

Australians have a love-hate relationship with spiders. On the one hand spiders inspire fear with dangerous species including the Redback and the Sydney Funnelweb. On the other hand Peacock Spiders, whose males spread a colourful fan and wave their legs in a courtship dance to impress females, have won rapturous appreciation worldwide. This book's main aim is to use photographs of living animals to give people the means to identify many of the spiders they encounter, at least to the family level, and in some cases to genus and species. Featuring over 1300 colour photographs, it is the most comprehensive account of Australian Spiders ever published. With more than two thirds of Australian spiders yet to be scientifically described, this book maps the territory and sets the scene for future explorations of our extraordinary Australian fauna.



The authors

Robert Whyte is an honorary researcher in arachnology at the Queensland Museum, having developed an interest in spiders with the encouragement of arachnologist Robert Raven. He has participated in four Bush Blitz biodiversity expeditions in remote parts of Western Australia and the Northern Territory. He is an accomplished editor, author and journalist, with skills in photography and publication design.

Greg Anderson is a biomedical research scientist and heads the Chronic Disorders Program at the QIMR Berghofer Medical Research Institute in Brisbane. He has been interested in spiders since his early life in Newcastle and has travelled extensively around Australia and other parts of the world studying and photographing spiders. He has a particular interest in Comb-footed Spiders.



A GUIDE TO THE SPIDERS OF AUSTRALIA

Robert Whyte and Greg Anderson



A FIELD GUIDE TO THE SPIDERS OF AUSTRALIA

ROBERT WHYTE AND GREG ANDERSON



Foreword

Read no further – unless you are willing to fall in love with spiders. Submitting to the pages that follow could change your life. You will want to convert all your friends to a love of spiders so that they can still be your friends. This will be easily done because you will have this book to show or give to them. It consigns to the prejudice bin the silly idea that a passion for invertebrates is uncool. This book pulses with the gratitude felt by two naturalist-scientists who have drawn inspiration from those little scuttling things many people recoil from.

As children most of us were taught to dislike and fear spiders. I remember the time after school I climbed high up a mango tree to a ball of straw: a finch nest in the leafy crown. I slid two fingers inside and felt the soft down of the chicks nestled within. When I withdrew my fingers a giant huntsman spider burst out and I realised I had been enjoying myself by fondling a hairy spider. I recoiled from the idea, but today I am wise enough to know that spiders should be enjoyed in every possible way. This book invites us all to do that.

I have known one of the authors for more than 35 years. Robert Whyte showed negligible interest in nature in his twenties. This book shows how deeply and successfully he has embraced his life's purpose. He had the Queensland Museum's curator of spiders, Robert Raven, whom I have known for even longer, as an excellent mentor.

This book shows us there is more to spiders than we might think. There are Peacock Spiders that outdo butterflies for beauty. (That might seem an exaggeration, but the photos show it is easily true.) Almost as striking is the Christmas Jewel Spider, and then there are the mating Long-jawed Spiders shown on page 320. There are



Tim Low is the author of *Where Song Began*, which explored the biogeography of Australian birds and explained how northern hemisphere thinking had skewed our understanding. *Where Song Began* became the first Australian nature book ever to win General Non-fiction Book of the Year.



The photogenic Christmas Jewel Spider *Austracantha minax* Fish River Station NT PHOTO: ROBERT WHYTE. ♀ 8 mm ♂ 4 mm

all the spiders that practise mimicry, by imitating bird droppings, ants, flies, beetles or parts of flowers. Some of them even mimic different ant species at different stages of growth. The Green Tree Ant of the tropics has three different spider mimics, so if imitation really is a form of flattery, that ant must be full of conceit. There are other spiders that look ordinary but do extraordinary things. Fishing Spiders skate over the water and catch fish, and some spiders live entirely by thieving from other spiders. Australia's seashore spiders have travelled to New Zealand, presumably by travelling in crevices on floating logs. And then there are the flat Huntsman Spiders that live in

colonies of up to 300. You have arrived as a spider devotee when you can peel back bark and look with joy rather than unease upon a teeming mass of these.

Birdwatchers carry binoculars as a matter of course and we should all be carrying magnifying glasses so we can properly enjoy life at the small end of the spectrum. Butterflies win more praise than Peacock and Jewel Spiders only because they are larger. This book is something we should be carrying as well. The introductory chapters are loads of fun and the photos are enchanting.

Tim Low



Maratus volans Flying Peacock Spider ♂ Sydney NSW PHOTO: JÜRGEN OTTO. ♀ 6 mm ♂ 5 mm



Myrmarachne smaragdina Green Tree Ant Mimic ♀ Darwin NT PHOTO: GREG ANDERSON. ♀ 7 mm ♂ 6 mm



Left *Amyciaea albomaculata* Green Tree Ant Mimic JUV from the crab spider family Thomisidae, Darwin NT. Right *Propostira* sp. Green Tree Ant Mimic ♂ from the family Theridiidae, Daintree QLD PHOTOS: GREG ANDERSON. "The Green Tree Ant of the tropics has three different spider mimics, so if imitation really is a form of flattery, that ant must be full of conceit." ♀ 7 mm ♂ 6 mm

Maratus personatus Masked Peacock Spider ♂
 Cape Riche WA PHOTO: JÜRGEN OTTO. This species
 has been celebrated widely as the cutest
 spider in the world. ♀ 4 mm ♂ 3 mm



Introduction

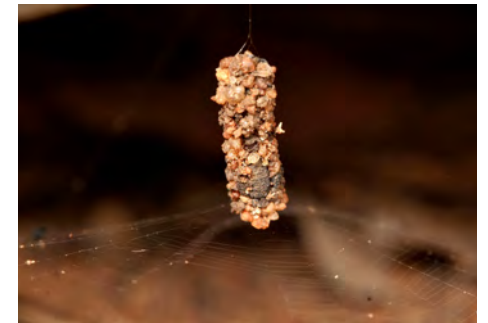
This is a book about an often misunderstood, sometimes feared group of animals, illustrated with beautiful images and informed by good science. Its simple aim is to inspire interest in the natural world and its invertebrate wonders.

As a child, you might have been lucky enough to play in local creeks, scooping up shrimps and water beetles in a jar with rainbow fish, tadpoles, skaters and dragonfly nymphs. The aim of this book is to inspire a similar wonder, delight and interest in tiny jewel-like spiders glinting from their hiding places under leaves, or

large spiders of ancient lineages, spending their lives underground. To be able to identify and understand these creatures will surely make the time you spend in natural places more vibrant and meaningful.

Popular nature guides are well-trodden ground, if not for spiders, then for many other groups of animals. Most of all, birds and butterflies are the clear winners in the field-guide genre. But why stop there? Birds and butterflies might be just the beginning. There is so much more out there.

If you are already a backyard naturalist, you may have ventured into the world of



Who doesn't like a good mystery? These spiders have a pebble-encrusted retreat suspended above a horizontal orb web pulled up at the centre. You don't see that every day. Strangely, they seem to resemble spiders from Brazil, notably the Twelve-spotted *Spilasma*. Laurence Sanders discovered this unusual critter about 15 km west of Emerald in a strip of land between the highway and the railway line. Researchers at the George Washington University in Washington D.C. are on the case. DNA analysis so far has suggested this is a quite independent case of pebble-encrusted retreats and this spider is related to *Arachnura*, not at all related to *Spilasma*. Such mysteries are an almost everyday occurrence in arachnology and it is discoveries like this that make spidering so much fun. PHOTOS: LAURENCE SANDERS ♀ 4 mm

Thwaitesia nigronodosa Mirror-ball
Spider (also known as Black-spotted
Thwaitesia) ♀ Brisbane QLD PHOTO: ROBERT
WHYTE. ♀ 6 mm ♂ 5 mm



Spider families from A to Z

It's extremely difficult, if not impossible, to avoid the technical terms Araneomorphae and Mygalomorphae if you want to get a handle on this whole spider thing.

Araneomorphae is a group of spider families which have fangs that point inwards towards each other. Most have two lungs and many use a variety of silk types. They have many different lifestyles.

Mygalomorphae is a group of spider families with fangs parallel to each other and directed towards the rear of the body, four lungs and simple silk types. They live in burrows in the ground or trees.

In this book spider families are presented alphabetically by scientific name in three major groups: Araneomorphae, then Mygalomorphae and finally Little-known spider families.

By far the largest section is the first one, showing the 30 most common araneomorph families and the spiders that belong to them, from Araneidae (Orb-weavers) on page 49 to Zodariidae (Ant-eating Spiders) which ends on page 379.



Idiommata sp. Northern Brush-footed Trapdoor ♂
Cape York QLD PHOTO: ROBERT WHYTE. This is a spider in
Idiopidae, a mygalomorph family. Mygalomorphs
start on page 381. ♂ 22 mm ♀ unknown.

This is followed by a section with all nine families of mygalomorphs, starting with Actinopodidae (Mouse Spiders) on page 382 to Theraphosidae (Australian Tarantulas) which ends on page 405.

The final section of family descriptions and species accounts is made up of another 39 Little-known families, starting with Agelenidae on page 406 and ending with Zoropsidae on page 435.

Many of the spiders in the Little-known spider families are small and hard to see. Others might be found only in remote parts of Australia and others are extremely rare. Spiders from one of these Little-known families, Periegopidae, haven't been seen in Australia since the early 1980s.

Another way of understanding these groups is by looking at the family tree diagram of the most common araneomorph families and all the mygalomorphs on Spiders: family tree on page 446. It's easy to flip to, being the last two-page spread just inside the back cover.



Austrarchaea sp. Lacey's Creek QLD JUV PHOTO:
GREG ANDERSON. This is a little-known spider, almost
never collected due to its small size and cryptic
camouflage. The section of Little-known spiders
starts on page page 406. ♀ 4 mm ♂ 3 mm

Cyrtophorinae Tent-web Orb-weavers

This subfamily includes *Cyrtobill* and *Cyrtophora* in Australia. Most well known is the common tropical and subtropical *Cyrtophora moluccensis*, an archetypal tent-web spider with a central, peaked retreat above a horizontal, domed web. These large spiders usually build webs in places where

a crosswind brings a steady stream of airborne prey. There are often many spider webs in loose colonies. *Cyrtophora* spp. are mainly found in coastal areas of the warmer states. *Cyrtophora parnasia*, its tent retreat often decorated with debris, is found in southern Australia including Tasmania.



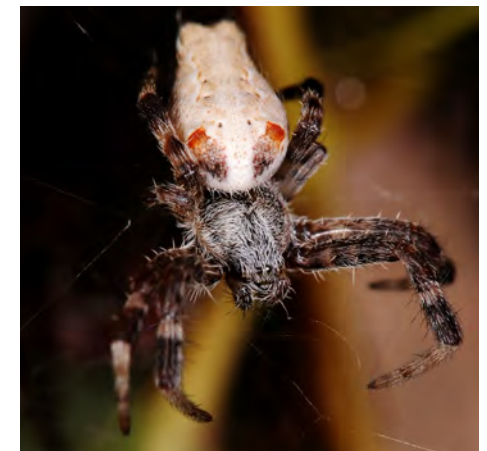
Tent web of *Cyrtophora moluccensis*,
Brisbane QLD PHOTO: ROBERT WHYTE.



Cyrtobill darwini Darwin's Cyrtobill. Left ♀ Cloncurry QLD PHOTO: GREG ANDERSON. Right ♀ Glenmorgan QLD PHOTO: ROBERT WHYTE. This common spider makes horizontal webs in spinifex in open woodland. It is widespread throughout the northern half of inland Australia but small and rather secretive. This species or one very like it is also found in coastal areas. During the day it realigns itself in its web to reduce its heat load. ♀ 4 mm ♂ 4 mm



Cyrtophora cordiformis Heart-shaped Tent-web
Orb-weaver ♀ Daintree QLD PHOTO: GREG ANDERSON.
This medium-sized species is common in northern
Australia. It somewhat resembles *Cyrtophora*
exanthematica. ♀ 9 mm ♂ 5 mm



Cyrtophora crassipes Fat-legged Tent-web
Orb-weaver ♀ Emerald QLD PHOTO: LAURENCE SANDERS.
It is quite common around Sydney, according to
Mascord. It is also found in northern Australia.
♀ 8 mm ♂ 5 mm

Deinopidae Net-casting Spiders

Deinopids in the genera *Deinopis* and *Menneus* catch their prey with a roughly rectangular net of silk held open with their legs. When they detect a suitable prey item, they expand the net and lunge forward to engulf the prey with it. The net is made with a special woolly silk from an organ called a cribellum located on the underside of the abdomen near the spinnerets.

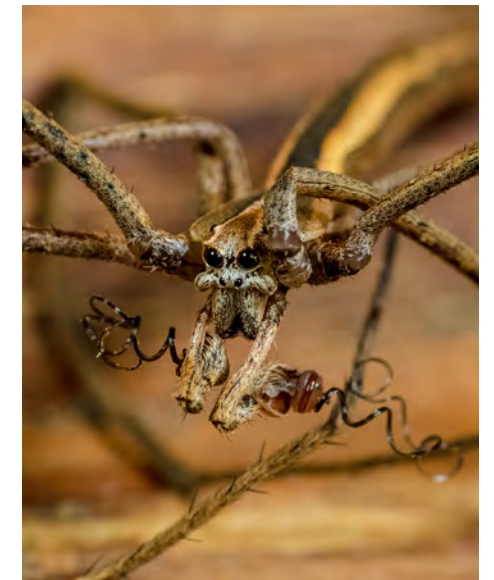
Deinopis spp. have extremely sensitive, wide-angle posterior median eyes (the middle eyes in the rear row). They are about 2,000 times as sensitive as the eye of a human or a jumping spider.

They use these large eyes only at night. When daylight approaches, the spiders digest their 'retinas' (the light sensitive material in their eyes). Each evening at dusk

they regrow their super-sensitive retinas to be able to see again. Because of their huge eyes *Deinopis* spp. are also known as ogre-faced spiders. *Menneus* spp. do not have such large eyes.

In this family the male's inseminating embolus is tightly coiled up to 20 times in a spiral. The female organ has the corresponding coils to receive it. During copulation the embolus unwinds, rotating itself into the female in a marvel of sexual engineering.

In Australia it appears *Deinopis subrufa* has been described under a number of different names and future taxonomic work is likely to synonymise them (bring them under one name).



Deinopis subrufa Ogre-faced Netcaster. Left ♂ Brisbane QLD, right ♂ Carnarvon Station QLD PHOTOS: ROBERT WHYTE. The spider on the right moulted in captivity but lacked space to complete the process. The pressure of trying to straighten its legs has popped the normally tightly-coiled embolus (fertilizing organ) from the palp. ♀ 18 mm ♂ 18 mm

Opposite *Deinopis subrufa* Ogre-faced Netcaster ♀ Wonboyn NSW PHOTO: PAUL WHITINGTON. ♀ 18 mm ♂ 18 mm

Dimidamus dimidiatus Small Red-and-black Spider ♂ Mount Mee QLD PHOTO: ROBERT WHYTE. This is one of the more common nicodamid species. There are another 10 species in *Dimidamus*, four of them in PNG. *Dimidamus dimidiatus* is found from QLD to mid-coastal NSW. ♀ 6 mm ♂ 4.5 mm



Nicodamidae Red-and-black Spiders

Nicodamids are small to medium-sized spiders with vivid red-and-black colours, often an entirely red cephalothorax and a black or two-coloured black and red abdomen. They are known only from Australia (including Tasmania) and Papua New Guinea. They have eight eyes in two straight rows and long, slender legs which may feature black sections. They build fairly sturdy sheet webs at ground level.

Before 1995 when Mark Harvey reviewed the family, Nicodamidae was thought to contain only a small number of species. Now there are many.

Nicodamus peregrinus is widespread, from the Nullarbor to the east coast as far north as Mackay, Queensland. *Nicodamus mainae* is found in south-western Australia.

Durodamus only occurs in parts of

eastern Australia where the average annual rainfall is less than 500 mm.

Ambicodamus has 11 species in areas with an average annual rainfall over 500 mm. *Ambicodamus kochi* and *Ambicodamus marae* are from Western Australia. Nine other *Ambicodamus* species are found in eastern Australia.

Litodamus is known only from Tasmania. *Novodamus* is found in Tasmania, Victoria and New South Wales.

Oncodamus occurs east of the Great Dividing Range, *Oncodamus bidens* in southern New South Wales, and *Oncodamus decipiens* more northerly.

Nicodamids range from 3 mm to 12 mm in body length.



Litodamus hickmani Hickman's Red-and-black Spider ♀ Hobart TAS PHOTO: GREG ANDERSON. *Litodamus* has three species, so far only found in TAS. ♀ 5 mm ♂ 5.5 mm



Judalana lutea Judy and Alan's Ant Mimic. Left ♂ Grafton NSW, right ♀ Brisbane QLD PHOTOS: IAIN R. MACAULAY. Mike Rix documented this new genus and named it after his parents. It is a convincing ant mimic found throughout eastern Australia in open forest mainly on *Acacia disparrima*. The ant *Opisthopsis rufithorax*, which it strongly resembles, can also be found on these trees. In Latin *luteus* means bright orange. ♀ 4.5 mm ♂ 3 mm



Leg-plumed Ant Mimics. Left ♀ *Ligonipes lacertosus* Ku-Ring-Gai Chase NSW PHOTO: GREG ANDERSON. Right ♂ *Ligonipes semitectus* Girraween QLD PHOTO: ROBERT WHYTE.

Ligonipes spp. are generally medium-sized as opposed to the similar *Rhombonotus* which can be small to tiny. *Ligonipes* also have a less constricted 'waist' of the abdomen. Below, a subadult male similar to the female above left, from Cann River VIC PHOTO: IAIN R. MACAULAY. ♀ 8 mm 8 mm



Peacock Spiders – tiny dancers going viral as video stars

Peacock Spiders are the rock stars of the spider world. Their worldwide acclaim is due in large part to the enthusiasm of Jürgen Otto, who became fascinated by the tiny Peacock Spider males which extend their brilliantly-coloured fans and wave their legs in a display for their female partners. Their fans are flaps and fringes on the sides of the abdomen, normally folded away, inflated and spread wide when displaying as shown in the photo below.

Jürgen's 2011 video of their dance, featured on ABC TV program *Catalyst*, created a

sensation and by 2017 Jürgen's YouTube video of the display of Peacock Spider *Maratus speciosus* (below) scored more than 6 million views. Jürgen, with USA-based jumping spider expert David Hill, has described over 30 species and more are on the way.

Peacock Spider fever has swept the country, with Facebook pages popping up all over the place. As Peacock Spiders only live in Australia, scientists now come here just to study them. There seems no end to their diversity and no limit to their appeal.



Maratus speciosus Orange-fringed Peacock Spider ♂ Perth region WA PHOTO: JÜRGEN OTTO. A video starring this species displaying in courtship has had over 6 million views on YouTube.



Myrmarachne bicolor Red-and-black Ant Mimic. Top left ♂ Townsville QLD, top right ♀ Ingham QLD PHOTOS: ROBERT WHYTE. Second row left ♂ right ♀ Ingham QLD PHOTOS: IAIN R. MACAULAY. Perhaps this species should have been named tricolor or quadricolor, as it comes in several colour forms. It can be yellow-orange and black, red and black or entirely black, a form once thought to be a separate species, *Myrmarachne rubra*. This species is widespread and common across tropical Australia. ♀ 5 mm ♂ 5 mm



Myrmarachne erythrocephala (daemeli form) Daemel's Red-headed Ant Mimic ♂ Torbanlea near Maryborough QLD PHOTO: IAIN R. MACAULAY. This is one of three distinct forms of this species which doesn't really have a red head, despite the name. It is the least common of the forms, found in central to southern QLD. ♀ 5 mm ♂ 5 mm

Myrmarachne erythrocephala (erato form) Red-headed Ant Mimic ♀ Kyogle NSW PHOTO: ROBERT WHYTE. This is the most common form of *Myrmarachne erythrocephala*, extremely widespread, from north QLD down the coast to southern NSW, with records in WA. It has a dark cephalothorax and a dark first section of the abdomen before the constricted waist. ♀ 5 mm ♂ 5 mm

Ant, ant, on the wall, who mimics you best of all?

Myrmarachne spp. are Australia's most common and perhaps most convincing ant mimics. The name literally means ant-spider. Worldwide there are more than 220 described species, mainly in the tropical zone, with a few species extending to temperate zones.

Their mimicry is Batesian and complicated. It is Batesian to avoid predators by mimicking relatively unpalatable organisms, and complicated because within some spider species different ants are mimicked at different stages of growth (transformational mimicry).

In 2016 Stano Pekar reviewed eastern Australian *Myrmarachne* by studying holotypes held mostly in European museums, as well as specimens in Australian museums. He also looked at 400 freshly-collected specimens.

He found there were four species groups. The first contained *Myrmarachne bicolor*, *Myrmarachne macleayana* and *Myrmarachne milledgei*.

The next group contained *Myrmarachne helensmithae*, *Myrmarachne lupata*, *Myrmarachne macaulayi* and *Myrmarachne smaragdina*.

A third group contained *Myrmarachne erythrocephala*, *Myrmarachne luctuosa* and *Myrmarachne striatipes*. Finally, *Myrmarachne zakkai* is in a group of its own.

Myrmarachne jugularis was found to be a junior synonym of (same as) *Myrmarachne macleayana*. *Myrmarachne cognata* and *Myrmarachne simoni* were really *Myrmarachne luctuosa*. *Myrmarachne rubra* is actually *Myrmarachne bicolor*.

In four species there are recognised forms. *Myrmarachne erythrocephala* has daemeli, erato and ornata. *Myrmarachne luctuosa* has aurea and aeneopilosa. *Myrmarachne striatipes* has striatipes and urens. *Myrmarachne macleayana* has foreli and robsoni. *Myrmarachne milledgei* has rufithorax and obtusa.

If you feel downhearted because this seems incredibly complicated, don't worry, it is. It's not just you. It's nature. The pictures will help. Locations are also important, as some species only occur in the tropics.

Below: *Myrmarachne erythrocephala* (erato form) ♀ Nudgee QLD PHOTO: ROBERT WHYTE. ♀ 5 mm ♂ 5 mm



Opisthoncus alborufescens Red-and-white *Opisthoncus* ♂ Glenmorgan QLD PHOTO: ROBERT WHYTE. Known from south and inland QLD. The female of this species has a white pattern encircling the bump in the middle of the carapace. The male holotype (original specimen for its description) has been lost. ♀ 5.5 mm ♂ 6 mm



Calling all citizen scientists for project *Opisthoncus*

Opisthoncus is a genus of medium to large-sized daytime hunters. They are probably the most commonly-encountered Jumping Spiders in Australian gardens. *Opisthoncus* is Expert Marek Zabka says it is likely we have more than 100 Australian species, but currently only around 30 are officially known.

However some of the species in the World Spider Catalog (our global reference) are problematic. At least two will have to be merged into a single species and perhaps more males described on their own will be matched up with lone females. This happens a lot to species where only one gender was described, something we try to avoid today.

Opisthoncus species are mostly easy to identify because of a conspicuous bump in the middle of the carapace. A few known species, however, do not have this bump. Experts, as usual, peer down microscopes at spider

genitalia to be sure.

It is likely some species will have to be moved into new genera if they don't have the bump and have non-conforming genitalia. *Opisthoncus abnormis* and *Opisthoncus tenuipes* (really only one species) belong to this group of probably-not *Opisthoncus*.

Most of all we need observations of biology: behaviour and life cycles in nature. There are plenty of specimens in museums, but little is known about how they live and interact, who's having sex with whom, and how they bring up their young. It could be a case of citizen science to the rescue, given how common these jumpers are in gardens.

So it's over to you, if you are up to the challenge. See what you can find, and don't forget to take your camera with you.

Opisthoncus sp. Two-spot-big-jaw-northern ♂ Daintree QLD PHOTO: GREG ANDERSON. This is an undescribed species without the carapace-bump but with classic opisthoncus genitalia. ♀ 5.5 mm ♂ 6 mm



Tetragnathidae Long-jawed Spiders

Long-jawed Spiders (also known as Four-jawed Spiders) contain a number of rather different looking genera, only some of them with enormous chelicerae. *Tetragnatha* is the genus for which the family is named, but there are many more with chelicerae less extreme.

Many tetragnathids are associated with watercourses or wet forests. *Leucauge* spp. are well known from parks and gardens.

Spiders in this family all have eight eyes in two rows, curved towards the rear. They have long, slender legs ending in three claws. They mostly have orb webs, some horizontal, some vertical. Dense aggregations, almost to the point of colonies, are sometimes found near water where their webs overlap. Tetragnathids are found all over the world, mostly in the tropics.

In Australia, the subfamily Tetragnathinae (with only the genus *Tetragnatha*) seems distinct and coherent, but others containing *Leucauge*, *Dolichognatha*, *Mesida*, *Meta*, *Tylorida* and *Nanometa* seem rather vaguely defined and would benefit from closer study.

Pinkfloydia harveyi is a Western Australian species belonging to the *Nanometa* group. It challenges previous thinking about sister families to the Tetragnathidae, bringing a relationship with Mimetidae (Pirate Spiders) into the mix.

Leucauge spp. can be recognized by a row of feathery, air-sensitive hairs on the femurs of the fourth leg. They are extremely attractive spiders, with reflective silver visible through the transparent skin,

made of crystalline deposits of guanine, a by-product of digestion. This is combined with vivid blobs and streaks of green, red, orange, blue and black. They have slanted webs in which they hang upside down.

Some tetragnathid species can control the amount of reflective material by contracting their pits of guanine, rapidly turning drab when they are disturbed, becoming camouflaged when they fall to the forest floor. They share this trick with some *Thwaitesia* spp. in Theridiidae.

There are many tetragnathids found in Queensland wet forests, including *Mesida*, *Nanometa* and *Tylorida*. Usually small, *Mesida* in particular can be very attractive. Like *Leucauge* they have silvery reflective material, and like the Theridiid *Thwaitesia* spp. they have a rather tessellated pattern of blobs, not a continuous coating. There appear to be a great many of these smaller tetragnathids along Queensland's coast.

Generally, tetragnathids are not easy to identify to species. Long, slender *Tetragnatha* species in particular can be quite similar to each other and hard to separate in the field.

Tetragnathids would be an extremely rewarding family to study, especially for the citizen scientist, as they are easily found along waterways during the day. Excellent drawings of the species are available to identify specimens.

Body lengths range from 3 to 25 mm.



Opposite *Tetragnatha nitens* Shining Long-jawed Spider, mating pair, North Stradbroke Island QLD PHOTO: ED NIEUWENHUYIS. This is a worldwide species with two rows of eyes gently curved towards the rear. The chelicerae are longer than the cephalothorax. The female is bigger. The male has more teeth and spines on the chelicerae but both have large clasping spurs. The chelicerae are locked in place during mating. ♀ 19 mm ♂ 13 mm



Missulena bradleyi Bradley's Mouse Spider ♀ Brisbane QLD PHOTO: ROBERT WHYTE. ♀ 20 mm ♂ 14 mm

Mygalomorphae

Spiders in Mygalomorphae are known by a number of characteristics which separate them from araneomorphs. The fangs, unlike those in araneomorphs which point sideways towards each other, are more or less parallel, for striking downwards and pinning prey against the ground.

Mygalomorphs mostly need more or less constant access to moisture and generally live in burrows in the ground. More rarely, they burrow into moist drifts of decomposing leaf litter caught in or against trees, or into soft bark, rotting wood or borer holes.

Some of the larger mygalomorphs can kill large prey such as frogs, mice or lizards, but most prey items are small, night-wandering invertebrates like slaters and millipedes.

Mygalomorphs are sometimes called primitive spiders, as opposed to the araneomorphs or modern spiders, but this is confusing and not really accurate. Mygalomorphs are not primitive as such, just a separate lineage. Both groups descended from a common ancestor, though it is true the Mygalomorphae retained more of the traits of their ancestors than some araneomorphs. Paraxial (parallel aligned) chelicerae is an ancestral state limiting mygalomorphs to striking down against the substrate. The more flexible diaxial (inward-sideways pointing) fangs of araneomorphs can grab prey anywhere, freeing them from having to live on a solid substrate.

Mygalomorphs have four lungs (two pairs). Nearly all araneomorphs have only two lungs. The lungs of spiders are usually easy to see on the forward third of the underneath of the abdomen. They are pale oblong shapes.

Mygalomorphs are often large and females are nearly always long-lived. One *Anidiops* sp. for example, can live for up to 40 years. Unlike most araneomorphs which die after mating, female mygalomorphs continue moulting and growing. Males do not continue to moult, dying soon after mating.

Most mygalomorphs hunt from within or very near their burrows, sensing passing prey by vibrations. Their eyesight is poor.

Of all mygalomorphs, only Dipluridae (Curtain-web Spiders) build extensive webs to help catch their food. Many use silk trip lines which allow them to detect the presence of passing animals.

Some common names generally used for mygalomorphs, like 'Trapdoor Spiders', can be misleading. There are many species which do not have doors to their burrows.

Mouse Spiders, in the family Actinopodidae, seem to be related to the potentially deadly Funnelweb Spiders currently in Hexathelidae, as the venoms are similar, and the antivenom which has been used to successfully treat Australian Funnelweb Spider bites is also effective against the bites of Mouse Spiders. Bites of Mouse Spiders are less often reported but are nevertheless medically important.

Brush-footed Trapdoor Spiders in the family Barychelidae can cling to glass or plastic. Similar looking spiders in Idiopidae cannot.

In this section Australia's mygalomorph families are presented in alphabetical order.