Issue 52 - June 2020

Wombat Forestcare Newsletter

It is a fungal paradise in the Wombat forest this year. Autumn rains have contributed to a spectacular emergence of fungi in so many shapes, sizes and colours. Enjoy your winter walks in the Wombat.
Gayle Osborne (editor) and **Angela Halpin** (design)

Autumn brings a bumper fungus season

Words & Images by Alison Pouliot

What do the lighthouse keeper at Maatsuyker Island, a ranger in Kakadu National Park, a toxicologist from the Poisons Information Centre and a permaculturalist in Paris have in common? They all discovered the Wombat Forest's amazing fungi recently during an online workshop.

Although forays in the Wombat have not been possible this autumn due to the restrictions, the possibility to meet online has brought the Wombat into the close focus of far flung *Homo sapiens*. The recent widespread rains have produced an astonishing diversity and abundance of fungi. People collected bizarre and beautiful fungi in every imaginable form for the online workshops. However, the most commonly collected fungus was one of the less flamboyant – yet apparently never forgotten – by those who mistook it for an edible field mushroom.

Appearing in great rings or arcs on nature-strips in Daylesford, Creswick, Trentham and beyond, *Agaricus xanthodermus* (yellow stainer mushroom) appears to be ever more prevalent. Although often confused with edible field mushrooms, it is not difficult to recognise if you know its characteristic diagnostic features.

Getting to know the yellow stainer

When identifying any fungus, begin by observing where it grows. The yellow stainer typically grows in ruderal environments, that is, disturbed environments. You're more likely to find it along road verges, lawns, track edges, gardens, golf courses and nature strips than in the Wombat itself. That said, that doesn't mean that you won't find it there. It grows in the ground, in soil, often in grassy or mulched areas and commonly in large clustered rings or troops, but sometimes solitarily. It mostly appears in autumn although it can pop up at any time of the year after rain.

Agaricus xanthodermus (yellow stainer mushroom).

Train your nose

Identifying fungi is not just about looking at features but using multiple senses. The particular odour of this fungus is a dead giveaway. Recognising odours is also about knowing what to expect. Edible *Agaricus* species such as *A. campestris*, *A. arvensis* and *A. bitorquis* usually smell earthy, mushroomy or sometimes like bitter almond. *Agaricus xanthodermus* smells phenolic – often described as being 'medicinal', carbolic or like disinfectant or Band-Aids and with a sharp 'chemical edge'. Learning to smell fungi usually takes practice to increase the sensitivity of your sense of smell and the ability to detect subtle odours.

continued next page ...

Finding your way around a mushroom

Take a systematic approach to examining the shape and form (morphology). The yellow stainer pileus (cap) can be up to 20 cm in diameter. When immature, it is typically marshmallow-shaped or squarish in profile. If you look at the margin (edge) of the pileus, it is slightly incurved (curled under) when young. As it starts to mature, the pileus changes shape and becomes broadly convex, then broadly umbonate (with a raised centre) to plane (flat). Its colour varies from white or off-white, then becomes greyish buff or brown, often with brown tints toward centre of the pileus. Use your fingers to feel the texture of the pileus, which can be smooth or with scattered fibrils (fibres) and is often scaly or cracked with age.

Now look at the underside. The lamellae (gills) are close together or crowded, white at first, then gradually pinkish, darkening with age to chocolate brown, then finally blackish brown at maturity. If you look closely at the point where they come toward the stipe (stem), you'll notice that there's a tiny space between the lamellae and the stipe. That is, they are free of the stipe.

Then examine the stipe. It is typically 5–15 cm in length and about 1–2 cm in diameter, cylindrical and more or less equal in width above a slightly enlarged base. If you run your fingers down it, you'll notice its smooth texture. Also note the white, flaring, membranous annulus (ring) that is double-layered. This often collapses with age or with exposure to wind or rain.

The 'flesh' on the inside of the mushroom (you can see this if you break it apart) is typically quite thick, becoming thinner towards the pileus margin. It is white throughout but turns vibrant chrome yellow almost instantaneously when scratched or bruised. You'll notice this especially in the base of stipe if you cut it longitudinally and scratch the inside. However, if the specimens have been exposed to wind or heat and are dry, the yellow staining is not always apparent.

Even with an accurate description, people still confuse this mushroom for edible field mushrooms. This might be because they take a cursory glance rather than systematically working through the pertinent diagnostic features, but it could also be because the species is highly variable in appearance and does not have a lot of differentiating features. Most of the variation in colour, form and texture results from exposure to different environmental conditions such as wind, rain and sun. When learning a new species, go out and observe just one species so you become familiar with the extent of variation that can occur at different developmental stages, and with exposure to differing environmental conditions.

So, what happens if you ingest a yellow stainer?

Yellow stainers contain a compound called phenol that causes gastrointestinal distress. The mushroom will try and expel itself from your body via whichever orifice it can escape from and you're not likely to enjoy the process. Symptoms including nausea, stomach cramps, vomiting and diarrhoea.

Occasionally there are anecdotal reports of people being able to eat this species without becoming ill, but it is not understood why. It could be that in fact they had eaten another non-toxic species, or perhaps the quantity they ate was small enough not to have elicited symptoms, or the quantity of phenol could vary between sporophores. But there are smarter things with which to gamble!

This yellow stainer causes the majority of poisonings through the ingestion of toxic mushrooms in Victoria. Most mushroom poisonings result in gastrointestinal distress. Fatalities from eating poisonous mushrooms are extremely rare in Australia and often get dramatised by the media. While there are probably relatively few highly toxic fungi, those such as the yellow stainer are common and abundant. They also typically grow in areas of high human population density such as urban areas. The yellow stainer appears to be tolerant to 'highly managed' environments, that is, those that are irrigated or treated with synthetic fertilisers or other chemicals.

Remember that there are no simple rules for distinguishing edible mushrooms from poisonous mushrooms, despite the many idioms or sayings you might have heard. To minimise the chance of poisoning, always assume a mushroom is toxic, unless an authoritative source definitively states it is edible. Every forager should first learn the major toxic species, especially those that are potentially fatal. If you do not have the skills to accurately identify fungi for consumption, enjoy a lovely walk in the forest but buy your mushrooms at the supermarket on the way home instead.

All fungi are 'good'

While some fungi are toxic, it doesn't mean they are 'bad'. The simplistic dichotomy of 'good' and 'bad' mushrooms undermines the ecological significance of all fungi. All fungi are 'good' in that they provide vital functions such as recycling organic matter, providing architecture in soils and governing nutrient and energy flows. Some are just not good for *Homo sapiens* to eat. Whatever you do, do not remove them from your garden or destroy them, as they are hard at work releasing nutrients so that your garden can flourish.

By the way, if you are a forager or someone who likes picking fungi for some other reason, remember only to do so on private land. It is illegal to pick fungi in the Wombat or on any public land without a written permit.

Enjoy this fabulous autumn and the exceptional display of fungi on show in the Wombat Forest. ■

White-eared Honeyeaters

By Trevor Speirs

Honeyeaters make up the largest bird family in Australia, and this is replicated here in the Wombat Forest with 18 species being recorded at the last count. It is generally thought that this has a lot to do with our dominant plant families, Myrtaceae and Proteaceae. When you consider that some eucalypts, in a good season, can produce hundreds and thousands of flowers which provide readily accessible nectar, it is easy to see how the honeyeaters have prospered.

Honeyeaters, however, aren't solely nectar eaters. The diet of the Painted Honeyeater *Grantiella picta*, classified as vulnerable under the *Victorian Flora and Fauna Guarantee Act 1988*, and a rare visitor to the Wombat, consists mainly of the fruit of the parasitic mistletoe plant. The North West part of the Wombat is a reliable spot for mistletoe. I'm only guessing, but this could possibly be because of its more open and drier habitat and eucalypt species like Red Box *Eucalyptus polyanthamos* and Yellow Gum *E. leucoxylon*. This area of the Wombat would probably offer the best chance of seeing the migratory and elusive Painted Honeyeater, especially when the mistletoe is fruiting. A much more common resident of the Wombat is the White-eared Honeyeater *Lichenostomus leucotis*, and like the Painted Honeyeater, is another honeyeater that isn't primarily a nectar feeder, with insects making up the bulk of its diet.

White-eared Honeyeater *Lichenostomus leucotis.* Photography © Gayle Osborne.

White-eared Honeyeaters are found in a variety of habitats, from dry inland mallee, coastal heathlands, to wet and dry sclerophyll forests. In the Wombat, these birds tend to favour the damper, more well vegetated areas, especially those with good stands of tall gums, in particular Swamp Gum *E. ovata* and Manna Gum *E. viminalis*. This seems to be in accordance with studies that show the species prefer eucalypts with shedding (decorticating) bark with a reasonably dense understorey. The underside of peeling bark, aside from insects, also provides nutritious food in the way of honeydew. The upper reaches of the Werribee and Loddon Rivers are reliable spots to find these birds in the Wombat.

When it comes to breeding, birds can sometimes get very inventive when gathering material for their nests. White-eared Honeyeaters have been known to use fur/hair from native mammals like koalas, possums, kangaroos and wallabies and introduced species like dogs, goats, rabbits, horses and even pigs! They've also been known to pull hair off unsuspecting human heads, no doubt an excellent binding and lining material for their nests.

The White-eared has several strange calls, not really what you might expect to hear coming from a smallish honeyeater. Often heard before being seen in the Wombat, one of its more common calls is a loud, deep *Chock-Chock-Chock*, usually coming from those peeling branches high in the treetops.

Should the Wombat's White-eared Honeyeaters have fancied more nectar in their diet, this summer just past would have well satisfied their appetites. Prolific flowering of some of the district's eucalypts, particularly Messmates *E. obliqua* and gums, mainly Manna Gums *E. viminalis*, drew not only many honeyeaters but also small flocks of Musk Lorikeets *Glossopsitta concinna*. This exceptional flowering event also attracted some Rainbow Lorikeets *Trichoglossus moluccanus*, a once rare sighting in these parts, especially in the wetter, colder areas around Trentham. ■

Fungus smorgasbord

Words and images by Gayle Osborne

The consumption of underground, truffle-like fungi is well-known in Australia, with animals such as potoroos, bettongs, bush rats, possums and wallabies observed to eat a large variety of species. It is also common to see above-ground fungi such as mushrooms that have been partially eaten. Much less is known about which species of above-ground fungi are eaten, and by which animals.

Tom May, Senior Research Scientist (Mycology) Royal Botanic Gardens Victoria, was interested in which fauna species are eating which fungus species, and suggested that it would be interesting to use motion-sensing cameras to investigate this.

Wombat Forestcare has postponed our camera research projects and as I live on a bush block within the Wombat forest it was the perfect opportunity to use these cameras.

The first attempt, with a camera pointed at a large, slightly nibbled, clump of *Gymnopilus junonius* resulted in images of the rear of a Black (Swamp) Wallaby *Wallabia bicolor*. Luckily the clump was substantial and with the camera repositioned, five days later there were images of the wallaby happily chomping.

By then I had cameras pointed at many fungi, with some results and started sending images to Tom. However, some of the fungi could not be identified from photos and Tom requested that I take herbarium samples. This is reasonably complicated and involves drying and sometimes dissecting the fungi.

I did not know how to do this and asked John Walter to come over and take charge. It was easy to comply with social distancing and I placed two specimens in his vehicle. I then watched John take detailed notes about the vegetation, particularly the nearby tree species, as many fungi have a mycorrhizal relationship with different trees. John also established that an eaten clump of fungi was actually two species, one with a strong mushroom odour and the other with no perceptible smell. Unfortunately for us the wallaby had eaten nearly everything and we only had one untouched specimen and some scraps.

A Black Wallaby feasts on an unidentified fungus species.

An unidentified coral fungus species eaten by a Black Wallaby.

Grifola colensoi munched by both a Mountain Brushtail Possum and a Black Wallaby.

A Black Wallaby eating this *Gymnopilus junonius* was the first set of images captured by a motion- sensing camera.

A banquet of *Cortinarius archeri* that was completely demolished by a Black Wallaby.

continued next page ...

A Mountain Brushtail Possum tucks into a large *Cortinarius australiensis* and then proceeds to eat the specimen in front of it.

Cortinarius australiensis is a large robust species that can grow to 30 cm.

At first, Mountain Brushtail Possums *Trichosurus cunninghamii* (also known as Southern Bobucks), were seen on camera to ignore fungi that were later eaten by wallabies. I was beginning to wonder whether their fungi diet was mainly underground fruiting fungi, but recently there have been images of Bobucks eating a larger range of above ground fruiting bodies, including a small fungus (probably a *Crepidotus* species) on a fallen tree.

A partially eaten *Grifola colensoi* remained unvisited for over two weeks and I assumed that it was becoming inedible and nearly moved the camera. It was lucky that I persisted as it was munched by a Bobuck and later by a wallaby.

As the season progresses and more fungi emerge it is impossible to have cameras on everything of interest and quite disappointing to find that many fungi are eaten before there is a spare camera. It can be over a week before a wallaby visits for a feed and, on one occasion, there was a camera pointed at a group of *Cortinarius archeri* for 13 days before there was a result.

One of our members alerted me to fungi being eaten near Wheatsheaf and this resulted in images of a wallaby eating *Armillaria luteobubalina.* Known as the Australian Honey Fungus, this fungus species causes dieback in trees and spreads through contact with roots of trees. In healthy forests it usually kills trees that are old, damaged or weakened by competition or disturbance. Although it is an indigenous species it may also cause the death of introduced trees, including fruit trees.

Australian Honey Fungus *Armillaria luteobubalina* totally eaten by a Black Wallaby.

Presumably the animals are assisting with spore dispersal, and spores of eaten fungi will be deposited at a distance from the fruiting body in a package of manure.

Some of the fungi that were observed to be eaten taste very bitter for humans, especially *Armillaria luteobubalina* and *Gymnopilus junonius*. Other fungi belong to groups, which contain some toxic species, as is the case for *Cortinarius*, a few species of which are poisonous to humans as they contain the toxin orellanine, which can lead to kidney failure. Fungi that are unpalatable or toxic for humans may not have the same effects on animals.

Not wanting to trouble John again, and having read up on taking an herbarium collection, I have gathered, dried and documented a range of fungi as well as taking spore prints. Hopefully this will lead to the correct identification of the fungi.

It is so easy to get totally absorbed in a project such as this and neglect all other duties. There is much still to learn about the way that animals, plants and fungi interact in our forests, and much that can be contributed by people out in the field, making observations with the assistance of technology such as motion-sensing cameras. ■

An unidentified bolete species consumed by Black Wallabies.

The Power of Purple

Words and images by John Walter

I have often heard it said that purple or mauve flowers attract insects whereas red flowers are attractive to birds. After thinking about the context for this article on the purple flowered peas, I decided to try and find some scientific evidence for this commonly used adage. I quickly found that there is a lot more to it than just a simple preference for flower colours.

Our eyes can detect red, blue and green whereas bees cannot see red although they do see blue, green and also ultraviolet light. However, our nectar-feeding birds see violet, blue, green and red. It seems likely that plants that evolved red flower tones may have done so to stand out from the rest and capture the market in nectar-feeding bird pollinators.

One Spanish study of insect behaviour shows that bees have an attraction to purple; moths and butterflies like mauve and pink, beetles like white and yellow, ants, wasps and flies all like UV yellow and ants additionally are attracted to green.[1] Another study conducted in the Australian Alps linked flies with the predominant white and light-coloured flowers of the region.[2] It is not as clear cut as these two papers suggest and another paper suggests that bees are also attracted to yellow while yet another says white, but there is general agreement about the attractiveness of purple flowers to our bees. The ability of bees to see ultraviolet light may also account for the pale-yellow flare seen in the centre of many of our purple peas, where, in ultraviolet light, it acts like a target for the bees seeking their reward and positions the bee perfectly to pick up or drop off a dusting of pollen.

With eight species of purple-flowered peas to cover (including two rare and one vulnerable listed species), I will try and be brief when discussing the more common species such as the Purple Coral-pea *Hardenbergia violacea*. This genus was established by George Bentham in 1837 in commemoration of Franziska, Countess von Hardenberg, a 19th century Austrian patron of botany and the sister to noted Austrian botanist Charles von Hügel (also known as Baron von Hügel) whom we met in the last article when discussing *Gompholobium*. It is a widespread and easily recognised species and the local form has a much richer colour tone than the commercially available cultivar sold as Happy Wanderer.

The next common species is the Austral Indigo or *Indigofera australis*. The term *fera* is derived from *fero* meaning 'bearing' hence this genus is the one bearing the highly sought-after dye called Indigo. The blue dye is produced by fermenting the leaves of two Indian species of *Indigofera*, and it seems that attempts to produce a suitable blue dye from our local species has produced a variable result.[3]

The distinctive foliage and graceful habit make this an easy one to identify and it is quite common on the slopes above waterways. It is also a favourite of the Black Wallaby in our area and many promising looking seedlings disappear overnight.

Cascading plant of *Hardenbergia violacea* with a typical leaf
Insert – A Blue-banded Bee, *Amegilla* sp. homes in on the yellow flare of a flower.

A cluster of *H. violacea* flowers and young developing leaves.

Indigofera australis flowers and typical leaf with its multiple leaflets.

continued next page ...

Our third common species is *Hovea heterophylla*, which was once thought to be *H. linearis*, and some records still list it under this name. Also known as the Common Hovea, this small species is very widespread throughout the highlands of SE Australia and is one of the earliest species to flower each spring. The genus was created by Robert Brown to commemorate a Polish botanist Anthony Pantaleon Hove who collected plants for the royal garden at Kew and for Sir Joseph Banks. In 1787 Banks provided Hove with confidential instructions to select and secretly despatch cotton seed when on his collecting trip to India. Bank's plan was to grow cotton in the West Indies and overcome the cotton shortage by breaking the control of the East India Company.[4]

Hovea heterophylla is a small plant with a few upright or trailing stems. Typical linear leaf on main image and shorter elliptic leaf on the inset image.

The species name, *heterophylla*, is a reference to the plants having two different leaf shapes and literally translates as 'different leaves'.

While researching for this article I discovered that there is another Hovea species recorded for our district and this is the rare *Hovea asperifolia* subsp. *spinosissima*. The current restrictions prevent me from racing out to get some images and it is too early for flowers. The illustrations shown here are of *H. asperifolia* subsp. *asperifolia* which is more common and found in eastern Victoria.[5] Once thought to be *H. pannosa* it was recorded as this until further research established the new name and subspecies in 2001. The name *asperifolia* means rough leaf and it is the rough projections on the upper surface of the leaf that distinguish it from *H. pannosa*.

Hovea asperifolia subsp. *asperifolia*, branch, flower detail and habit. You can just make out the rough projections that gave rise to the name on the leaves of the detailed flower image. Note the yellow flare to the flowers confirming that this is NOT the locally occurring subspecies in which the yellow is replaced with purple.

There are subtle differences in the leaves of the two subspecies, but the clearest difference is the lack of the yellow flare or target in subspecies *spinosissima* which has a dark purple flare instead the usual yellow. They are shrubs up to two metres tall and can be found along Sailors Creek near Hepburn, with a second population occurring near Euroa.[6]

Next on my list is *Cullen microcephalum*, the Dusky Scurf-pea. This is a widespread but uncommon species in the Wombat State Forest where I have recorded it twice and there have been a handful of collections. It likes damper places and I located it near the headwaters of the Werribee River near Spargo Creek and alongside the Coliban River near the Domino Trail close to Lyonville.

The trifoliate leaves are very distinctive both in their shiny green colour and their shape. I have not been able to trace the inspiration for the name *Cullen*, but the genus was established by German physician and botanist Friedrich Kasimir Medikus in 1787.[7] The earliest published description of this species was by Gustav Kunze in 1847 and he based this on an earlier unpublished description

Distinctive leaves of *Cullen microcephalum* and clusters of *C. microcephalum* flowers.

continued next page ...

by Heinrich Gustav Reichenbach.[8] While we know that *microcephalum* translates as small head, none of these German botanists recorded the exact feature of the plant that this referred to. Perhaps it is a reference to the small clusters of flowers that rise above the foliage on long stems.

It is a threatened species in Tasmania and South Australia, and all the other *Cullen* species in Victoria are listed as endangered, but while it is uncommon in Victoria, *C. microcephalum* does not appear on our endangered species lists.

The last of the common species is *Glycine clandestina*, the Twining Glycine. Well, it was going to be, but then I decided I needed a photograph that showed the twining habit of the plant and headed out to the nearest location armed with my camera. I quickly found a group of plants that I had previously visited and saw a few seedpods which I photographed as I did not have any images of the seedpods in my records.

Armed with the new images, I decided to ensure none of my records were for *G. tabacina*, which has trailing stems instead of twining stems along with some leaf differences and occurs both to the north and south of our district. I quickly realised that the seed pod was wrong for *G. clandestina* and the twining habit excluded *G. tabacina* but a search of my best books led me to a third species which I had not previously considered. This is *Glycine microphylla*, and it appears to have confused the botanists as well as me. Bentham described it as a new species in 1839 but in 1856 Hooker could not see the differences from *G. clandestina* and made it a variety of *G. clandestina*.[9] It was finally given species status by Mary Tindale in 1986.[10]

I discovered that the location or absence of the stipels at the base of the leaflets and the arrangement of the veins in the leaves were important considerations and realised that my plants with the seedpods were definitely *G. microphylla*. But what of my other records for *G clandestina* in the Wombat? After a mad dash around the forest armed with a magnifying lens, camera and collection permit, I can confirm that all my records from the Wombat Forest are *G. microphylla*, not *G. clandestina*. An important lesson from this is to always check the plants closely and never assume that the plant you are looking at is the most common species around.

Glycine was first described by Carl Linnaeus in 1753 and its most famous member is the Soybean, *Glycine max*. The name comes from the Greek *Glykys* meaning sweet and refers to the sweet roots and leaves on some species.

Our second last species is also a *Glycine*, and this is the vulnerable listed *G. latrobeana*. There is one record for this species in the eastern part of the Wombat plus several records in the Fryers Ranges and I have photographed it at Bald Hill near Kyneton.

G. latrobeana was named in 1844 for the then Superintendent of Port Phillip who went on to become the first Governor of Victoria. Charles Latrobe had an interest in botany and may have been the collector of this species, but I cannot locate a record to confirm this.

All images are *Glycine microphylla*. Flowers of various ages from unopened in the centre top to expired on the bottom left.

Trifoliate leaf on left 1.75 times natural size. You can just make out the tiny black dots where the 3 leaflets meet. These are the stipels. Inset is an enlargement of the same leaf. The underside of the leaf on the right shows the intricate pattern of veins and the angles at which the secondary veins meet the main vein.

Microscope image of the four dark-coloured stipels, the lower set are larger and the right side upper stipel is malformed and brown. Many leaves have stipules at their base but when these are formed at the base of leaflets, they are called stipels. The right-hand image shows the twining habit of this species along with the seedpod that prompted the review.

continued next page ...

G. latrobeana is non-twining and unlike *G. microphylla* it does not form stolons.[11] Also known as the Clover Glycine, its mature leaflets are rounded, and immature leaflets are elliptic. It only has the lower set of stipels (as does *G. clandestina*) and these point down the stem unlike the stipels on the other species.

The final purple pea is a rare species named *Swainsona behriana*, also known as the Southern Swainson Pea. This is another species that I have never seen, but there are a few records for it just north of Castlemaine and one record near Basalt, west of Hepburn Springs. I have used images taken by Maree Goods in the West Wail Flora Reserve and presented on the NatureShare website.[12]

The colour of the flowers is striking and was described by J.M. Black in 1927 as "deep purple" which I consider a little early to be a reference to that notable musical operation. The leaves, like the band in the 1970s, are hairy and quite distinctive. The small clusters of flowers stand on stems well above the foliage, but individual plants are slender and only 10 to 20 cm tall.

Black details the naming of this species by Ferdinand von Mueller in 1850 and records that the name is derived from Mueller's associate Dr Behr whom von Mueller knew in Adelaide before he relocated to Victoria in 1852. Mueller did not publish a description of the species however and this honour fell to John McConnell Black the noted South Australian botanist who published this in 1927.[13]

While we delved a little into the power of purple to attract insects at the beginning of this article and diverged into the music scene in the early 1970s along the way, for me, the real power of purple is the wonderful contrast it makes to the great many yellow flowered plants in our spring wildflower season. Look out for some of these treasures in late August in warmer areas. ■

Flowers of the vulnerable *Glycine latrobeana*.

G. latrobeana leaves.

Flowers and leaves of the rare *Swainsona behriana*.

Notes

1. Reverte, Sara et al (2016) Pollinators show colour preferences but flowers with similar colours do not attract similar pollinators, *Annals of Botany*, 118: 249-257.
2. Pickering, C M & Stock, M (2004) Insect colour preferences compared to flower colours in the Australian Alps, *Nordic Journal of Botany*, 23: 217-223
3. http://www.turkeyredjournal.com/archives/V18_I1/heywood.html
4. Wulf, Andrea (2011) *The Brother Gardeners, botany, empire and the birth of an obsession* 209-210
5. These images were taken by that most avid of field naturalists, Reiner Richter and appear on iNaturalist. https://www.inaturalist.org/photos/10815152 https://www.inaturalist.org/photos/10815153 https://www.inaturalist.org/photos/10815154
6. Thompson, I R (2001) Morphometric Analysis and Revision of Eastern Australian Hovea (Brongniartieae-Fabaceae), *Australian Systematic Botany* 14: 1-99
7. Medikus does not mention who he was commemorating in his text however the most likely candidate is the fellow physician and botanist Willian Cullen who died 1790. Cullen was the leading physician and educator of his time, and while he was based at Edinburgh, he was widely published and known in Europe.
8. The Australian species of Cullen were formerly listed as *Psoralea* species. For the original description as *Psoralea* see: Kunze, G (1847) Pugillus tertius plantarum adhuc ineditarum seu in hortis minus cognitarum, quas annis 1843-1846, praeter alias alio loco descriptas v. describendas, coluit hortus botanicus Univers. Litterarum lipsiensis. *Linnaea: ein Journal für die Botanik in ihrem ganzen Umfange, oder Beiträge zur Pflanzenkunde* 20(1): 62 The things I read for these articles are amazing!
9. Bentham, G (1837) *Commentationes de Leguminosarum Generibus* 48, 61
10. Tindale, M (1986) Taxonomic Notes on Three Australian and Norfolk Island Species of Glycine Willd. (Fabaceae:Phaseolae) including the Choice of a Neotype for *G. clandestina* Wendl, *Brunonia* 9: 179-191
11. A stolon is a shoot or stem that readily strikes roots when contacting the ground. *G. microphylla* and *G. tabacina* both form stolons and both have the upper and lower stipels on the leaflets. *G. microphylla* is twining whereas *G. tabacina* is not. *G. clandestina* does not form stolons, only has the lower stipels (pointing upwards) and is twining. *G. latrobeana* also does not form stolons and only has the lower stipels (pointing downwards) and is not twining. You need to match this information with the differences in the leaves to be confident of identifying a species.
12. Images by *Eremophila* enthusiast and passionate advocate for the native flora of the Wimmera, Maree Goods. See NatureShare. https://natureshare.org.au/observations/54efb28bed2a89277100023f?species=Swainsona+behriana
13. Black, JM (1927) Additions to the Flora of South Australia No. 25, *Transactions and Proceedings of the Royal Society of South Australia (Incorporated)* 51: 378-385

Autumn sightings

Words and images by Gayle Osborne

A female Magnificent Ghost Moth *Abantiades magnificus.*

There are about 150 species of ghost and swift moths (family Hepialidae) found in Australia. They emerge at night, from late summer to early winter, often en masse after rain.

Within this family the *Abantiades* species are eucalyptus forest dwellers where the larvae usually feed underground on roots. This female Magnificent Ghost Moth *Abantiades magnificus* was unfortunately deceased when found in the forest near Shepherds Flat. She was indeed magnificent, almost an impressive 10 cm long.

The bodies of these moths are protein rich and hence are sought as food for many animals and birds. The Shepherds Flat area has a population of Brush-tailed Phascogales *Phascogale tapoatafa* that would depend on such nourishment.

Another beautiful moth is the Patched Leaf Moth *Monoctenia falernaria*, a gum leaf mimic. This specimen was found by one of our members in the Wombat Forest near Spring Hill. The caterpillar feeds on the leaves of various Eucalyptus species.

This hairy caterpillar, the larval stage of the Perfect Tussock Moth *Calliteara pura* was moving swiftly over a fallen log. The hairs on these caterpillars can cause skin irritation and the caterpillar will pupate within a cocoon that incorporates some of these hairs, to assist in protection from predation. ■

Patched Leaf Moth *Monoctenia falernaria.*

A Perfect Tussock Moth *Calliteara pura* caterpillar.

Wombat Forestcare

research • education • action

Wombat Forestcare Inc. is dedicated to preserving the biodiversity and amenity of the Wombat State Forest, Central Victoria, Australia, by utilising the skills and resources of the community.

By becoming a member you will have input into our activities and projects, and give support to caring for our forests.
For memberships and further information contact Gayle Osborne, (03) 5348 7558 or email info@wombatforestcare.org.au
Membership fees: $15 single and $20 family. Visit our website - www.wombatforestcare.org.au