/1011); one male, North Dragon Rocks Nature Reserve, 32°41'27"S, 118°58'30"E (WAM T51263); one female, Numbudding, W of (N of train track), 31°11'49"S, 117°32'51"E (WAM T53723); one female, Premier Downs Station, 74 km N of Rawlina-Wharburton Road, Great Victoria Desert, 29°49'S, 125°43'E (SAM NN16781); one female, South Cunaring Hill, 32°25'S, 116°48'E (WAM 68/514); one female with eggsac, South of Walebing, 30°42'S, 116°13'E (WAM 69/833); WA, one male, one female, Tammin, 31°38'S, 117°29'E (WAM 69/912, 69/914); one female, Tarin Rock Reserve, 33°06'S, 118°13'E (WAM 71/1432); one female, Toolibin, 32°57'S, 117°37'E (WAM 70/190); four males, West of Karlgarin, Reservoir Road, 32°32'00"S, 118°31'09"E (WAM T51257); three males, West Perenjori Nature Reserve, 29°27'52"S, 116°12'36"E (WAM T51268); one female with eggsac, Wiluna, 3 km S, Yeelirrie turnoff, 26°51'14"S, 120°17'38"E (SAM NN16782); two females, Wongan Hills, 30°54'S, 116°43'E (WAM 70/192-3); one female, Wongan Hills, WA Agriculture Department Research Station, 30°54'S, 116°43'E (WAM 70/189); one male, Wydgee Homestead, 17 km, 125° from, 28°56'S, 117°58'E (WAM T53750); one female with eggsac, Yalgoo Road, 8 miles (no exact location) (WAM 68/856); one female, Yelbeni, W of, 31°10'24"S, 117°39'32"E (WAM T53724); one male, Yenyanning Lakes, 32°13'38"S, 117°13'08"E (WAM T51267); one male, Yokrakine Rock, 31°25'S, 117°31'E (WAM 71/1422); one female, Yorkrakine, 31°22'S, 117°35'E (WAM 69/911).

Diagnosis

Dingosa simsoni is closely related to *D. serrata*, but differs in the curled tip of the tegular apophysis of the male pedipalp (keeled in *D. serrata*). The epigyne of *D. simsoni* is much shorter than that of *D. serrata* and has a distinct and continuous anterior margin whereas the anterior pockets are separated in *D. serrata*.

Description

Male. Based on WAM T62462.

Prosoma, dorsal shield (Figures 1A, 2A): dark brown; indistinct black radial pattern; white radial lines of white setae; light brown median band widening from fovea towards PLE and here including two short and dark brown longitudinal lines that form an open V; narrow central line of white setae between eyes from behind PLE to clypeus and diagonal line of white setae between PME and PLE; distinct light brown submarginal bands; dark brown, blotchy marginal bands; white setae in median and submarginal bands; otherwise

black setae; few brown macrosetae around eyes; six bristles below AE, one long bristle between AME.

Sternum: brown; white setae which are longer towards margins.

Labium: longer than wide; dark brown; front end truncated and white.

Chelicerae: light brown with few darker discolorations; basally covered with dense white setae.

Pedipalps (Figure 2C, D): terminal apophysis with broad tip, embolus strong with pointed tip; tip of tegular apophysis curled ventrally (Figure 2E).

Opisthosoma (Figure 1A): dark brown to black with laterally serrated median band; light yellow-brown lines laterally of serrated band; lateral sides of opisthosoma dark olive-brown; serrated band with silvery setae, serrated corners somewhat darker as they carry dark brown setae; white setae in yellow-brown bands. Venter light brown, somewhat darker centrally; covered with white setae, but a few brown setae laterally and in a patch centrally in front of epigastric furrow. Spinnerets brown.

Legs: leg formula VI>I>II>III; light brown, femora with some brown longitudinal banding; tibiae, metatarsi and tarsi of leg I darker than other legs; scopulate setae ventrally on metatarsi of leg I. Spination of leg I: femur: three dorsal, two apicoprolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: one dorsal in apical half, three ventral pairs, two prolateral, two retrolateral; metatarsus: three ventral pairs, two prolateral, one retrolateral, one apicoventral, one apicoprolateral, one apicoretrolateral.

Female. Based on WAM T73725.

Prosoma, dorsal shield (Figure 1B), and chelicerae: as male.

Sternum: yellow-brown; covered with very long white setae.

Labium: wider than long; dark brown; front end truncated and white

Opisthosoma: as male (Figure 1B). Venter yellow-brown, covered with white setae.

Spinnerets: brown.

Epigyne, ventral view (Figure 2E): median septum inverted T-shaped, but anterior end widening; anterior margin continuous.

Epigyne, dorsal view (Figure 2F): heads of spermathecae elongated triangular; stalks of spermathecae short.

Legs: leg formula IV>I>II>III; coloration as male but distal segments of leg I not darker. Spination of leg I: femur: three dorsal, two retrolateral, two apicoprolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: three ventral pairs, two prolateral; metatarsus: three ventral pairs, one apicoventral.

Measurements. Male WAM T62462 (female WAM T73725): TL 10.25 (12.63), PL 5.13 (5.38), PW 4.00 (4.38). Eyes: AME 0.21 (0.24), ALE 0.15 (0.18), PME 0.45 (0.45), PLE 0.42 (0.41). Row of eyes: AE 1.12 (1.33), PME 1.39 (1.61), PLE 1.79 (2.03). Sternum (length/width) 2.13/1.88 (2.13/1.88). Labium (length/width) 0.64/0.73 (0.82/0.76). OL 4.38 (7.13), OW 2.88 (5.25). Legs: lengths of segments (femur+patella/tibia+metatarsus+tarsus=total length): pedipalp 1.56+1.88+ +1.88=5.31, I 5.00+6.25+4.63+2.25=18.13, II 4.75+5.63+4.75+2.38=17.50, III 4.50+5.13+4.63+2.50=16.75, IV 5.88+6.88+7.00+3.00=22.75 (pedipalp 1.56+2.38+ +1.75=5.69, I 4.38+5.25+3.13+1.75=14.50, II 4.00+4.88+3.25+2.00=14.13, III 3.75+4.38+3.38+2.00=13.50, IV 5.00+6.13+5.25+2.50=18.88).

Variation. Males (females) (range, mean \pm SD): TL 7.80–12.75, 9.68 \pm 1.55; PL 4.20–5.85, 5.10 \pm 0.52; PW 3.15–4.35, 3.80 \pm 0.43; $n=9$ (TL 8.40–15.00, 11.59 \pm 1.75; PL 4.20–7.35, 5.32 \pm 0.84; PW 3.00–5.25, 3.86 \pm 0.58; $n=23$).

Life history and habitat preferences

Dingosa simsoni is winter-mature. Adult spiders can be found between April, when the first males appear in search for females, and October. Females with eggsacs have been found as early as July, but appear to be most common in August and September.

Habitat descriptions for *D. simsoni* include “sand dunes” or “base of sand dunes”, “remnant bushland”, “open shrubland of *Acacia*” and “mallee” or “mulga” suggesting a preference for open, sparsely vegetated habitats on sandy or eroded dry soils. McCullough (2000) illustrated *D. simsoni* (as *Pardosa serrata*) and reported it common at his study site, near Burra, South Australia. Here, *D. simsoni* occupied stony, hard-packing clay-sandy loam soil on reefs of shale over sandstone bedrock. The vegetation consisted of patchy remnants of native and introduced grasses.

Remarks

Dingosa simsoni is currently associated with the common name “Grey Wolf Spider”. However, this common name is based on the misidentification of this species by Hickman (1967) who re-described *Lycosa simsoni* as a large, trapdoor-building, burrowing wolf spider that is common in south-eastern Australia including Tasmania. It appears that Hickman (1967) did not examine the holotype female of *D. simsoni* but based his identification on a poor illustration of the epigyne in Roewer (1959). Some popular spider books and webpages (e.g. Mascord 1970, p. 108; Australian Museum 2003) continued to identify the common trapdoor-building Grey Wolf Spider from south-eastern Australia as *Dingosa*, perpetuating Hickman’s (1967) misidentification. The Grey Wolf Spider illustrated by Hickman (1967) is an undescribed species of an unnamed genus of Australian wolf spiders to which *Lycosa leucophaeoides* (L. Koch, 1877) also belongs.

Walckenaer (1837) described the first wolf spider from Australia, *Lycosa irrorata* Walckenaer, 1837, based on a male collected in Tasmania. The species is currently catalogued as *nomen dubium* (Platnick 2007; based on Roewer 1955a). The type material could not be found in the MNHP, where Walckenaer’s material was expected to be housed (E.-A. Leguin, personal communication). The original description suggests that this species could be a *Dingosa*, most likely *D. simsoni* as this species is the only representative of this genus in Tasmania. Walckenaer (1837, p 325) stressed in particular an elevated cephalic region (“*Les quatre yeux des deux lignes postérieures sont portés sur un léger renflement du corselet*”), which is very uncommon in Australian wolf spiders. However, the description is not detailed enough to undoubtedly support *Lycosa irrorata* as a senior synonym of *D. simsoni*.

Distribution

Mainland Australia south of 24°S latitude and Tasmania (Figure 4).

***Dingosa humphreysi* (McKay, 1985), n. comb.**

(Figures 1C, D, 3A–D, 4)

Pardosa humphreysi McKay 1985a, p 101–103, Figure 1a–c, e, g, h, Plate 1; Platnick 1989, p 378.

Material examined

Holotype: male, Lake Cronin (32°22′15″S, 119°49′30″E, Western Australia, Australia), 4–10 February 1981, W. F. Humphreys et al., WAM Goldfields Survey site LCR 7, mallee/*Triodia* lunette, pitfall trap (WAM 84/602). Paratypes: eight males, data as holotype (WAM

84/603–7, QM S409) examined; 15 males, Lake Cronin (32°22'30"S, 119°49'35"E, Western Australia), 4–10 February 1981, W. F. Humphreys et al., WAM Goldfields Survey site LCR 8, mallee/*Triodia*, pitfall trap (WAM 84/608–22); four males, Lake Cronin (32°23'15"S, 119°45'00"E, Western Australia), 4–10 February 1981, W. F. Humphreys et al., WAM Goldfields Survey site LCR 5 (WAM 84/623–26); one female, Boorabin (31°13'S, 120°13'E, Western Australia), 24–29 March 1981, W. F. Humphreys et al., WAM Goldfields Survey site BNR 2, heath with occasional mallee (WAM 84/627); one female, Boorabin (31°15'S, 120°04'E, Western Australia), 24–29 March 1981, W. F. Humphreys et al., WAM Goldfields Survey BNR 1, *Callitris* heath/isolate, debris (WAM 84/628); three males, Goongarrie (29°55'20"S, 121°07'55"E, Western Australia), 10–16 March 1979, R. A. How, WAM Goldfields Survey site GGR 2, dune site, pitfall trap (WAM 84/629–31); eight males, Goongarrie (29°55'20"S, 121°07'55"E, Western Australia), 10–16 March 1979, R. A. How, WAM Goldfields Survey site GGR 3, dune base, pitfall trap (WAM 84/632–9); nine males, Goongarrie (29°55'20"S, 121°07'55"E, Western Australia), 10–16 March 1979, R. A. How, WAM Goldfields Survey site GGR 1, dune, pitfall trap (WAM 84/629–48); one female, Goongarrie (29°55'S, 121°08'E, Western Australia), 15–21 July 1981, W. F. Humphreys, WAM Goldfields Survey site GGR 3, dune slack, litter turret (WAM 84/649).

Other material examined. Australia: South Australia: five males, Hambidge, 33°23'S, 135°57'E (SAM NN16743, NN16745–6, NN16749, NN16751); one female, Keilira Station, 13 km N, 36°35'S, 140°10'E (SAM NN16678); one male, one female, Ngarkat Conservation Park, 35°47'S, 140°36'E (SAM NN16685, NN16687); one male, one female, Ngarkat Conservation Park, Pinnaroo–Bordertown Road, 35°48'08"S, 140°48'00"E (SAM NN16683, NN16692); one male, Ngarkat Conservation Park, Pinnaroo–Bordertown Road, 35°42'14"S, 140°48'00"E (SAM NN16682); one male, Ngarkat Conservation Park, Pinnaroo–Bordertown Road, 5 km N of S boundary, 35°43'31"S, 140°47'48"E (SAM NN16688); one male, Ngarkat Conservation Park, border track, 6 km E Kirra, 35°46'16"S, 140°57'40"E (SAM NN23324) two males, five females, Pinkawillinie Conservation Park, 33°07'S, 136°00'E (SAM NN16755–9, NN 16762, NN16764). **Victoria:** one female, Little Desert, 36°33'S, 141°38'E (QM S64935). **Western Australia:** one male, WA, Lake Cronin, 32°22'15"S, 119°49'30"E (WAM 84/602); four males, Point Salvation, 7–8 km WNW, 28°12'S, 123°36'E (WAM T62372); 10 males, two females, Queen Victoria Springs Nature Reserve, 30°14'S, 123°41'E (WAM T48546, T48555, T48559, T48586, T48629, T48734, T48802, T53111, T53114).

Diagnosis

Somatic and genitalic characters place *D. humphreysi* close to *D. murata*. The longitudinal cardiac mark on the opisthosoma is less serrated than in *D. simsoni* and *D. serrata* in both species and males carry a small tooth at the base of the tegular apophysis of the male pedipalp. Males of *D. humphreysi* and *D. murata* can be distinguished by the shape of the tegular apophysis, which is curved apically in *D. humphreysi* but not so in *D. murata*. Females clearly differ in the shape of the epigyne. The median septum in *D. humphreysi* does not have truncated edges on the transverse part as evident in *D. murata*.

Description

Male. Based on WAM T48586.

Prosoma, dorsal shield (Figure 1C): brown; indistinct dark brown radial pattern; light brown median band widening from fovea towards PLE and here including a V-shaped

darker pattern; narrow median line of white setae between eyes; distinct light brown submarginal bands; indistinct narrow dark brown marginal bands; white setae in median and submarginal bands; otherwise brown setae; few brown macrosetae around eyes; four bristles below AE, one long bristle between AME.

Sternum: yellow-brown; white setae and fewer brown macrosetae.

Labium: as long as wide; brown; front end truncated and white.

Chelicerae: brown, light brown frontally; few white setae basally.

Pedipalps (Figure 3A, B): terminal apophysis semicircular, its tip broad and indented; embolus sickle-shaped; tegular apophysis with basal tooth and ventrally curled tip (Figure 3B).

Opisthosoma (Figure 1C): light brownish grey through a dense cover of light setae; brown cardiac mark in anterior half accentuated by dark edges of dark setae. Venter yellow; covered with white setae, brown setae in a patch centrally in front of epigastric furrow. Spinnerets brown.

Legs: leg formula VI>I>II>III; brown. Spination of leg I: femur: three dorsal, two apicoprolateral, two retrolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: one dorsal in apical half, three ventral pairs, two prolateral, two retrolateral; metatarsus: three ventral pairs, two prolateral, one retrolateral, one apicoventral, one apicoprolateral, one apicoretrolateral.

Female. Based on WAM 84/649.

Prosoma, dorsal shield (Figure 1D): as male, submarginal bands less distinct.

Sternum and labium: as male.

Chelicerae: dark reddish brown; few white setae basally, few brown setae.

Opisthosoma (Figure 1D): olive-brown; dark brown longitudinal cardiac mark weakly serrated; irregular yellow-brown patches lateral of cardiac mark and in posterior half; silvery-white setae and few brown setae on cardiac mark. Venter yellow-brown, covered with white setae. Spinnerets: light brown.

Epigyne, ventral view (Figure 3C): median septum inverted T-shaped, its lateral ends reaching under the anterior pockets.

Epigyne, dorsal view (Figure 3D): heads of spermathecae with anterior tips; stalks of spermathecae short.

Legs: leg formula IV>I>II>III; brown; scopulate setae on metatarsi and tarsi of leg I and II. Spination of leg I: femur: three dorsal, two apicoprolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: three ventral pairs, two prolateral, one retrolateral; metatarsus: three ventral pairs, one apicoventral.

Measurements. Male WAM T48586 (female WAM 84/649): TL 11.25 (13.25), PL 5.75 (6.25), PW 4.00 (4.50). Eyes: AME 0.29 (0.35), ALE 0.17 (0.25), PME 0.52 (0.58), PLE 0.44 (0.52). Row of eyes: AE 1.17 (1.44), PME 1.38 (1.71), PLE 1.71 (2.19). Sternum (length/width) 2.25/1.88 (2.38/2.13). Labium (length/width) 0.67/0.67 (0.90/0.90). OL 5.38 (6.75), OW 3.13 (5.63). Legs: lengths of segments (femur+patella/tibia+metatarsus+tarsus=total length): pedipalp 2.50 +2.25+ – +2.13=6.88, I 5.63+7.13+6.13+3.13=22.00, II 5.25+6.50+5.75+3.00=20.50, III 5.00+6.25+6.13+3.00=20.38, IV 6.88+8.13+7.63+3.63=26.25 (pedipalp 2.38+2.75+ – +2.25=7.38, I 4.50+5.63+3.63+2.25=16.00, II 4.25+5.00+3.50+2.25=15.00, III 4.25+4.75+3.75+2.13=14.88, IV 5.63+6.50+5.75+2.88=20.75).

Variation. Males (females) (range, mean \pm SD): TL 7.35–10.50, 8.94 \pm 0.96; PL 4.05–5.85, 4.88 \pm 0.56; PW 2.85–4.05, 3.45 \pm 0.36; $n=12$ (TL 8.40–12.00, 10.15 \pm 1.26; PL 4.35–5.70, 4.87 \pm 0.49; PW 3.00–4.20, 3.46 \pm 0.43; $n=9$).

Life history and habitat preferences

Adult spiders have mainly been found between February and July, peaking in April and March, which suggests reproductive activity in late summer and autumn. Females caring for brood have so far not been collected.

Habitat descriptions for this species include “dune shrubland”, “dunes” and “dune bases”, but also “*Trioida* grassland” and “mallee” suggesting similar habitat preferences as *D. simsoni*.

Distribution

Western Australia, South Australia, into western Victoria (Figure 4).

***Dingosa murata* n. sp.**

(Figures 1E, F, 5A–D, 7)

Material examined

Holotype: Male, Zuytdorp (27°16'41"S, 114°01'48"E, Western Australia, Australia), 16–21 May 1995, wet pitfall trap, CALM/WAM Carnarvon Survey ZU2, M. S. Harvey et al. (WAM T51303). Paratypes: three females, North Tarin Rock Nature Reserve (33°06'S, 118°13'E, Western Australia, Australia), 23 May 1971, A. Baynes (WAM 71/1428–30).

Other material examined. **Australia:** New South Wales: Deniliquin, 22°22"S, 121°18"E (MV K8132). Victoria: Little Desert National Park, ca 36°33"S, 141°50"E (MV K8113). **Western Australia:** one female, Attadale, 32°01'S, 115°48'E, 5 May 1959, A. R. Main, FN 1959/A24 (WAM 68/515); one male, Exclamation Lake, 32°47'18"S, 121°24'34"E, site SG 02A, 23–29 April 2002, R. Teale, G. Harold, A. Sanders, P. Higgs, dry pitfall traps 1–6 (WAM T51246); one female, Eneabba, 29°56'S, 115°17'E, 15 May 1991, R. P. McMillan, mine site, RGC mineral sands (WAM T42138); one female, Gingin, 31°21'S, 115°55'E, July 1954, E. Lindgren, sand plain (WAM 71/1433); two males, Lake King, SE of (E of Fields Road), 33°06'46"S, 121°11'35"E, CALM Salinity Action Plan, site GP 6, 15 October 1999 to 1 November 2000, P. van Heurck et al., wet pitfall traps (WAM T51258); one male, Perth Airport, 31°58'34"S, 115°58'25"E, WAM Urban Bushland Survey, PA7, 24 June to 28 July 1993, J. M. Waldock et al., wet pitfall traps (WAM T68030); two males, Zuytdorp, 27°15'41"S, 114°01'48"E, CALM/WAM Carnarvon Survey, ZU2, 11 January to 18 May 1995, M. S. Harvey et al., wet pitfall traps, WAM, T51302; four males, Zuytdorp, 27°15'28"S, 114°09'02"E, CALM/WAM Carnarvon Survey, ZU4, 10 January to 18 May 1995, M. S. Harvey et al., wet pitfall traps (WAM T51304); four males, same data except 18 May to 16 August 1995 (WAM T51309); one male, Zuytdorp, 27°15'25"S, 114°11'16"E, CALM/WAM Carnarvon Survey, ZU5, 10 January to 17 May 1995, M. S. Harvey et al., wet pitfall traps (WAM T51307); two males, same data except 16–21 May 1995 (WAM T51308).

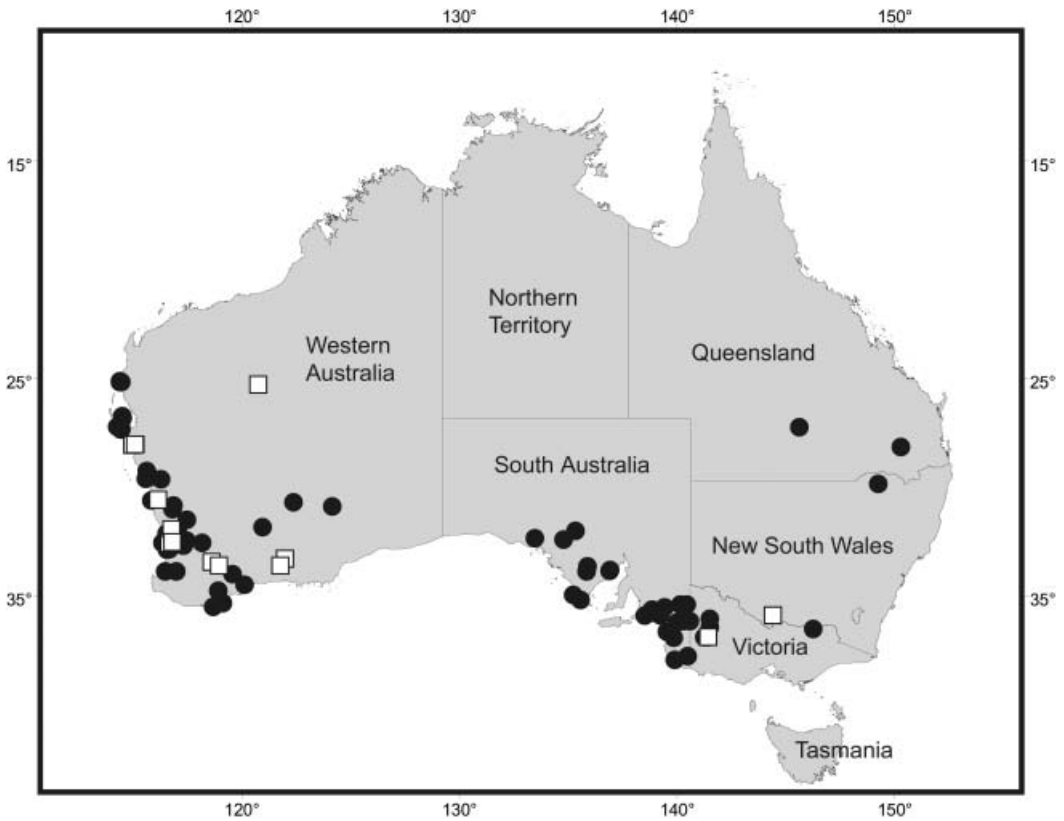


Figure 7. Records of *Dingosa* in Australia. *Dingosa serrata* (L. Koch) (full circles; 184 records); *D. murata* sp. n. (light squares; 17 records). The syntype series of *D. serrata* from Sydney is not mapped since the material is lost.

Etymology

The specific name is an adjective in apposition derived from *muratus* (Latin—surrounded by a wall) and refers to the turret-building behaviour of this species and all other species within the genus *Dingosa*.

Diagnosis

Dingosa murata is most similar to *D. humphreysi*. Males differ in the shape of the apical tip of the tegular apophysis, which is curved ventrally in *D. humphreysi* and more or less straight in *D. murata*. Females of both species are distinguished by the shape of the lateral tips of the inverted T-shaped median septum, which are truncated in *D. murata*, but reach under the anterior pockets of the epigyne in *D. humphreysi*.

Description

Male. Based on WAM T51303.

Prosoma, dorsal shield (Figure 1E): dark brown; indistinct dark brown radial pattern; light brown median band widening anteriorly and with two irregular short bands in anterior half; dark brown around fovea; narrow central line of white setae between eyes from behind

PLE to clypeus; distinct light brown submarginal bands; narrow dark brown marginal bands; black and interspersed white setae, white setae in median and submarginal bands; few brown macrosetae around eyes and behind PLE; four bristles below AE, one long bristle between AME.

Sternum: shiny brown; white setae which are denser marginally.

Labium: longer than wide; basally dark brown, otherwise brown; front end truncated.

Chelicerae: dark brown, light brown longitudinal band frontally; few white setae basally, otherwise few black setae.

Pedipalps (Figure 5A, B): terminal apophysis apically broad, with two tips, embolus thin, with bent tip; tegular apophysis with basal tooth and its tip more or less straight (Figure 5B).

Opisthosoma (Figure 1E): light brownish grey through a dense cover of silvery and white setae; dark brown cardiac mark with two minor lateral serrations, accentuated laterally by dark setae; yellow-brown bands lateral of cardiac mark; yellow-brown irregular spots in posterior half. Venter brown; covered with brown setae. Spinnerets light brown.

Legs: leg formula VI>I>II>III; dark brown with irregular light patches. Spination of leg I: femur: three dorsal, two apicoprolateral, one retrolateral; patella: one prolateral, one retrolateral; tibia: one dorsal in apical half, three ventral pairs, two prolateral (three on right leg), two retrolateral; metatarsus: three ventral pairs, two prolateral, one retrolateral, one apicoventral, one apicoprolateral, one apicoretrolateral.

Female. Based on WAM 71/1428.

Prosoma, dorsal shield (Figure 1F): as male, marginal dark bands wider and more distinct.

Sternum, chelicerae, and labium: as male.

Opisthosoma (Figure 1F): as male, but overall lighter and with less contrast. Venter as male, slightly lighter. Spinnerets as male.

Epigyne, ventral view (Figure 5C): lateral edges of median septum truncated anteriorly.

Epigyne, dorsal view (Figure 5D): heads of spermathecae with distinct anterior tips; stalks of spermathecae S-shaped.

Legs: leg formula IV>I>II>III; dark brown with irregular light patches; weak scopulate setae on metatarsi and tarsi of leg I. Spination of leg I: femur: three dorsal, two apicoprolateral, two retrolateral; patella: one prolateral, one retrolateral; tibia: three ventral pairs, two prolateral; metatarsus: three ventral pairs, one apicoventral; one prolateral; one apicoprolateral.

Measurements. Male WAM T51303 (female WAM 71/1428): TL 7.00 (9.00), PL 3.88 (4.25), PW 3.00 (3.19). Eyes: AME 0.21 (0.25), ALE 0.13 (0.15), PME 0.42 (0.42), PLE 0.35 (0.40). Row of eyes: AE 0.90 (1.06), PME 1.11 (1.25), PLE 1.44 (1.67). Sternum (length/width) 1.63/1.50 (1.63/1.50). Labium (length/width) 0.60/0.52 (0.58/0.69). OL 3.38 (5.00), OW 2.38 (3.63). Legs: lengths of segments (femur+patella/tibia+metatarsus+tarsus=total length): pedipalp 1.54 +1.38+ - +1.54=4.46, I 3.61+4.23+3.23+1.92=13.00, II 3.38+3.92+3.15+1.92=12.38, III 3.23+3.61+3.46+1.85=12.15, IV 4.31+4.69+4.92+2.38=16.30 (pedipalp 1.61+1.69+ - +1.38=4.69, I 3.23+3.54+2.46+1.54=10.77, II 3.00+3.38+2.31+1.54=10.23, III 2.61+3.15+2.54+1.46=9.77, IV 3.69+5.54+3.92+1.92=14.07).

Variation. Males (females) (range, mean \pm SD): TL 6.88–12.75, 8.41 \pm 1.61; PL 3.63–6.00, 4.34 \pm 0.72; PW 2.63–4.25, 3.16 \pm 0.51; $n=16$ (TL 7.63–12.75, 10.68 \pm 1.56; PL 3.88–5.75, 4.89 \pm 0.66; PW 2.88–4.13, 3.51 \pm 0.45; $n=10$).

Life history and habitat preferences

Adult spiders have mainly been found between April and November with a peak in May, which suggests reproductive activity in autumn. Only one female with eggsac has been collected, without exact locality data and date (WAM T53903).

The only habitat description available for this species is “sand plain” (WAM 71/1433), agreeing with habitat preferences of other *Dingosa* species.

Distribution

Disjunctive records from Western Australia, and western Victoria and southern New South Wales (Figure 7).

Dingosa serrata (L. Koch), n. comb.

(Figures 1G, H, 6A–D, 7)

Lycosa serrata L. Koch 1877, p 930–932, Plate 80, Figures 5, 5a, 6, 6a; Rainbow 1911, p 272; Bonnet 1957, p 2664; Main 1976, p 142.

Pardosa praevelox Simon 1909, p 191–192; Rainbow 1911, p 276; Roewer 1955a, p 185; Bonnet 1958, p 3407; McKay 1973, p 378; Moritz 1992, p 322 (synonymy established in McKay 1979).

Geolycosa serrata (L. Koch): Roewer 1955a, p 243; McKay 1973, p 380.

Pardosa serrata (L. Koch): McKay 1979, p 225–229, Figures 1a–f, 2a–d; McKay 1985b, p 85; Platnick 1989, p 383; Platnick 1993, p 500.

Material examined

Syntypes of *Lycosa serrata* L. Koch: unknown number of males and females, Sydney (33°53'S, 151°13'E, New South Wales, Australia), Bradley Collection. Not examined (Bradley Collection considered lost; Framenau 2005). Syntypes of *Pardosa praevelox* Simon: female, Buckland Hill, near Fremantle (32°01'S, 115°45'E, Western Australia, Australia), W. Michaelson, R. Hartmeyer, Station 114, 1 June 1905 (ZMB 11118); female, same data (MHNP 24360).

Other material examined. **Australia: New South Wales:** one female, Newell Highway, 88 km SW of Narrandera, 29°08'S, 150°02'E (NMV K7614). **Queensland:** one female with eggsac, Boatman Road near turnoff to Charleville on Cunamulla–Bollon Road, 26°24'S, 146°14'E (QM S64939); two females, Lake Broadwater near Dalby, 27°21'S, 151°07'E (QM S64941). **South Australia:** one male, one female, Billiatt Conservation Park, 34°59'29"S, 140°28'22"E (SAM NN16697–8); one male, Canunda National Park, 37°39'S, 140°13'E (SAM NN16723); two males, two females, 3 juv., Coffin Bay National Park Ranger Station, 2 km W, 34°31'S, 135°19'E (SAM NN16738–41); one female, Cortina Station, Coorong, 36°17'S, 139°50'E (SAM NN16672); one male, Ferries McDonald Conservation Park, 35°13'S, 139°08'E (SAM NN16701); one female with eggsac, Frans Lake, 31°50'S, 134°50'E (SAM NN16742); five females, Goolwa, 35°30'S, 138°46'E (SAM NN16706–10); two males, one female, Hambidge, 33°23'S, 135°57'E (SAM NN16744, NN16747–8); one female, 1 juv., Jimmys Well, Mt Rescue Conservation Park, 35°51'S, 140°18'E (SAM NN16673); three males, Jimmys Well, Mt Rescue Conservation Park, 35°51'S, 140°18'E (SAM NN16674–6); three males, one female with eggsac, Keilira Station, 13 km N, 36°35'S, 140°10'E (SAM NN16677, NN16679–81); one

female, Kokatha Sands, Gawler Ranges, 31°25'S, 135°25'E (SAM NN16731); one female, Malinong, 35°29'S, 139°30'E (SAM NN16702); one female with eggsac, Milang, near, 35°24'S, 138°58'E (SAM NN16703); one female, Ngarkat Conservation Park, 35°47'S, 140°36'E (SAM NN16686); one male, Ngarkat Conservation Park, Pinnaroo–Bordertown Road, 35°42'14"S, 140°48'00"E (SAM NN16684); two males, Ngarkat Conservation Park, Pinnaroo–Bordertown Road, 5 km N of S boundary, 35°45'31"S, 140°47'48"E (SAM NN16690–1); one female, Penola Native Forest Reserve, 37°28'S, 140°51'E (SAM NN16724); one female, Penola Native Forest Reserve, near W edge, 37°28'S, 140°51'E (SAM NN16725); one female, Pine Hill area, S of Iron Baron, 33°21'25"S, 137°4'11"E (SAM NN16752); three females, 1 juv., Pinkawillinie Conservation Park, 33°07'S, 136°00'E (SAM NN16760–1, NN16763); one male, Port Lincoln/Coffin Bay area, 34°45'S, 135°40'E (SAM NN16765); one female with eggsac, Wynarka, 35°07'S, 139°43'E (SAM NN16705); one male, Yumbarra Rockhole, 1 km W, 31°46'19"S, 133°28'20"E (SAM NN16769). **Victoria:** seven females, Lake Albacutja Park, 15 km WNW of Yaapect, 35°40'S, 141°55'E (NMV K7435); two females, Lake Albacutja, NW Corner, ca 15 km WSW Yaapect, 36°04'S, 141°55'E (NMV K7613); one female, Little Desert, 36°33'S, 141°50'E (NMV K8134); one female, Little Desert, Goroka Road, Nihil, 36°33'S, 141°38'E (QM S64940); one female, Mallee, 36°10'S, 146°54'E (NMV K8127). **Western Australia:** 11 females, four females with eggsac, one female with spiderlings, Western Australia (no exact locality, Perth region, W. J. Lane collection; see Lane 1965) (WAM T53879, T53881–3, T53887–94, T53899); four males, 24 females, 2 juv., Attadale, 32°01'S, 115°48'E (WAM 68/1001–11, 68/1051–56, 69/99, 69/376B–384B, 69/401–2, 71/811); two females, Badgerup Swamp, Wanneroo, 31°47'S, 115°50'E (WAM 69/1038–9); one male, Baldvis, 707 Baldvis Road, 32°18'S, 115°50'E (WAM T60074); one male, Balga, 31 Preston Way, 31°52'S, 115°51'E (WAM 73/221); one male, Bold Park, 31°57'S, 115°46'E (WAM T58362); one male, Boorabin, 31°14'S, 120°19'E (WAM T51252); one male, Brentwood, High Road, 32°03'S, 115°51'E (WAM 69/672); one female with eggsac, Bullsbrook, 31°40'S, 115°59'E (WAM 69/916); one male, Cape Cuvier, Quobba Station, 24°13'22"S, 113°30'12"E (WAM T51291); one male, Cape Cuvier, Quobba Station, 24°13'27"S, 113°27'41"E (WAM T51300); six males, Cape Cuvier, Quobba Station, 24°11'35"S, 113°27'20"E (WAM T51292); one female, Cheyne Beach, Albany, at Bluff Creek, 34°55'S, 118°25'E (WAM 68/516); one female with eggsac, Collie, 33°22'S, 116°09'E (WAM 71/1431); two females, Cottesloe, 31°59'S, 115°45'E (WAM 70/195–6); one male, Darkin Road, 32°07'40"S, 116°30'19"E (WAM T58462); six males, Darkin Road, E of (private land), 32°08'26"S, 116°31'45"E (WAM T51247); one female, Darlington, 31°55'S, 116°04'E (WAM T53785); six males, Edel Land, 26°31'39"S, 113°31'36"E (WAM T51298–9); 27 males, Edel Land, 26°31'44"S, 113°29'57"E (WAM T51295–7); one male, Exclamation Lake, 32°47'18"S, 121°24'34"E (WAM T51245); one female, False Entrance, 26°23'S, 113°19'E (SAM NN16780); one female, Fitzgerald River area (no exact location) (WAM 70/207); one male, Forrestfield, Hartfield Park, 32°00'00"S, 115°59'43"E (WAM T55554); three males, Francois Peron National Park, 25°52'31"S, 113°33'01"E (WAM T51293); 12 males, Francois Peron National Park, 25°58'34"S, 113°34'16"E (WAM T51294); one male, Frenchman Bay, 35°05'S, 117°56'E (WAM T55309); one female, two eggsacs, Gelorup, 33°23'S, 115°38'E (WAM T53436); one female with eggsac, Great Northern Highway, 214 mile peg (no exact location) (WAM 69/86); one female, Greenough, Lucy Beach, 28°54'S, 114°42'E (WAM T53637); one male, Greenshields Oak, 17 miles E of Pingrup (Lake Magenta Reserve), 33°30'S, 118°53'E (WAM 71/1421); one male, Gunyidi Nature

Reserve, Midlands Road, 30°11'10"S, 116°01'51"E (WAM T51255); three males, one female, 1 juv., Jandakot, 32°07'S, 115°50'E (WAM T62452); one female, Jandakot, 32°06'S, 115°52'E (WAM T47250); two males, 1 juv., Julimar Conservation Park, North, 31°21'21"S, 116°13'04"E (WAM T51265); three females, Leeman, 29°56'S, 114°58'E (WAM T51559, T53541); two males, Mingenew–Mullewa Road, 28°55'06"S, 115°25'49"E (WAM T51262); one male, Morley, 31°53'S, 115°54'E (WAM T53660); one male, Mount Sterling Road, 31°59'27"S, 117°24'19"E (WAM T51261); three males, Mullaloo, 4 km at 30° from, 31°47'S, 115°44'E (WAM T53464); one male, three females, Murdoch University campus, 32°04'S, 115°49'E (WAM T51250, T62470); one female, Namban Nature Reserve, Namban West Road, 30°22'17"S, 115°59'12"E (WAM T51256); three females, 3 juv., North of Fitzgerald and Susetta Rivers jct., 34°01'S, 119°27'E (WAM 71/5–10); four males, 1 juv., Northampton, S of, Tip Road, 28°31'57"S, 114°44'18"E (WAM T51266); one male, Parmelia, 32°15'S, 115°47'E (WAM T55429); one female, Point Peron, Lake Richmond, 32°17'S, 115°43'E (WAM 70/197); 127 males, Queen Victoria Springs Nature Reserve, 30°14'S, 123°41'E (WAM T48384, T48386, T48388–9, T48393, T48395–6, T48461, T48464, T48467, T48470, T48474, T48478, T48482, T48485, T48501–2, T48532, T48536, T48545, T48549, T48554, T48577, T48583, T48594, T48611, T48619, T48689, T48693, T48696, T48705, T48709, T48713, T48741, T48747, T48777, T48780, T48785, T48792, T48801, T48807, T48810, T48817, T48867, T48873, T48883, T48889, T48896, T48956, T48985, T52912, T53057, T53061, T53081, T53085, T53089, T53093, T53112, T53115); one male, Reabold Hill, Pert, 31°56'S, 115°46'E (WAM 73/151); four males, one female with eggsac, Rossmoyne, 32°02'22"S, 115°45'39"E (WAM 68/857, 69/83–4, 69/881, 71/1847); one female, Rottneat Island, 32°00'S, 115°30'E (WAM 68/859); two males, Stirling Range Caravan Park, 34°18'55"S, 118°11'14"E (WAM T56398); one male, 1 juv., Trigg, 31°53'S, 115°45'E (WAM 71/1423–4); two males, Wanneroo scrub, 31°45'S, 115°48'E (WAM 69/831–2); one male, Warnbro, 32°20'S, 115°43'E (WAM T51244); one male, Wilson, 32°02'S, 115°55'E (WAM 69/882); one female, Wongan Hills region, 30°53'S, 116°40'E (WAM 94/1910); one male, one female, one female with eggsac, Yanchep, 31°33'S, 115°41'E (WAM T42157–8, T58321); one female, York, 7 miles W of, on York–Perth Road, 31°53'S, 116°39'E (WAM 68/858); seven males, one female, Zuytdorp, 27°15'28"S, 114°09'02"E (WAM T51305); one male, Zuytdorp, 27°15'42"S, 114°09'09"E (WAM T51301); one male, Zuytdorp, 27°15'25"S, 114°11'16"E (WAM T51306).

Diagnosis

Dingosa serrata is most similar to *D. simsoni*, but differs in the shape of the tegular apophysis of the male pedipalp which is keeled about halfway and has a broad tip (pointed tip curled ventrally in *D. simsoni*). The female epigyne is considerably longer than wide in contrast to all other species within *Dingosa* in which it is generally wider than long.

Description

Male. Based on WAM T62462.

Prosoma, dorsal shield (Figure 1G): dark brown; indistinct black radial pattern; white radial lines of white setae; light brown median band widening anteriorly; two short and dark brown longitudinal lines behind PLE; narrow median line of white setae between eyes and diagonal line of white setae between PME and PLE; distinct light brown submarginal

bands; dark brown, blotchy marginal bands; white setae in median and submarginal bands; otherwise black setae; few brown macrosetae around eyes; four bristles below AE, one long bristle between AME.

Sternum: yellow-brown; white setae and ca 10 long brown macrosetae.

Labium: longer than wide; brown; front end truncated and white.

Chelicerae: light brown; covered with dense white setae.

Pedipalps (Figure 6A, B): terminal apophysis broad, embolus sickle-shaped with pointed tip; tip of tegular apophysis broad (Figure 6B).

Opisthosoma (Figure 1G): dark brown to black with laterally serrated median band; light yellow-brown lines laterally of serrated band; lateral sides of opisthosoma dark olive-brown; serrated band with silvery setae, serrated corners darker as they carry dark brown setae; white setae in yellow-brown bands. Venter yellow-brown; covered with white setae, few brown setae in front of epigastric furrow. Spinnerets light brown.

Legs: leg formula VI>I>II>III; brown, femora with lateral darker brown longitudinal banding; scopulate setae ventrally on metatarsi of leg I and II. Spination of leg I: femur: three dorsal, one prolateral; two apicoprolateral, two retrolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: one dorsal in apical half, three ventral pairs, two prolateral, two retrolateral; metatarsus: three ventral pairs, two prolateral, two retrolateral, one apicoventral, one apicoprolateral, one apicoretrolateral.

Female. Based on WAM T73725.

Prosoma, dorsal shield (Figure 1H): as male.

Sternum: yellow-brown, centrally with greyish pigmentation; setae as male.

Labium: longer than wide; brown; front end truncated and white.

Opisthosoma as male (Figure 1H). Venter yellow, covered with white setae. Spinnerets light brown.

Epigyne, ventral view (Figure 6C): longer than wide, anterior pockets separated, median septum indistinct.

Epigyne, dorsal view (Figure 6D): heads of spermathecae elongated; stalks of spermathecae short.

Legs: leg formula IV>I>II>III; coloration and scopulate setae as male. Spination of leg I: femur: three dorsal, two apicoprolateral, two retrolateral, one apicoretrolateral; patella: one prolateral, one retrolateral; tibia: three ventral pairs, two prolateral; metatarsus: three ventral pairs, one apicoventral.

Measurements. Male WAM T58362 (female WAM T62470): TL 13.75 (15.00), PL 6.88 (6.88), PW 5.25 (5.00). Eyes: AME 0.30 (0.27), ALE 0.24 (0.21), PME 0.48 (0.61), PLE 0.45 (0.52). Row of eyes: AE 1.36 (1.48), PME 1.52 (1.70), PLE 1.64 (2.18). Sternum (length/width) 2.75/2.38 (2.50/2.38). Labium (length/width) 0.94/0.91 (0.91/0.94). OL 6.25 (8.50), OW 4.13 (6.75). Legs: lengths of segments (femur+patella/tibia+metatarsus+tarsus=total length): pedipalp 3.00+2.88+ – +2.50=8.38, I 6.13+8.38+6.38+3.50=24.38, II 6.00+7.63+6.13+3.50=23.25, III 5.63+7.13+6.88+3.50=23.13, IV 7.38+9.63+9.00+4.25=30.25 (pedipalp 2.88+2.50+ – +1.88=7.25, I 5.88+6.50+4.25+2.38=19.00, II 4.75+5.63+4.13+2.38=16.88, III 4.50+5.25+4.38+2.38=16.50, IV 6.13+7.63+6.75+2.63=23.13).

Variation. Males (females) (range, mean \pm SD): TL 8.55–13.75, 10.72 \pm 1.44; PL 4.80–6.88, 5.56 \pm 0.68; PW 3.00–5.25, 4.04 \pm 0.60; $n=17$ (TL 9.45–16.80, 13.21 \pm 2.13; PL 4.80–7.35, 6.12 \pm 0.68; PW 3.45–5.40, 4.43 \pm 0.51; $n=25$).

Life history and habitat preferences

The majority of mature males were found in March and April, but some were recorded already in February and as late as June. Mature females were found from May to November, with highest numbers between May and August. Females with eggsac were recorded from July until November (see also Lane 1965; McKay 1979). Some females appear to persist through the summer months and copulate the following season (McKay 1979).

Similar to all other *Dingosa*, *D. serrata* is most common on sandy soils. Habitat descriptions include “sand hills”, “sand plains” and “on sand with *Scirpa* and *Callitris*”, but also “samphire—lithic complex”, “reedy dry swamp”, “outer edge of spinifex” and “edge of lake”.

The burrow of this species is open, vertical and ca 10–20 cm deep. It is surrounded by a palisade made up of a variety of materials (McKay 1979). During summer, the turret is usually constructed of grass, but towards winter, there is a trend to use leaves and short pieces of wood for renovating and widening (Lane 1965). Burrows are usually restricted to areas where there is little or no slope (Lane 1965). *Dingosa serrata* uses the turret as a barricade whilst waiting for prey. The spider stands on the turret seemingly to increase the distance of vision (Lane 1965; V. W. Framenau, personal observation).

Remarks

Dingosa serrata was originally described from material of the Bradley Collection. The whereabouts of this collection is unknown and therefore the types are considered lost (Framenau 2005). However, L. Koch’s (1877) accurate description and illustration of the epigyne leave no doubt about the identity of this species.

Lane (1965) dedicated a large portion of his PhD studies to *Dingosa serrata*, however, examination of his reference material in the collection of the WAM revealed that his study was based on more than one species. His material also included, in smaller numbers, *D. simsoni* and *D. murata*. Similarly, records listed in McKay (1979) as *Pardosa serrata* include a considerable number of misidentifications and juvenile material that cannot be reliably identified to specific level. Consequently, the information provided by Lane (1965) and McKay (1979) as listed above must be treated cautiously in respect to species-level ecological traits.

Distribution

Western and South Australia, occasionally found in New South Wales, Victoria, and Queensland (Figure 7).

Discussion*Species misattributed to Dingosa*

In addition to *D. simsoni*, nine species from Australia, Africa, South America, China, and the Middle East were listed in *Dingosa* prior to this study (Platnick 2007). Critical evaluation of type material or the original species description reveals that none of these species can be attributed to *Dingosa*. To facilitate future revisions of these species we here propose more appropriate generic placements based mainly on the original descriptions.

Dingosa topaziopsis (Hogg, 1896): this species was described from an early immature holotype (NMV K0943, from Stevenson River, South Australia, examined) and subsequently reported from central Australia based on a second juvenile (Rainbow 1915). The holotype is clearly not a *Dingosa* as diagnosed here, as it does not show the typical prosoma and opisthosoma coloration and does not have an elevated cephalic area. Due to its immature condition it cannot be attributed to any adult wolf spider from Australia and is here considered *nomen dubium*.

Dingosa venefica (Keyserling, 1891): the genitalic characters of this species described from Brazil (type material male and female from Rio Grande, Rio Grande do Sul, Brazil; BMNH 2724–2725) do not conform to the subfamily Lycosinae, but are consistent with species in the subfamily Allocosinae Dondale, 1986 (É. Alvares, personal communication). A transfer to *Allocosa*, the single genus within this subfamily, is pending (É. Alvares, personal communication).

Dingosa liopus (Chamberlin, 1916): this species was described based on a single female from Santa Ana, Peru (MCZ 282). The original description shows a colour pattern and an inverted T-shaped median septum in the female epigyne reminiscent of the genus *Hogna* Simon, 1885. The species is clearly not a member of the genus *Dingosa* as diagnosed here. A transfer to *Hogna* is pending (É. Alvares, personal communication).

Three species were originally placed in *Dingosa* by Roewer (1959), and all three were described based on single females only: *Dingosa angolensis* Roewer, 1959 (Mossamedes, Angola; SMF 9910469 (RII/10469/1)), *Dingosa completa* Roewer, 1959 (Tete, Mozambique, SMF 9910015 (RII/10015/1)), and *D. hartmanni* Roewer, 1959 (Aruscha, Tanzania; SMF 9911723 (RII/11723)). Roewer's (1959) stylized illustrations are difficult to interpret, but clearly show that these species are wrongly placed in *Dingosa*. The epigyne illustrations of all three species appear to show similarities with *Pardosa*. Two other species described in *Dingosa* by Roewer (1959) were subsequently synonymized and transferred to the *nebulosa*-group within *Pardosa*, *P. lusingana* Roewer, 1959 (Alderweireldt and Jocqué 1992). Consequently, we transfer the remaining three *Dingosa* to *Pardosa*: *Pardosa angolensis* (Roewer, 1959), comb. nov., *Pardosa completa* (Roewer, 1959), comb. nov., and *Pardosa hartmanni* (Roewer, 1959), comb. nov., pending a revision of African *Pardosa*.

Dingosa persica Roewer, 1955: Roewer (1955b) described this species from a female collected in Lahidschan, Iran (SMF 9910467 (RII 10467/1)) in the same publication in which he formally described *Dingosa*. Mozaffarian and Marusik (2001) proposed a new combination in the genus *Trochosa* C. L. Koch, 1847 based on the original illustration, which was not accepted by Platnick (2007) as it was not based on the examination of the type material. The illustration of the female epigyne by Roewer (1955b) shows an inverted T-shaped median septum much like that in representatives of *Trochosa* and very different to *Dingosa*. In addition, the coloration of this species as described by Roewer (1955b) supports a placement in *Trochosa*. Consequently, we follow Mozaffarian and Marusik (2001) in placing this species in *Trochosa*: *Trochosa persica* (Roewer, 1955).

Dingosa tragardi (Lawrence, 1947): this species was described in the genus *Lycosa* from a juvenile female holotype collected in Umbonumbi, South Africa. It was subsequently transferred to *Hogna* (Roewer, 1955b) and finally to *Dingosa* (Roewer, 1959). The type of the species is not present in the Natural History Museum Gothenburg, Sweden, where it is expected to be housed and must be considered lost (T. Nordander, personal communication). Any generic placement of juvenile wolf spiders must be considered doubtful as many generic characters are based on genital morphology. As it appears to be unlikely that the identity of this species can be elucidated, we consider *D. tragardi* a *nomen dubium*.

Dingosa ursina (Schenkel, 1936): this species from China was originally described in the genus *Lycosa* (Schenkel 1936). The original illustration of the female epigyne and the description of a uniformly dark brown spider clearly do not conform to *Dingosa*. Roewer (1955b) listed this species in *Schizocosa* Chamberlin, 1904 but he later transferred it to *Dingosa* (Roewer 1959). Song et al. (1999) regarded *D. ursina* as *species inquirenda*. Schenkel's (1936) original description does not support a placement in either *Lycosa* (a putatively Mediterranean genus; Zyuzin and Logunov 2000), *Schizocosa* (a Nearctic genus; e.g. Stratton 2005), or *Dingosa* as diagnosed here, but supports a close similarity with *Trochosa* in both the shape of the epigyne and the characteristic longitudinal bands in the median band of the prosoma. Consequently, we transfer this species to *Trochosa*: *T. ursina* (Schenkel, 1936), n. comb.

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