The BowerBird Bugle

09 September 2016 Ken Walker (kwalker@museum.vic.gov.au) Museum Victoria. Edition 46.

Hi All – The things people see which other people question and then feel compelled to follow down a dark worm-hole!

That's a great way to start this month's Bugle but it's what happened to me when I saw a record posted on 28 August 2016. Emerald is in central Queensland and from what Laurence Sanders sees and posts it must to be the centre for Australia's "Never Seen Before – That can't be true!" But it is.

Many will remember Laurence's amazing posts of a leaf-cutter bee and wolf spider sharing the same underground burrow.

Well, he has done it again. Something only ever seen once before in the world.

Laurence's post had the below image as the main image – the record title was "Unid orb weaver."

Other photos included close up of a spider inside the shelter and then the spider itself out of the shelter. Of course, all of this action "just" happened to be almost outside Laurence's back door.

So – the situation was simply a spider living in a shelter which was placed in the spider's web. Leaf-curling spiders do this all the time. They can roll a dead leaf or claim a discarded snail shell and I have even seen an image of a leaf-curling spider using an old rolled bus ticket – no luck today with the hard, plastic Myki cards we in Melbourne or Opal cards in Sydney and elsewhere. So, what's the big discovery?

The “problem” with Laurence’s photos were that the shelter had been constructed using small pebbles. Now – the rule of thumb is that spiders do not construct things. They reuse or build silken structures but they do not construct objects that they place and use in their web. At least – that’s what I had always believed ... the text books told me so! Until now ...

So, I contacted Laurence and asked for a few more images which only convinced me more that the spiders were constructing a pebble case-shelter. Notice in this image how the pebble case is suspended above the orb web and the top of the case is also suspended to something above the web.

The ever resourceful Laurence then documented the length of the case by placing a metal ruler beside the pebble shelter and taking a photo – see next page. Then in another of Laurence's photos he showed how the pebble shelter was suspended via two threads – again shown on the next page.

(By the way – Laurence provided these photos just to pull me further and further down a deep and dark worm-hole ...)


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And finally, as if to rub salt into the old textbook axiom that spiders do not build shelters was this magnificent image of a pebble encrusted shelter. You can see strands of silk holding the pebbles together with the spider presumably inside the shelter – probably tearing up pages of many Spider Behaviour Textbooks with a maniacal laughter !

So – I thought this cannot be a new phenomenon; I must not be uptodate with my spider behaviour reading so I forwarded the images to one of Australia's leading spider expert – the one who last year wrote the new Australian Spiders textbook. The first reply I got sounded reasonable and gave me a reason that it really wasn't the spider whot built the pebble shelter. Volker replied: "That's a curious one… I need to check the spider, but it was unlikely the builder of the case (or let's better say I haven't seen that before). Could that be an insect casing of some sort that the spider has picked up?" Yes – the spider had picked up an insect case just like leaf-curling spiders pick up old snail shells or bus tickets.

So I pitched the idea at Laurence that what is saw was a "once off" but he replied that there were indeed many similar pebble cases in his area so Laurence's reply sort of shot down in flames the theory of one of Australia's leading arachnologists.

Supplied with Laurence's new information about multiple occurrences of this new phenomenon, Volker did what all good scientists do when cornered ... make it someone else's problem. Volker had identified the spider image as belonging to the leaf-curling group called the phonognathines. As luck would have it, there is currently a group in Washington, USA who are revising the Australian phonognathines and so Volker forwarded my emails and Laurence's images to this USA group.

Amazingly, the research group replied overnight with this message: "This is pretty bizarre. I talked to Gustavo about it, and the only thing that comes to mind that builds something similar is *Spilasma*, but that is a New World genus. They construct retreat from prey detritus and substrate, but apparently the inside is a silk tube. Getting some sequences

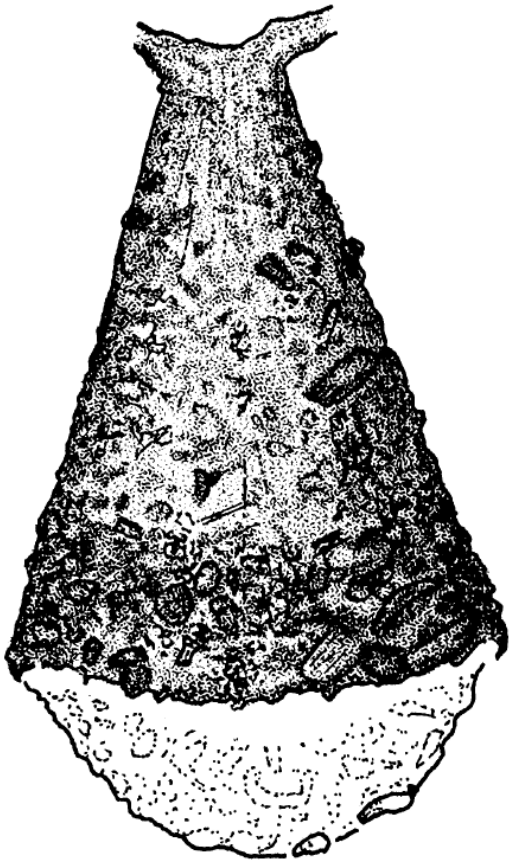
from this specimen or putting it in a matrix should be interesting for sure. Sorry I can't be more help.”

You can see that I was being dragged kicking and screaming down a never-ending black worm-hole.

Fortunately, the USA group attached a copy of the 1974 paper about *Spilasma*. This paper was entitled:

THE UNUSUAL WEB OF *SPILASMA TUBULOFACIENS*, WITH TAXONOMIC NOTES ON THE SPECIES (ARANEAE: ARANEIDAE)*

This single species of spider is found only in French Guiana, South America and is the only spider in the world known to use substrate to build a shelter. The paper contained a diagram of the constructed shelter which looks suspiciously like what Laurence photographed:



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I decided to take up the Washington's research group offer to run a DNA analysis on Laurence's spider. I posted off to Laurence two tubes of 80% alcohol for him to preserve a few spiders and their cases. When Laurence returns the spiders to me I will post them onto the Washington research group and wait for the DNA analysis. Since this group is researching leaf-curling spiders world-wide, the DNA sequence of the Australian spider will be able to be compared to the world fauna of leaf curling spiders and either its perfect match or closest relative will be known.

Having seen all of the additional images provided by Laurence, the Washington group sent me this message: "Having seen the web from a few angles, it is a dead ringer for *Spilasma*."

It's all very interesting and yet another example of citizen science sharing with science and then science taking the data and providing an analysis. That all just makes for a more inclusive science view of the world.

Now I have two theories are the town of Emerald where Laurence lives and finds extraordinary animal behaviour.

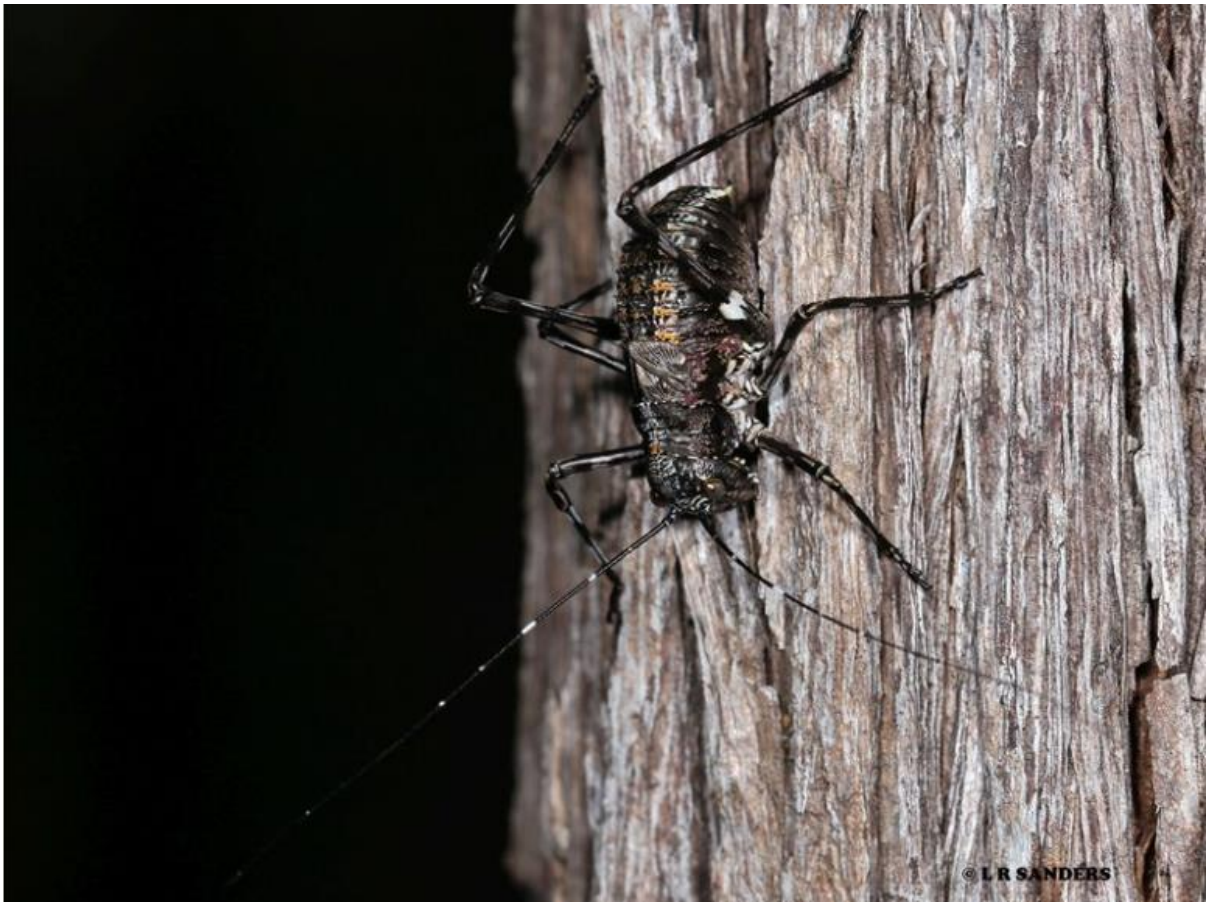
1. One night, a nuclear bomb went off behind Laurence's backyard and Laurence remained sleep all night. That would explain the strange behaviours he finds.
2. My second theory is that Laurence has a keen eye for observation which he then records and shares. Laurence is "just" a good citizen scientist.

I still prefer theory No. 1 with a bit of theory No. 2 (:->!!!

I will keep you all updated as the DNA analysis becomes available and we learn more about this amazing spider. All of Australia's professional arachnologists are watching this story as well with great interest.

Another amazing find in the nuclear fallout zone!!

Earlier this month, Laurence posted an image of a nymph of the Mountain Katydid, *Acripeza reticulata*. Now nuclear bomb or no bomb, there is no way that the Mountain Katydid can occur in Emerald, Queensland – it just couldn't .. could it?. So, I forwarded Laurence's image to Australia's katydid expert, Dr David Rentz, who wrote back to me saying: "Yep – that's it". I was stunned – makes my Emerald is a nuclear fallout zone theory even more certain!



Acripeza reticulata nymph Location: Emerald, Qld Photo by Laurence Sanders

The Mountain Katydid is something I would find in Victoria when I go up into the mountains and find a wet, soggy patch of ground. Laurence's image of a nymph does not show off the majesty of the adult which when threatened turns around, raises its stubby wings and shows off bright red and blue

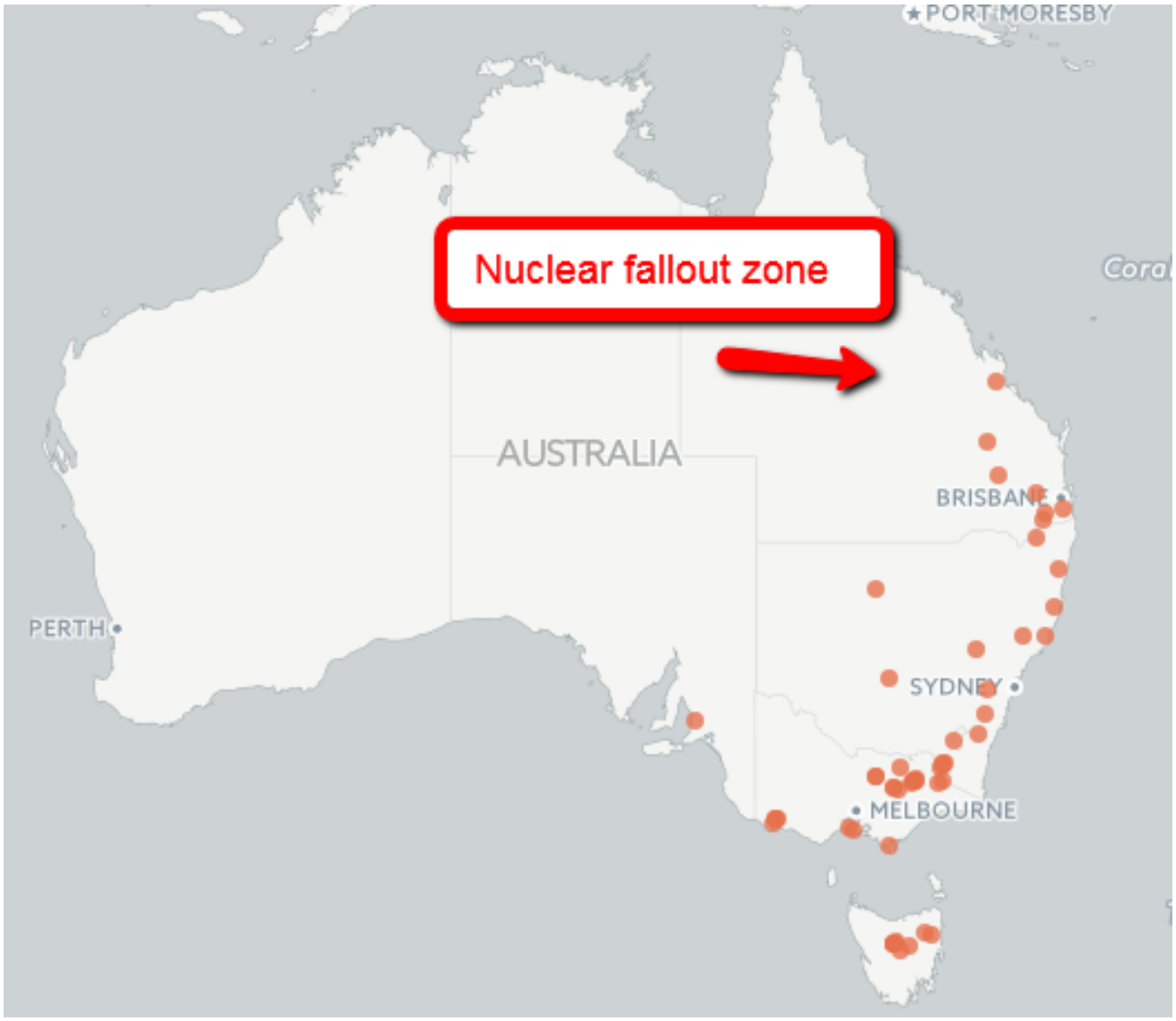
abdominal markings. The below image (I might note the photo was taken at Mt Buller, Victoria which is a far more respectable place to find this katydid than Emerald, Qld) clearly showing the warning colourations of this wonderful katydid.

Acripeza reticulata Location: Mt Buller, Vic Photo by Martin Lagerway

So I jumped onto ALA to see how far north the Mountain katydid had been recorded and I was not surprised to see that Laurence's record was the most northern record and also most inland for Queensland. I contacted Laurence who provided me with more insights into his sightings of the Katydid: "This is the first one I have seen since I used to find these crickets back in the early eighties at the Queensland Railway 296 km peg on the Central line which runs beside the Capricorn highway the nearest place would be Glendarriwill railway siding - this means the location is 296 km west from Rockhampton."

Again – I'm stunned. This is way outside what would be considered "prime" habitat for *Acripeza reticulata.* Don't these katydids know these things and that they have to stop confusing entomologists who think they know something about the habitat requirements of different species? Bah humbug!

Great find Laurence – actually, Laurence fessed up and told me that his wife ACTUALLY found this specimen but that he had photographed and identified it so it was really two thirds his find anyway ..... errrr



Old! ALA distribution map for *Acripeza reticulata*

Bee Identification – Part 4.

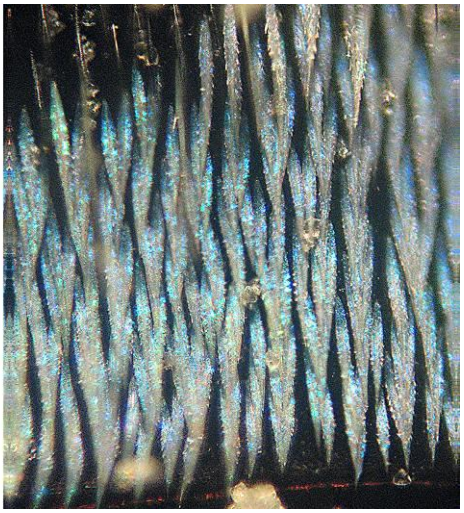
Amegilla by Michael Batley (Australian Museum)

{They are the easiest to identify, they are the hardest to identify.}

Apologies to Charles Dickens for distorting his opening words to *A Tale of Two Cities.* But most of us can recognise a Blue-banded Bee or a Teddybear Bee when we see one. Large to medium sized bees, some smaller and some larger than a European Honeybee, rather rotund in appearance which often move between flowers dipping into each without landing. Naming the species is another matter altogether.

When Remko Leijs and Katja Hogendoorn began looking at the blue-banded *Amegilla* it was unclear whether the number of species in Australia was over 40, as proposed by Tarlton Rayment or possibly as few as two or three. Now, after examining over 5,000 specimens we believe there are 14 Australian species, plus the “teddybear” species which require more work.

One of things that make the species difficult to identify is the nature of the blue bands. The colour is due to flattened setae



(hairs) that contain sets of parallel tubes which produce interference colours like those seen in oils slicks on wet roads.

If the scale-like hairs are damaged by wear, they produce less colour and fade to almost white. Even when not damaged, the hairs may look different under different lighting. This is the same specimen firstly lit from both sides and secondly using diffuse light.

oblique light

diffuse light

A further complication is that all the hairs, not only the ones in the bands, may contain various amounts of orange pigment. Bees of the same species, foraging side by side, can differ in the amount of orange. While there are genuine colour differences between species, there is also variation within species, which makes identification more difficult.

The Australian members of the genus can be divided into three subgenera, *A. (Asaropoda), A. (Notomegilla)* and *A. (Zonamegilla).* The first contains the “teddybear” species, the second consists of two species with some blue or green colour on the legs and the third contains 12 species without metallic colour on the legs, all but two of them banded.

Asaropoda

Asaropoda species are a bit larger and more robust than those in the other subgenera and are readily distinguished by features on the underside of the abdomen, but to the naked eye the most obvious difference is that the abdomen does not have regular, narrow hair bands. But - and there is always a but - there is one species in each of the other two subgenera that



don’t have bands either. The species range in colour from orange, through beige, grey, dark brown to black and white.

A. bombiformis *A. dentiventris* *A. rhodoscymna*

The best-known species, *A. bombiformis*, is common in Sydney and Brisbane. It does have a band of black hair near the front of the metasoma, but is not banded on the other segments. North of the NSW/Queensland border a second orange species, *A. rhodoscymna*, is seen quite often. This species has no black hair on the metasoma and a distinctive set of grey hair patches on the thorax. Both species feature in an interesting story that illustrates what happens in taxonomic studies.

In 1854 Frederick Smith described a specimen in the British Museum and gave it the name *Saropoda bombiformis.* As a footnote, he said that he had another specimen that was smaller and had black, not orange, hair on the hind foot. He thought it was just a variety of *S. bombiformis* and called it variety α. In 1904, the famous American melittologist Theodore Cockerell had looked at the same specimen and concluded that it was a distinct species that he named *Saropoda alpha*. When

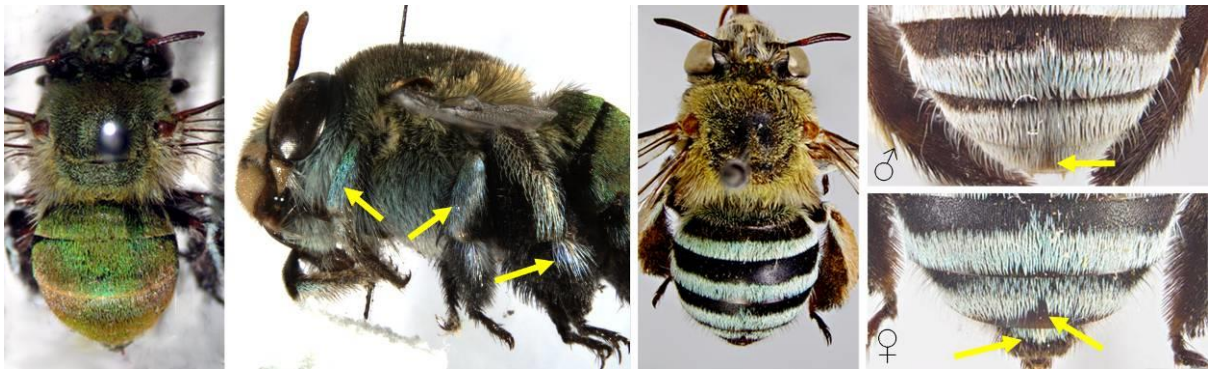
A. (Zonamegilla) aplha female

we began looking at the blue-banded bees, the British Museum were kind enough to send us the holotype specimen for examination and we were very surprised to find that it was very clearly a member of the subgenus *Zonamegilla*, meaning that it should be called *Amegilla (Zonamegilla) alpha.*

This little story, however, is an example of how important it is to examine the actual type specimens. Tarlton Rayment published a revision of the subgenus *Asaropoda* in 1951, (except that he treated it as a genus). In those days it would have been very difficult to borrow the type specimen or travel to London to see it, so he accepted Cockerell's placement of the species *alpha* even though he would probably have been able, by 1951, to recognise where it should be placed. Rayment reports his specimens as coming from south eastern Queensland, but the only reliable records of *A. alpha* are from the far north west of the continent. It is possible that what he was looking at were male *A. rhodoscymna*, which also have dark hair on the hind foot.

Notomegilla

The subgenus *Notomegilla* consists of two species: *A. chlorocyanea* which is found all over Australia and *A. aeruginosa* which occurs only north of the summer/winter rains line. The former species can be identified from all other banded species by the notch in the last band of the male and the notch and central patch on the female. *A. aeruginosa* is unmistakable from its overall green or bronze colour and the greenish metallic colour on the legs.



Zonamegilla

This is the subgenus with all the banded species, apart from the two exceptions – *A. alpha* which is only banded if you look hard and *A. chlorocyanea* which belongs elsewhere. Of the twelve species, eight are found mostly in the northern half of the country which is unsurprising as there are many similar species in Asia and other parts of the World. It is probable that Australian species originated with immigrations from the north.

The features that may be used to distinguish between species are themselves somewhat variable and have to be used carefully particularly with older individuals. Some indication of what may be deduced from external characteristics can be illustrated by looking at the four species that are common in Brisbane and further south.

The most brightly coloured is *A. cingulata.* It is found right down the eastern coast as far south as Taree. Freshly emerged specimens have electric blue bands and bright orange hair on the thorax. They can be distinguished from the other three (*A. asserta, A. murrayensis* and *A. pulchra*) by the orange hair on the hind tibia of both sexes. The other three species have white hair on the hind tibia and females also have a long black streak down the middle of the white, while *A. cingulata* has no such streak. Oh, and no other species has a female without at least a small amount of pale hair on the fifth metasomal tergum. Easy enough?

A. cingulata

Separating the other three species using external appearance alone is not as simple. They differ in the colour and shapes of the face marks and in details of the hair pattern on the body, but both can be affected by wear and other things.

John Tann's beautiful picture of two males (https://www.flickr.com) shows the difference between *A. asserta* on the left and *A. pulchra* on the right. The black on the clypeus is always wider in *A. pulchra* than in *A. asserta* but there is some variation within each species.

Roosting males by John Tann.
A. asserta (left) and *A. pulchra* (right)

A. asserta female

The face marks are always pale in *A. pulchra*, but museum specimens are frequently cream rather than white. It is possible that the colour changes after death, but more careful observation is needed. And the hair on the thorax of *A. pulchra* is not always as grey as in this picture.

That makes it harder to identify females where the black areas on the face are much wider and do not show variation between these species.

Instead we have to rely on small differences in hair pattern on the tail that the females do their best to rub off when building their nest. Ignore the colour differences, only the pattern is important.

A. asserta *A. murrayensis* *A. pulchra* females

And we are still not absolutely sure about what happens in regions where *A. murrayensis* and *A. pulchra* occur together.

The former species seems to occur throughout Australia while *A. pulchra* seems to be concentrated around Brisbane and Sydney. It would be dull if there was nothing more to discover.

If the referees are kind, publication of all our findings including four new names for species not previously described should appear in the next six months.

But I could not finish without telling you about the hunt for *Amegilla fabriciana*. In 1947 Tarlton Rayment created the name for what he believed was “Dours’s Bee”, a rare species like *A. cingulata* but much larger, described under a different name by M. Dours in 1879. We found what we believe to be Rayment’s specimen, which proved to be *A. cingulata.* The specimen was incomplete but did not seem to be quite as large as Rayment supposed. Perhaps its abdomen was distended when he measured it. The Muséum national d'histoire naturelle in Paris could find no trace of the Dours specimen.

What has changed dramatically in recent years is the availability of old texts, which can now be obtained electronically from sources such as Biodiversity Heritage Library. No longer do scholars have to travel to obscure libraries and take notes in pencil. Examination of the 1879 publication was quite revealing. Although it has Dours's name on the front page, it was actually prepared by Sichel after the death of his colleague, but he states that he had discussed most of the contents with Dours. Nevertheless, the section on *Amegilla* is preceded by a paragraph indicating that section contains Sichel's own ideas. So Rayment was really looking for "Sichel's Bee".

The bee in question was described as being from New Holland and 18 mm long, which is what attracted Rayment's attention. However, the very next description was for another blue-banded species from New Holland, also 18 mm long with blue hair on the legs. As you now know, there is only one Australian species with blue legs and that is *A. chlorocyanea* which is only 13 mm long. There can be little doubt that the printer had difficulty with Sichel's handwriting and that the Dours/Sichel bee was no more than a normally sized example of *A. cingulata.*

Thanks very much Michael for that fascinating account of Australian *Amegilla*. We all keenly await Michael, Remko and Katja's scientific paper revising the Australian *Amegilla*.

Michael is also Australia's experts on those wonderfully large and noisy *Trichocolletes* bees so I will see if I can get him to contribute another Bugle bee guide to the *Trichocolletes* bees.

Jenny’s Bubbling Bee

Jenny Thynne posted a wonderful series of images showing the hylaeine bee “bubbling” – a technique used by bees, wasps and flies to reduce the water content of collected nectar. They simply bring the nectar back up from the stomach and exude the nectar from the mouthparts. The bubble is protected and managed between the two mandibles. It takes bees about 30 minutes to “bubble” nectar down to 30% water content which turns the nectar into a sugar-rich fluid which the bees the convert to energy to power the flight muscles.

Amphylaeus Agogenohylaeus obscuriceps Location: Sunnybank, Qld Photos by Jenny Thynne

Spring is in the air and thoughts turn to romance

A pair of lace mating monitors Location: Near Toowoomba, Qld. Photos by Glenda Walter who commented: “There was no hissing and biting as would have happened if they'd been fighting.”

A pair of mating blue tongue lizards Location: Sunnybank, Qld. Photos by Jenny Thynne

A pair of mating thyniid wasps Location: Albury, NSW. Photos by Karen Retra

A pair of mating thyniid wasps Location: Liparoo. Photos by Reiner Richter

Mating ladybeetles -*Coelophora inaequalis* Location: Emerald, Qld. Photo Laurence Sanders

The fungal season is beginning to wane ..... but there are still some cracker images to be seen.

Morchella elata Location: Great Western, Vic Photo by Jenny Holmes

Trametes versicolor Location: Olinda, Vic Photo by Reiner Richter

Cladia aggregata Location: East Warburton VIC Photo by Reiner Richter

Geastrum triplex Location: Olinda, Vic Photo by Reiner Richter

Mucilago crustacea Location: Great Western, Vic 3 Photos by Jenny Holmes

Dr Tom May from the National Herbarium of Victoria in Melbourne identified this series of three images as “A slime mould. It is the plasmodial stage (an amoeboid, slimy mass). This later turns powdery from production of spores. *Mucilago crustacea* often occurs on grass stems.”

Tom also identified the next 3 photos. The three photos were taken over a 5 day period with the fungus changing from a bright orange colour to dark purple colour and finally to a brown and black colour over time. It just shows the variation within the one species and the difficulty in identification when presented with such variation of colours. Still for Tom with his vast experiences it ‘twas but a trifle (:->!

Three photos of same fungus. Top image Day 1, the second image Day 3 and the third image Day 5. All are age variations of *Tubifera ferruginosa* Location: Chiltern Photos by Eileen Collins

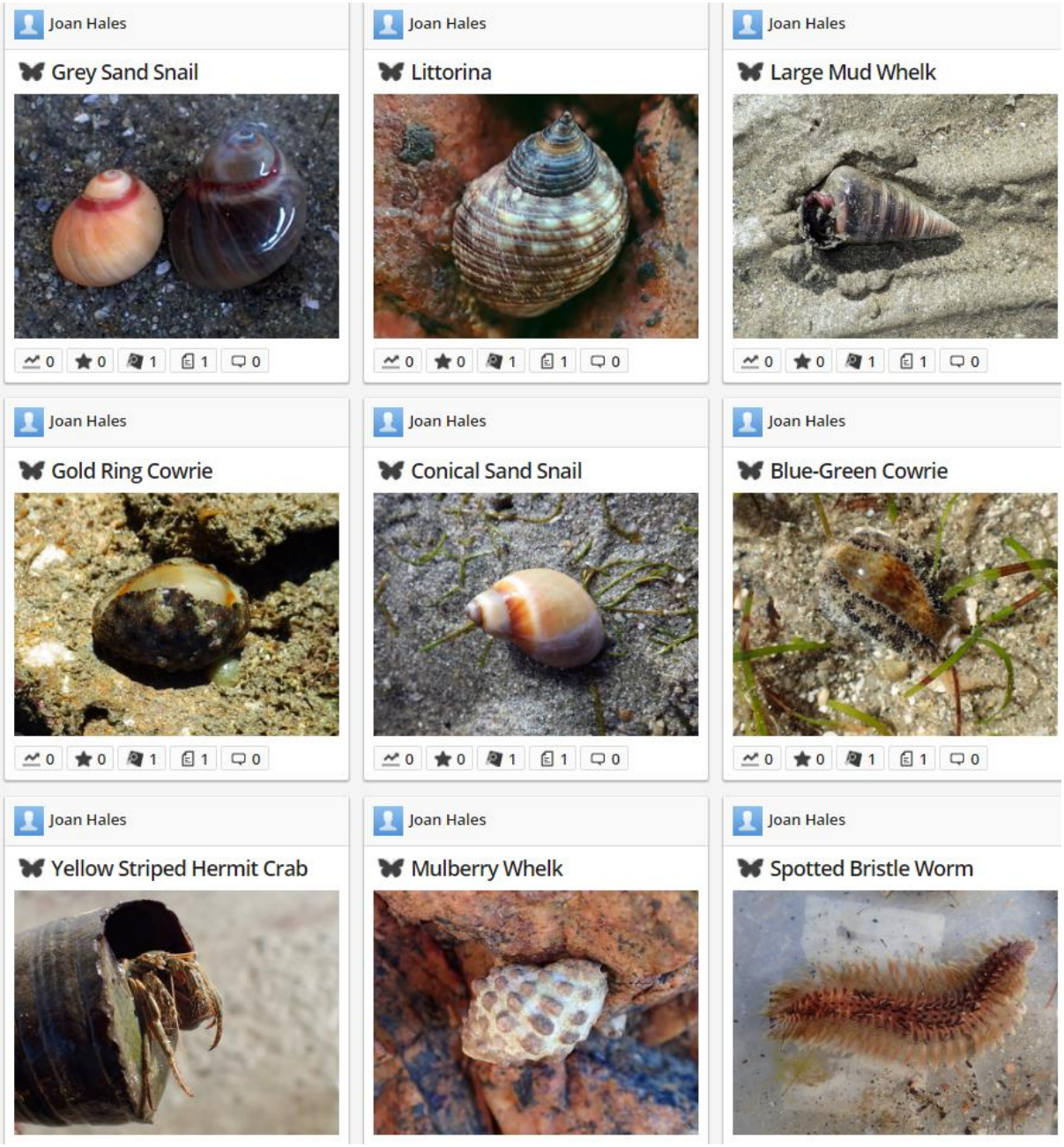
Another of Eileen's photos showing fruiting bodies of a liverworst. Chiltern

An attractive red slime-mould. Arcyria sp. Location: Monbulk, Vic Photo by Reiner Richter

Possibly a *Trichia* sp slime-mould. Location: Balook VIC Photo by Peter Bryant

New Marine records – worth a look !

This week, Joan Hales has uploaded a wonderful series of marine life records all from the north Queensland town of Bowen. If you have a spare minute or three, then have a look and you will be fascinated.



Growling Grass Frog new record

The Growling Grass Frog is one of the largest frog species in Australia. The females (60-104 mm) grow much larger than the males (55-65 mm). Their colour is variable but is usually olive to bright emerald green with irregular bronze, gold brown or black spotting. Their backs are warty and usually have a pale green stripe down the middle. Growling Grass Frogs are found in Victoria, Tasmania, New South Wales, ACT and South Australia. In Victoria they have disappeared from much of their former range, but isolated populations persist in the greater Melbourne area, south-west, central and eastern Victoria.

So it was with pleasure that I spotted this recent (5th September 2016) record from Melbourne. Nice to see this frog.

Litoria raniformis Location: Essendon VIC Photo by Lucy Gentile

Cricket for lunch anyone?

Matt Campbell posted these wonderful images of a badge huntsman spider chowing down on a field cricket.

Neosparassus diana feeding on *Teleogryllus commodus*. Location: Churchill, Vic Photos by Matt Campbell

Speaking of lunch – the art of parasitism

There is a whole language around the practice of parasitism.

A parasite is an organism which lives in or on another organism (its host) and benefits by deriving nutrients at the other's expense. It usually does not kill the host.

A parasitoid is an insect whose larva live as a parasite which eventually kill their hosts, e.g. an ichneumon wasp.

An ectoparasite lives on the outside of its host (eg. A flea)

An endoparasite lives on the inside of its host (eg. a tapeworm)

Most of us will have seen examples of wasps dragging paralysed spiders as hosts for their larvae to feed on. The feeding wasp larva is an ectoparasitoid.

Cryptocheilus sp. Location: Tynong North VIC Photo by Tamara Leitch

Did you know there is a pompilid wasp that specialises in collecting only red-back spiders to stock its larder? *Agenioideus nigricornis* was described by Fabricius in 1775 – think about the process of catching the wasp in Australia and getting it back to Fabricius in London to be described in 1775!!

Agenioideus nigricornis Location: Morgan, SA Photo by Mark Newton

Another wasp group digs a hole in the ground and provisions it with paralysed flies rather than spiders. These are called Sand wasps which are recognisable by their yellow/white colours – in particular their banded abdomen. These wasps specialise in catching flies on the wing which they then sting and paralyse and stock their underground larval larder.

Bembix sp. Location: Garfield North VIC Photo by Tamara Leitch

Of course, there are the flower wasps – probably one of the most sexually dimorphic of all insects with the male winged and the female wingless. The female sits as high as she get reach and sticks her abdomen up in the air while releasing a sex attractant pheromone to attract a male. The male mates with the female and while mating he flies her up to flowers where she eats pollen as a protein source which she uses to mature her eggs prior to laying them. Once she has had her fill of pollen, the male deposits her back on the ground and she then burrows underground in search of beetle larva which she then lays an egg into making her larvae endoparasitoids. You can understand what a nuisance a pair of wings would be when burrowing underground so through evolution, the wings have been lost.

Tiphiidae male and female Location: Narre Warren East VIC Photo Reiner Richter

But – how many of you have seen what an Ichneumonidae wasp does with an orb weaving spider? Laurence Sanders captured an act of classic wasp ectoparasitoidism (that's a mouthful to say!) This wasp does not sting the spider but rather just lays an egg usually on the top of the abdomen of the spider. The wasp larva always remains on the outside of the spider and literally sucks its haemolymph (that's invertebrate blood). The spider continues to hunt prey and maintain its web. Eventually, the wasp larva kills the spider and pupates. There are a few ichneumonid wasp larva that make the parasitised spider do strange things. One ichneumonid species in Europe makes the spider build highly visible structures in its web which we presume is to warm birds and bats not to fly through the web which would kill the spider and wasp. Enjoy these images.

An ichneumonidae ectoparasitoid wasp larva feeding on an orb weaving spider. Location: Emerald, Qld Photos by Laurence Sanders

This image confused the experts.

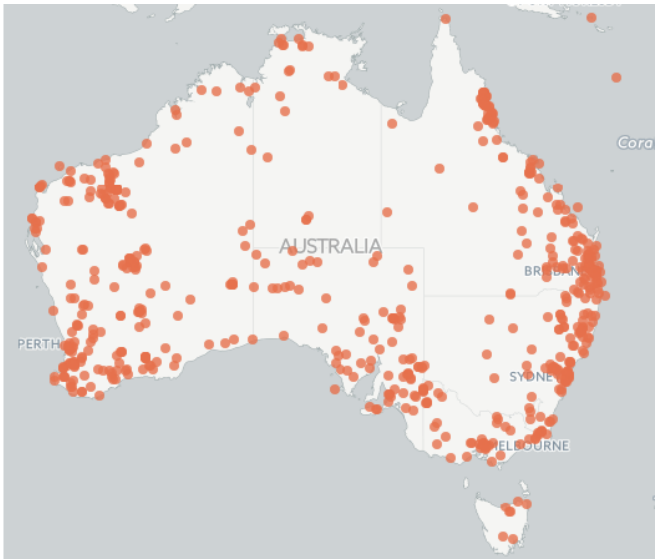
Glenda Walter posted these two saucer-shaped, silken egg capsules and posed the question: Insect or Spider? Glenda recorded each saucer at about 7mm across in diameter. You can see the individual eggs. Personally, I did not have a clue!

I forwarded Glenda's image to many of my "knowledgeable" colleagues and most came up blank. Finally, one person recognised it and placed it to the genus *Rebilus* in the family Trochanteriidae.

Rebilus sp. Location: Redwood Park, QLD Photo by Glenda Walter

Out of the now over 60,000 BowerBird records, we have only six Trochanteriidae records. They are a dorsoventrally flattened spider designed perfectly to live under bark or a rock which is where the below spider was found. The ALA map below shows this family of spiders occurs across Australia.

Rebilus lugubris Location: Vinegar Hill QLD Photo by Gordon Claridge



And finally, what's a Bugle without Mark Berkery's

Nature Place

Walking the edge of the water treatment plant, that borders the local wilds, I saw a strange – even to these experienced eyes – thing.

I couldn't make it out at first, it looked so oddly shaped, but after a few shots – so I could see closer – it became apparent it was a form of Shield-bug, in the midst of a rarely observed transition.

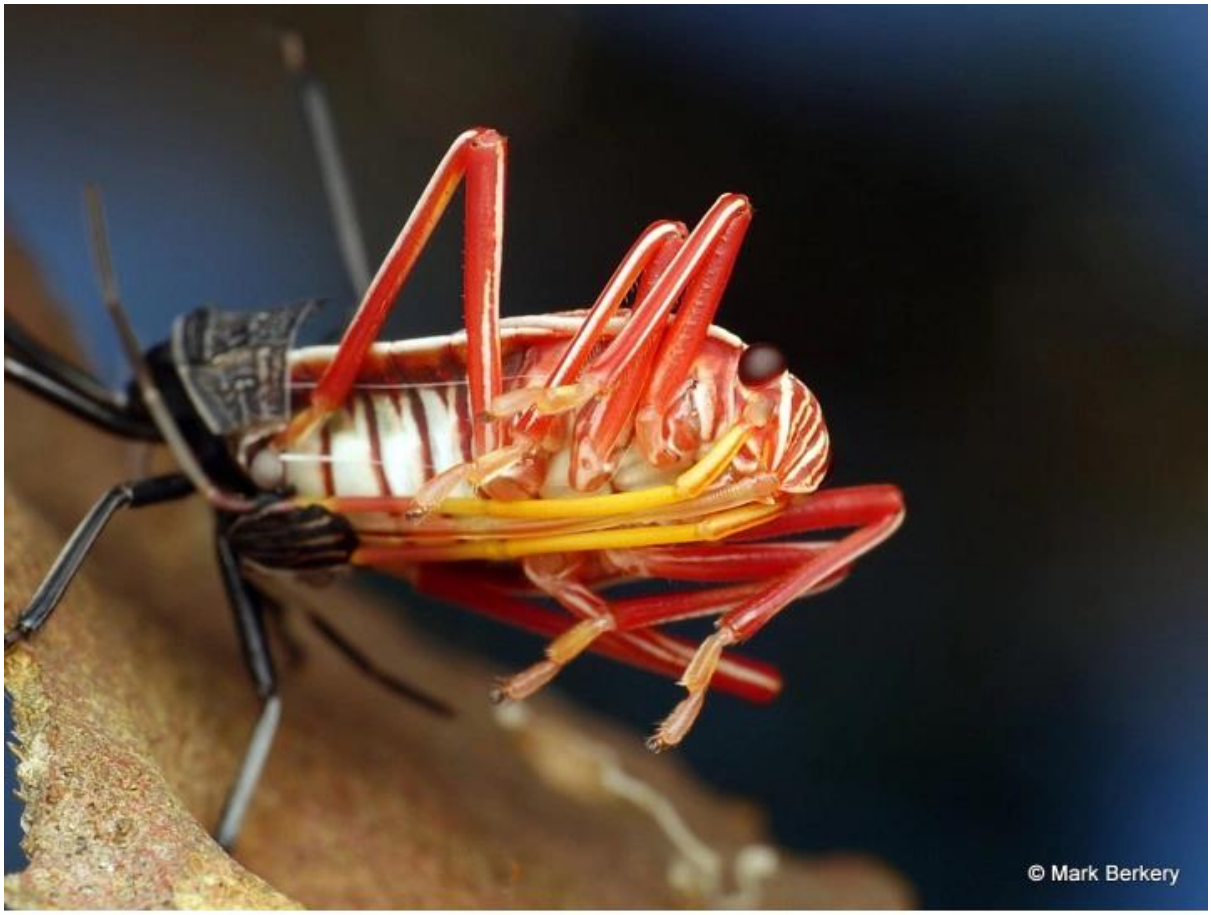
They outgrow their shell, exoskeleton actually, and periodically have to moult – usually there is a split along the back through which the new form pushes out. A very dangerous time for them, being immobile for the duration and soft, vulnerable – to some degree held back by the tight fit of the old skin.

Springtime is here again and small creatures are emerging everywhere. At first in smaller size, visible by their increasing numbers. With spiders hatching in the hundreds, a feasting of expendable form, everything is living off something else.

A cascade of life and death begins, by which another emergence takes place, those relative few that live to maturity, who make up the cast of earthy characters.

… and I'll probably get a few pictures of this burgeoning operatic show.

Click on pictures for a better view.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Then it quickly found it's legs and ran up the tree towards the light, away from the shadow of my lens, born again again.

Now – I have a lot of fun writing the Bugle each month and I would like to share that fun. If anyone has a BowerBird related story they would like to tell, please send me your story and I will include it in the next Bugle.

As always ….. from BowerBird .. that's your lot for this week.

Haveagoodweekend all …. Happy photographing …

Cheers – Ken

(If you wish to leave this email list, please contact me directly at kwalker@museum.vic.gov.au – else share with your friends)