

# NATURA Far South Coast

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Observing and understanding the flora and fauna of Bermagui/Wallaga Lake's forests and shorelines

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After four months of well-below average rainfall it was wonderful this month to finally receive some much-needed falls across the Bega Valley Shire. Although not enough to fill dams or water tanks these close-to-average totals did result in a noticeable greening of the valley and a burst of new growth. Despite the abundance of new growth my first observation of the month was a bloom, not of flowers but of jellyfish, in Wallaga Lake. This bloom was short-lived with the jellyfish dispersing just as quickly and suddenly as they appeared following the first rainfall of the month. The remainder of October was filled with observations more typical of and expected at this time of year with the first of the orchids appearing and birds, bees, butterflies and beetles abounding. Without further ado, let's look at some of these seasonal delights but first a word of warning for any of you that feel a little uneasy when confronted with our eight-legged friends .... there are 2 spiders included in this issue. One is small and positively delightful but the other is large and, although in my opinion very beautiful, might be a little bit unsettling for some of you. I've popped them in down on the last page so you won't be startled by their sudden appearance somewhere in between the jellyfish and the beetles.



**At left** – You know summer is just around the corner when cicada song fills the air. Did anyone else hear them on the warmer evenings this month? And did you know that only the male cicadas sing? Although heard more often than seen I did manage to find one cicada this month – the **Alarm Clock Squawker** (*Pauropsalta mneme*) shown here – and a friend found a **Silver Princess** (*Yoyetta celis*). Well done Joy! Both of these species are around 22 mm long, and are among the first to appear each season. The much larger greengrocers, razor grinders and drummers won't appear for another month or

so. I find the common names of cicadas amusing with many of them referencing the particular call that is unique to each species. For example, the Alarm Clock Squawker shown here and also known simply as a "Ticker" is so named because its call – a series of clicks followed a rattling buzz – sounds like an old-fashioned alarm clock.

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## JELLIES and BLUBBERS

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On the first day of October hundreds of Moon Jellies, ranging in size from a tiny 10 mm up to a maximum of about 65 mm in diameter, surrounded the pontoon at the Beauty Point boat ramp. I spent some considerable time watching these delicate, simple creatures pulsing gently en masse through the water, and found the experience so mesmerizing and calming that I returned the following day to observe this natural phenomenon again. On both occasions two, or possibly three, larger and more robust Blue Blubber Jellies drifted in periodically to join the Moon Jellies. Both species dispersed after the fall of rain on the evening of October 4<sup>th</sup>.

**Moon Jellies** are a common animal in oceans, coastal lakes and estuaries around the world and, as seen in Wallaga Lake this month, can at times be extremely abundant. Moon Jellies belong to a group of jellyfish known as **Flag-mouth Jellies** (order **Semaeostomeae**) which are so-called because they have four frilly oral

arms that surround their mouth and hang down flag-like beneath their umbrella-shaped body. These arms are placed at each corner of the jellyfish's square mouth and are equipped with stinging cells known as **nematocysts** that allow the animal to capture and subdue zooplankton and other prey such as small fish, crustaceans and even other jellyfish. Once captured, the prey is dragged upwards towards the mouth for consumption. Moon jellies have a transparent body with four horseshoe-shaped reproductive organs (gonads) that are clearly visible even when viewing the animal in its aquatic environment. The outer edge of the bell is rimmed with fine, hair-like tentacles that capture and direct prey to the larger oral arms as well as eight special sensory organs known as **rhopalia** (singular – **rhopalium**) which are located in evenly spaced indentations around the outer rim of bell. Each rhopalium is capped with a sac-like structure known as a **lithocyst** which allows the jellyfish to sense gravitational changes, thus enabling the animal to orientate itself in the water. Additionally, each rhopalium possesses a simple eye known as an **ocellus** (plural – **ocelli**). Although these ocelli cannot transform the sensation of light into a complete image they *are* photoreceptive, and allow the animal to differentiate light from dark. This is how the jellies are able to avoid bumping into mangrove roots, jetty piers and other obstacles as they move through the water and also, by detecting and responding to sunlight shining on the water surface, sense up from down. Like all jellyfish, moon jellies do not have a brain or a central system but do have a loose network of nerves, known as a **nerve net**, located in the epidermis. This nerve net allows the jellies to detect various stimuli such as the touch of potential prey or other animals. Moon jellies move by using a nerve ring at the base of the bell to control the pulsing action of the bell's outer edges so that locomotion is achieved, albeit slowly and dictated somewhat by the water currents. **A fun fact** - laboratory testing has shown that a moon jelly's rate of movement is a dawdling 7 mm per second. To put this into some sort of context, the average garden snail travels at a speed of 22.36 mm per second. Perhaps we should all start saying "slow as a moon jelly" when referring to particularly tardy people?

**At right** – one of the many moon jellies (genus *Aurelia* – unidentified species) I observed in Wallaga Lake. Worldwide, there are currently 25 accepted *Aurelia* species and many more that are not yet formally described. The similar appearance of these animals makes them difficult to identify to species level, especially when relying on just a photograph such as this one. You can, however, clearly see many of the features characteristic of the *Aurelia* genus including the horseshoe-shaped gonads, the fine hairlike tentacles around the outer edge of the bell and three of the eight rhopalia which allow the moon jelly to differentiate light from dark and up from down.



The photo at left shows one of the 2 or 3 **Blue Jelly Blubbers** (*Catostylus mosaicus*) that drifted in and out to periodically join the smaller and much more numerous moon jellies surrounding the Beauty Point pontoon. If you look closely in the bottom left of the photo you can also see a moon jelly swimming beside its cousin - although both are a type of jellyfish, the Blue Jelly Blubber looks entirely different to the moon jellies. Despite its common name, and somewhat disappointingly, the Blue Jelly Blubbers in Wallaga Lake are not blue .... they're brown. If you want to see a jelly blubber in all its beautifully blue glory you will either have to go and find one in Australia's more northerly and warmer waters or do a quick google image search (the blue ones are stunning and definitely worth a look)

Blue Jelly Blubbers belong to a group of jellyfish known as the **Root-mouth Jellies** (order **Rhizotomeae**). Unlike the moon jellies these jellyfish don't have an obvious mouth on their underside, and instead have small openings on each of their 8 fat arms through which food is passed to the stomach. Each arm, or tentacle, has stinging nematocysts that allow the jelly blubber to capture tiny prey such as zooplankton and small crabs. The thick, three-sided arms of Blue Jelly Blubbers and the other 19 similar jellyfish species are so distinctive that the family to which they belong – **Catostylidae** – is commonly known as the Fat-armed Jelly family. I for one am very gratefully that I have not been allocated a name based solely on my physical appearance. If I was I'm sure it would be just as unflattering as "Fat-armed Jelly" and would probably include the phrase "Bingo-winged"!

The mushroom-shaped bell of a Blue Jelly Blubber can grow up to 35 cm in diameter, and at least one of the blubbers I saw in Wallaga Lake was close to this maximum size. Like the moon jellies, Blue Jelly Blubbers have 8 rhopalia which allow the animal to differentiate light from dark and up from down so they have at least some control and understanding of the aquatic environment in which they live. Unlike the delicate little moon jellies which drift daintily through the water, fat-armed jellies swim jerkily by repeatedly contracting their circular and radial muscles to reduce the volume of water beneath the bell and then relaxing the muscles to increase the water volume again. Although this repeated sequence does afford the jelly blubbers locomotion the animals have no control over the direction of their movement and as such are subject to the whims of water currents and tides for much of their motivity.

The Blue Jelly Blubber is found in coastal zones of the Indo-Pacific, and in Australia is the most commonly encountered jellyfish in the coastal waters, estuaries and lakes of Queensland, NSW and Victoria, Why aren't all Blue Jelly Blubbers blue? Because their colour is dependent on the symbiotic relationship they have with algal plant cells in their bodies. In the warmer waters of northern NSW and Queensland the Blue Jelly Blubber's colour can range from light blue to dark purple and burgundy but in cooler, more southerly waters such as we have here the animals are a far less spectacular creamy white or brownish yellow.

Because jellyfish can reproduce and grow quickly when conditions are right, and because the ones in Wallaga Lake are trapped and unable to disperse into more open waters now that the lake mouth is closed, it's highly likely we'll see more mass aggregations of jellies in the lake over the coming months. So we can understand why these blooming events occur here is a quick and simplified summation of jellyfish reproduction. Jellyfish pass through 2 distinct body forms during their life cycle. The first is known as the polypoid stage where the animal takes the form of a small stalk with feeding tentacles. These jellyfish polyps can be either solitary or colonial with some species budding to make more polyps. In the second stage, the polyps asexually produce up to 20 tiny jellyfish that are only a millimetre or two in size. The newly produced baby jellyfish pull away from the polyp and then live freely in the water, feeding continuously on zooplankton and growing rapidly, until they reach their adult size. Once they reach their adult size jellyfish are **dioecious** with individuals being either male or female. Reproduction takes place when males and females congregate and simultaneously release eggs and sperm into the water so that fertilization can occur. The new larval organisms that result then settle on or near the sea floor to become polyps so that the cycle can be repeated. Jellyfish can spawn daily if there is enough food in the ecosystem and this why, particularly in spring and summer when more sunlight and higher water temperatures increase the availability of food, jellyfish blooms can see hundreds and even thousands of animals congregated in one place. Dependant on species and conditions, the lifespan of a jellyfish can be anything from just a few hours to several months. **A final few fun jellyfish facts** - in its adult form a jellyfish is known as a **medusa**. The umbrella-like body of a jellyfish is made up of a gelatinous material called **mesoglea**. This mesoglea is the "jelly" that gives the animals their common name and is composed of more than 90% water.

It was wonderful to see many of our native flora species beginning to flower after the rain this month. Although still rather patchy, and with most yet to reach their full floral bloom, *Melaleuca armillaris* (Bracelet Honey-Myrtle) and *Ozthamnus diosmifolius* (Sago Flower), as well as *Leptospermum* (Tea-Tree), *Hibbertia* (Guinea Flower), *Pultenaea* (Bush-Pea), *Dianella* (Flax Lily), *Pomaderris* and *Bossiaea* species, have all begun to put on a show much to the delight of not only myself but the local birds, butterflies, bees and other insects. Flowering particularly well at the moment are the *Eucalyptus sieberi* (Silvertop Ash) trees. With many now in close to full bloom they are a spectacular sight, particularly where stands are growing along our local roadsides. Because these trees are tall, and because I am short(ish), I can only imagine what a hive of activity these eucalypt canopies must be with all manner of pollinators and nectar feeders making the most of this seasonal bounty.

**ORCHIDS** - What's not to love about orchids? With many species only present as a bunch of strappy leaves and others entirely absent from the landscape for much of the year, the appearance of their flashy, colourful flowers is much anticipated by many. As I observed in October last year both *Cymbidium suave* (Snake Orchid) and *Dipodium roseum* (Rosy Hyacinth Orchid) began to flower this month but *Calochilus* (Beard Orchid) species ... a personal favourite of mine ... are yet to appear. I'm hopeful that November will see their return.

The **Snake Orchid** (*Cymbidium suave*) is endemic to eastern Australia and, as an epiphyte, grows in the hollows of old trees or in fallen, decaying trees. Although the clumps of strappy, grass-like leaves are present all year round it is when they come into bloom that these orchids really shine with between 5 and 50 strongly scented flowers borne along each long, arching stem. Online resources have informed me that Bega is the southernmost extent of the Snake Orchid's range but there are a few records of them as far south as Pambula and, in January this year, a Snake Orchid was documented in flower and growing on a *Eucalyptus tindaliae* (Stringybark) tree in Beowa National Park. The Snake Orchid shown at right was photographed on the Montreal Goldfield this month. Although this particular plant is growing low to the ground in a rotting stump Snake Orchids are often seen growing high up in the forks and hollows of trees, thereby making full appreciation of their beautiful floral displays difficult. Like all epiphytes, Snake Orchids grow on the surface of another plant for physical support and derive their moisture and nutrients from the air, rain and debris that accumulates around the base of their leaves. It's worth noting that, unlike parasitic plants such as mistletoes and dodders, epiphytes have no negative impact on their host plant. **A cautionary word** - if you're looking up into the treetops to spot orchids, birds or anything else .... STOP WALKING! Both myself and several compadres have come a cropper when failing to heed this most basic and obvious advice.



The **Rosy Hyacinth Orchid** (*Dipodium roseum*) is the most common of the three *Dipodium* species found in the Bega Valley Shire. The other two are *D. punctatum* (Blotched Hyacinth Orchid) and *D. variegatum* (Slender Hyacinth Orchid). All three species are leafless and produce a tall flowering stem bearing up to fifty flowers. Because they lack leaves, and therefore chlorophyll and the ability to photosynthesize carbon dioxide and water into simple sugars as a food source, all 3 species are **mycotrophic**. Mycotrophic plants such as the three *Dipodium* orchids mentioned here rely on a close parasitic association with fungus to obtain most or all of the carbon, water and nutrients needed for their growth. Although flowering of the Rosy Hyacinth Orchid peaks



from December through to February it is not unusual for the first flowering stems to appear at this time of year. The photo at right shows the first of the Rosy Hyacinth Orchids in flower on the Montreal Goldfield this month. Over the following few months I am expecting many more of these, and the other 2 local *Dipodium* species, to appear not only at Montreal but throughout our local forests. **A note for all the orchidists and native plant enthusiasts out there** – none of the leafless species of *Dipodium* have been successfully cultivated due to an inability to replicate the symbiotic association between the plants' roots and mycorrhizal fungi.

On a less positive note I have noticed that many trees and shrubs have joined the goodenias mentioned last month in their struggle to thrive after the dry winter. Although *Allocasuarina littoralis* (Black She Oak), *Exocarpus cupressiformis* (Cherry Ballart) and some of the eucalypts are, in many areas, doing poorly it is *Banksia integrifolia* (Coastal Banksia) that seems to be more

broadly and more severely afflicted with many trees appearing to be dead or dying. In almost every location I visited this month the ground beneath the banksias was thick with fallen leaves. Whilst some of this leaf fall could be attributable to the strong winds experienced across the area over the past few weeks I feel it is indicative of a much more worrying and long term problem. Time and substantial, soaking rain will tell just how well these stricken trees are able to recover.

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## NOT YOUR AVERAGE FLY

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Believe it or not, the fabulously cute and fluffy insect shown at right is a fly but you could well be forgiven for mistaking it for a bee. It is, after all, a lot fuzzier than your average fly and it is definitely *acting* like a bee as it feeds on a *Leptospermum* flower. Because these flies look and act like bees they are commonly known as **Bee Flies** and belong in the order **Diptera** (which also includes mosquitoes and midges) and the family **Bombyliidae**. (Bees, along with ants, wasps and sawflies, belong to a completely different order – Hymenoptera.) So, how do you tell the difference between a bee fly and a bee? By looking at the wings! Bee flies have just one pair of wings which are held swept back and away from the body when the insect is at rest. Bees, on the other hand, have 2 pairs of wings which are held close to rather than away from their body. Additionally, bee flies, and in fact all flies, typically have larger eyes and shorter antennae than bees. These differences can be difficult to spot on an insect that is small and very active but at least you now know what you should be looking for. You may have more luck identifying a bee fly if you're fortunate enough to find one that *isn't* flying and is instead sunbaking on bare ground or dead leaves – a favourite pastime of these insects when they're not feeding.



The bee fly shown above is an unidentified *Meomyia* species. Although the Bombyliidae family to which it belongs is a large one with over 1,000 described species not a lot is known about the life cycles of these insects, due in part to the fact that bee flies are far less numerous than many other fly genera and therefore less frequently encountered. This is very much the case with regards the *Meomyia* species, and I have been able to find very little genera-specific literature despite extensive online searches. For this reason, the information I

am supplying on the fuzzy little insect shown above is either generally applicable to all bee flies, or is genus applicable based almost entirely on my own observations.

*Meomyia* bee fly species have 6 long, thin legs and a long straw-like mouthpart that extends well in front of the insect's head. In order to feed, these flies rest their long legs lightly on the edge of a flower and then tilt their bodies forward so their long proboscis can access the pollen at the flower's centre. In order to achieve the tilt needed by these flies to feed, the front legs are shorter than the middle and rear legs. When feeding *Meomyia* species never spend long at each flower and, because the insect's wings never stop their rapid beating, are able to quickly move onto the next flower. None of the *Meomyia* bee flies that I have observed have fed at more than 2 or 3 flowers during a single sitting before leaving the feed site only to reappear some 10 or 15 minutes later to repeat the process. Although the majority of *Meomyia* bee flies I have observed have been feeding on *Leptospermum rotunifloium* planted in the garden surrounding the Montreal Goldfield Heritage Centre I have also encountered them occasionally in our forests. On these occasions they have always been in close proximity to naturally occurring and in-flower *Leptospermum*, suggesting that *Leptospermum* is the preferred food source for at least some *Meomyia* species. This theory is supported by the timing of these bee flies' presence each year – they first appear as the *Leptospermum* are coming into flower but then disappear several weeks later when peak flowering is past. This also suggests that these insects have a short adult lifespan. Any advice, confirmation or correction of my theory from those of you that are more knowledgeable than me would be most welcome.

**BELOW** - Because bee flies are very active, very fast and very unapproachable even when at rest it is very difficult to get enough good clear photos of a single individual to achieve a definitive ID to species level. I got lucky with the bee fly shown below when I chanced upon it in my car in October 2022. The identity of this insect has been confirmed as *Meomyia vetusta* (no common name), and allows you to see many of features that are typical of the *Meomyia* genus – long legs, a very long and obvious proboscis, two wings which are held swept back and to the side, and a short, wide and very fuzzy body. In a word .... adorable! You can also see the large eyes and short antennae which distinguish this, and all other flies, from bees.



Bee flies exhibit a characteristically cautious approach to a possible feeding or landing site and will hover over several locations before choosing to settle and, even when at rest, are highly reactive to any movement or shadow fall. This nervous behaviour makes them very difficult to photograph .... much patience and a long zoom are highly recommended but by no means guarantee a good result. In flight, bee flies have great manoeuvrability and are capable of rapid acceleration and deceleration and high speed, sharp and sudden turns. This capability is very obvious when observing *Meomyia* bee flies ... they are so fast and so abrupt in their changes of direction that it can be incredibly difficult to track their movements with your eyes. **A fun fact** - Flies used to have 2 pairs of wings but the hindwings of their early ancestors reduced in size during the

evolutionary process and developed into a pair of club-like structures called **halteres**. These halteres act as gyroscopic organs and provide flies with great balance and manoeuvrability when in flight. The aeronautical ability afforded by the presence of halteres is clearly evident in bee flies. Interestingly, if a fly's halteres are removed the insect loses its ability to fly ... in other words, the fly becomes a walk.

Bee fly larvae are predators of insect eggs, especially those of grasshoppers, or parasitoids of insect larvae. Female bee flies lay their eggs near their hosts, often on bare ground near the nests of solitary bees or wasps, or near the egg pods of grasshoppers. Although insect parasitoids are usually fairly, and often highly, host-specific, some bee fly species are opportunistic and will attack a variety of hosts.

**Bee flies as pollinators** – Bee flies, like the insects in many other fly families, are cross-pollinators of the plants on which they feed. Although their smaller populations do not allow them to rival the hover flies (family Syrphidae) or other pollen-feeding flies in their efficiency as a pollinator they nevertheless play an important role in this vital process.

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## THE LAZY TWITCHER

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For those of you that don't know, a "twitcher" is someone who enjoys watching birds. The term is usually applied specifically to someone who will travel long distances to observe a rare species. A "lazy twitcher" is someone who enjoys watching birds, rare or otherwise, without the inconvenience of leaving their own backyard ... in other words, me this month. In my defence I had absolutely no reason to venture further afield in search of feathered friends because they, most obligingly, came to me with 19 species recorded in my yard and another 8 species flying or calling nearby during October. These species included scrubwrens, fairy wrens, fantails, 4 species of honeyeater, 3 species of pigeon, a pair of wood ducks and a white-faced heron. The white-faced heron, quite surprisingly, has been a regular visitor to my yard for a few years now and I have become



very accustomed to seeing him stalking through the grass in search of lizards, frogs and other tasty treats. His sniper-like approach and lightning-fast strike when hunting has led me to endow him with the moniker Lee Harvey Oswald ... a rather long and cumbersome name but quite befitting of his ruthlessness I think. A particularly delightful discovery this month was the nest of a Brush Wattlebird which held two beautifully coloured speckled eggs. My joy at the arrival of the tiny chicks was short lived because they were both taken from the nest by a raven or other predator before they were a week old. The photo at left shows the Brush Wattlebird nest and the 2 eggs, and was taken 3 days prior to the arrival of the chicks.

The ravens .... is it just me, or is there an extraordinarily large population of them in the area this year? The birds I am referring to are **Australian Ravens (*Corvus coronoides*)**, a bird that is often referred to erroneously as a crow. In previous years I had only ever seen these birds either occasionally flying overhead or, more frequently, scavenging for food or pecking at roadkill along the roadsides. This year however they have well and truly made their presence felt ... and heard! .... at Beauty Point. The birds' presence has intensified this month now that their 2 chicks have fledged and are accompanying their parents around their home territory. Although ravens have a wide-ranging diet that includes grains and fruit they are, for the most part, carnivorous with insects, spiders, caterpillars, eggs, carrion and small animals and birds making up the majority of their diet. **A fun fact** - The collective noun for a group of ravens is an unkindness. **A not-so-fun**

**fact** - This term seems very apt given the birds penchant for stealing baby birds from their nests and beheading centipedes before consumption.

**The photo at right** shows an Australian Raven actively hunting for insects, or possibly bird nests containing eggs or chicks, in the foliage of a conifer. This bird was very thorough in its search, at times even disappearing completely from view as it pushed its whole body in between the branches and dense foliage so that no potential snack would be missed. Although I have seen this bird, or its mate, take many young birds over the past few weeks I was relieved to see it leave empty-beaked on this occasion. Early in the month, I observed another Australian Raven preying on the larva of a Saunder's Case Moth (*Metura elongatus*). I initially noticed this bird as it appeared to be searching for something in the branches of a small, scrawny tree in the middle of a paddock. After 2 or 3 minutes the bird seemed to dislodge a twig from the



tree and flew to the ground with it. A closer examination of the photos I was taking of the raven's behaviour showed that the twig was, in fact, the large case of a Saunder's Case Moth. The bird remained on the ground as it used one foot to hold the larval case whilst continually turning and tearing at the case with its beak to strip away the tough outer covering.. After about 4 minutes the larva was sufficiently exposed that it could be extracted and then eaten. The meticulous manipulation and dismantling of the larval case demonstrated by this raven in order to procure a meal was extraordinary! Despite the two very deliberate hunting methods described here Australian Ravens are considered largely opportunistic scavengers, hence their propensity to hang about on the side of the road pecking at roadkill and discarded cheeseburger wrappers.

Early in October the coarse, loud calls of the **Channel-billed Cuckoos** (*Scythrops novaehollandiae*) once again rang out across Beauty Point as these large birds arrived from New Guinea and Indonesia to commence their breeding season. Although heard more often than seen, the bird's pale grey plumage, large, sharply-curved bill and distinctive crucifix-shaped silhouette when flying overhead make it hard to mistake it for any other bird. After mating, and as is typical of all cuckoos, these birds will seek out an unsuspecting surrogate to raise their chicks with currawongs, ravens and choughs the preferred hosts. After laying one or two eggs in a suitable nest the female will hand over full responsibility for incubation and the raising of her chicks to the host birds. When they hatch, most cuckoo chicks are "ejectors" that push any other eggs or chicks out of the nest but the Channel-billed Cuckoo chicks won't do this. Instead, because they are larger and grow faster than the other chicks, they demand the lion's share of the food, and ultimately starve the other chicks to death.



There is some anecdotal evidence that the host chicks don't take this home invasion lying down, and battle fiercely for their share of food, at least in the early stages. Unfortunately, this does not change the end result. **Shown at left** is a surrogate parent – a currawong - looking rather peeved as its gigantic baby incessantly and loudly screams for more food in early Feb. 2023. I could almost hear the currawong parents' sigh of relief ... thank goodness that is over! ... when the baby was reclaimed a week later by its real mother in readiness for the cuckoo birds' return journey north.



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## JEWEL BEETLES

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With their bright, often iridescent colours and bold patterns the springtime emergence of jewel beetles is much anticipated, not just by coleopterists but by generalist entomologists and amateur naturalists such as myself. **Jewel Beetles** belong to the family **Buprestidae**, a large family with over 1,400 species present in Australia. These beetles are very distinctive insects with elongate and usually flattened bodies, large eyes and short antennae. Rather sadly and unnecessarily, the bright colours and often metallic sheen of jewel beetles makes them very popular with collectors. Personally, I prefer to appreciate their beauty through the lens of my camera out in the field rather than dead and pinned out neatly in a box. Because many jewel beetle species are nectar feeders the insects can often be found resting on or flying around flowers in forests, woodlands and heaths. Jewel beetle larvae are known as flat-headed borers and usually live and feed in woody branches, stems or roots but some are leaf-miners or gall-formers. Surprisingly, despite their popularity and numerous taxonomic studies, there is relatively little published biological data about jewel beetle species, and what is available is usually not very specific.

Jewel beetles range in size from 3mm up to an impressively large 65 mm but it is typically the small-to medium sized beetles that are the first to appear each year. This month I was absolutely chuffed to record 4



species of jewel beetle. One was a species I had observed previously in 2022, but the other 3 were new-to-me species .... woohoo! All four belong to the endemic genus *Castiarina* which, with more than 450 species described, is Australia's largest jewel beetle genus. Shown at left is *Castiarina oblita* (no common name), a jewel beetle species that I had seen on 3 previous occasions. Observations of this species have been made on the Montreal Goldfield, always on Flannel Flowers (*Actinotus helianthi*) which had self-seeded from plantings, and in the Bermagui State Forest on *Ozothamnus diasmifolius* (Sago Flower).

**BELOW** – the three *Castiarina* species I observed for the first time this month **From left to right** - *Castiarina bella* - *Castiarina erythroptera* - *Castiarina australasiae*. None of these beetles have a common name, and all are between 4mm (*C. bella*) and 10 mm (*C. erythroptera* and *C. australasiae*) in length. I have been unable to find any species-specific information about any of these beetles.



**A note on jewel beetle conservation** – The popularity of jewel beetles among insect collectors is outshone only by tropical butterflies. The appeal of these beautiful insects led to their exportation from Australia in such large numbers that, in 1978, jewel beetles were listed for protection under the WA Wildlife Conservation Act – a first for invertebrates in Australia.

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## SNUG AS BUGS IN RUGS

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Mid-afternoon on a cool, windy and overcast day I happened across this pair of tiny **Sweat Bees (family Halictidae – subgenus *Chilalictus*)** snuggled down together deep inside a dandelion flower. When I went out to check on them about an hour later I saw that, while one bee had stayed inside the same flower, the second bee had moved over onto its own flowers, and that three more bees had arrived to take up a spot on other dandelion flower heads nearby. A final check on the bees at about 5 p.m. revealed something marvellous and quite ingenious. As the dandelion flowers had closed up at the end of the day each bee had aligned itself on its respective flower, head down and bum up, so the petals completely wrapped around the insect like a bright yellow blanket. So tightly enclosed were the bees that the only part of them that was visible were their little bee bottoms. What a wonderful way to stay safe and warm! Who knew that dandelions were perfect beds for



bees?! This observation has given me yet another reason *not* to mow my yard .... I am not being lazy, I am being mindful! The next morning, coffee cup in hand, I went out to check again the bees. Three had already left to go about their daily business and one was resting on the side of its flower. The fifth bee was a sleepy head and still wrapped up in its little bed but it did eventually wriggle out backwards from its blanket to bask in the sunshine. Needless to say, I now check nearly every dandelion flower I walk past in case there is a wee little bee tucked up inside.

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## SPIDERS

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As promised .... or forewarned depending on your level of affection for them .... here are the two very special spiders that I had the pleasure of encountering this month. The first is a male peacock spider - *Maratus volans* (**Flying Peacock Spider**). With a body length of just 5 mm this spider is tiny, and was jumping about in leaf litter. I took the photo shown here when he perched briefly atop a small, fallen stick so that he could better survey the surrounding area for nearby females. Neither he nor I found any on this occasion so that search for both of us continues.



Although I had intentionally gone out to look for peacock spiders, and particularly the males, in the Bermagui State I had not held much hope for success. No-one was more surprised than me when I hit arachnid gold! Robert Raven, senior curator and arachnologist at the Qld Museum, commented of my good future “Congratulations! Some people have looked for them for 40 years and failed.” and then went on to lament the fact that he was 3 weeks into a 4 week stint in WA (a peacock spider hot spot) and had not yet found a single one. I had to concur that the search for these tiny but oh-so-beautiful spiders was “like looking for a needle in a haystack.” We both agreed that patience, persistence and a lot of time spent staring at leaf litter seemed to be key in the search for them.

Originally known as *Salticus volans*, the spider shown here is one of the first two peacock spider species to be named (the other is *Salticus speciosus* - the Coastal Peacock Spider) Both were named in 1874 by the British arachnologist Oktavius Pickard-Cambridge. Why did Pickard-Cambridge use the latin “*volans*” which means “flying” when naming this spider? Because Sydney-based arachnologist H.H.B. Bradley sent him several

specimens from Australia with a note stating that “this spider has a flap” and that “he had observed the spider elevating and depressing these flaps, using them as wings or supporters to sustain the length of their leaps, similar to a flying squirrel.” Pickard-Cambridge believed the story and called the spider the “flying spider”. Of course, we now know that the male flaps are *not* used for flying but for the flamboyant courtship displays that peacock spiders are named and famed for. The Flying Peacock Spider was reassigned from *Salticus* to the *Maratus* genus in 1991 with the Coastal Peacock Spider following suit in 2012

Peacock spiders belong to the **Salticidae (Jumping Spider)** family and I’m sure most if not all of you have heard about these fabulous little spiders, and watched at least one YouTube video of the male spiders’ flashy, and highly entertaining dance routines as they try to woo a mate. If you haven’t, you really should. I’d suggest the BBC’s “Peacock spiders, dance for your life” and Jürgen Otto’s “Peacock Spider 1 (*Maratus volans*)” which features the Flying Peacock Spider shown above and is believed to be the first recorded footage of a peacock spider’s courtship display.

I found the second spider well outside my usual stomping ground when I attended a BVSC/Atlas of Life run “Life in our Cemeteries” event at Rocky Hall. This spider – a **Southern Prowling Spider (*Miturga agelenina*)** – was sharing space with a Sutherland’s Funnelweb Spider (*Atrax sutherlandi*) underneath a large piece of fallen



timber and, with a body length of approx. 20 mm, was much bigger than the tiny peacock spider I had found earlier in the month. The Southern Prowling Spider belongs in the **Miturgidae (Prowling Spider)** family. Although the spiders in this family look superficially similar to, and are often mistaken for, wolf spiders (family Lycosidae) the two families are not closely related. On iNaturalist there are only 17 observations of this species, none of which are in NSW. The Atlas of Living Australia (ALA) has 75 records of the species, only 4 of which are in NSW. All 4 of these NSW records are preserved museum specimens. So far as I can ascertain, the photo taken at Rocky Hall and shown here is the only photograph of a live specimen in NSW. What an exciting find!

Because I mentioned the “f” word – funnelweb – I shall finish up this month with a few words about the spider that was cohabitating with the Southern Prowling Spider underneath a piece of timber. The **Sutherland’s Funnelweb Spider (*Atrax sutherlandi*)** is the only funnelweb spider found on the NSW far south coast. The spider is named after Struan Sutherland, an Australian medical researcher whose work in 1980 resulted in a successful funnelweb spider antivenom. Unlike its close and much feared relative the Sydney Funnelweb Spider (*Atrax robustus*) which is often encountered in urban areas, the Sutherland’s Funnelweb usually resides in forested or remote areas and is far less likely to be stumbled upon. Male funnelweb spiders wander of a night during the warmer months in search of the females. The females however rarely wander, and remain in their burrows almost indefinitely. I have encountered this spider several times, sometimes by chance and sometimes when I have been looking for them. On all occasions, the spiders were under fallen timber and in forest well away from human habitation, and I have never seen one wandering. I have also never had one jump at me, run at me or do anything else other than sit quietly and wait for me to leave. I like to think it’s a matter of mutual respect .... if I pose no threat then it has no reason to become defensive.

Until next month, be kind to each other and the environment, *Deb* (deb\_taylor142@hotmail.com)