ANGAIR QUARTERLY

Spring 2021

BRINGING YOU STORIES FROM THE ANGLESEA, AIREYS INLET SOCIETY FOR THE PROTECTION OF FLORA AND FAUNA

Welcome to the spring edition of the Angair Quarterly. It's the perfect season to launch our new look. The bush is full of colour and the weather is improving. Look inside for detailed descriptions of the local flowers, fungi, birds and insects we can see right now somewhere nearby.

WHAT'S INSIDE:

ANGAIR Inc.

ANGAIR QUARTERLY

Spring 2021

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A PARADOXICAL POSTER PLANT

Sally White

The reputation of the poster flower for this year's cancelled Wildflower & Art Weekend is writ large in its botanical name: *Acacia paradoxa*. The Greek para meaning 'contrary to' and doxa meaning 'opinion' pretty well sums up people's conflicting reactions to this tough, compact acacia whose prickly foliage contrasts with the glorious golden fluorescence which occurs mainly at the end of the wattle-flowering season in the Surf Coast.

Many people dislike the plant because of its thorny and sometimes scrubby habit while others—especially bird lovers—like it because its apparently impenetrable prickliness creates a haven for small birds and other tiny creatures.
It makes a fine hedge or screening plant, can be used for erosion control and, like all acacias, improves soil by fixing nitrogen.

It masquerades under a variety of common names. We call it Hedge Wattle but others call it Acacia Hedge, Prickly Wattle, Kangaroo Thorn and Kangaroo Acacia.
These last two names may well reflect the fact that the French explorer and naturalist Nicolas Baudin collected specimens in the summer of 1803 in South Australia's Kangaroo Island. It was not formally described until 10 years later by the Swiss botanist Augustin Pyramus de Candolle.

The Hedge Wattle grows in all mainland states and has been introduced and naturalised in Tasmania. It is widespread throughout much of Victoria but absent in the north-west and far east. Its morphology can vary considerably depending on where it grows. Plants can be scrubby or compact. Smaller details can differ: for example, the edges of the phyllodes of our local plants are frilly but in other places they may be virtually straight. The species hybridises fairly easily. Although these hybrids have been recorded, little research has been done on them.

VicFlora, the official website of the Victorian Royal Botanic Gardens, says *A. paradoxa* has been declared a noxious plant in some parts of the state but, oddly, its name does not appear in either the Arthur Rylah Institute's Advisory list of environmental weeks in Victoria of 2018 or Agriculture Victoria's 2017 list of declared noxious weeds. So it is a puzzle as well as a paradox.

Visit the 2021 Angair online Nature Show

www.angairnatureshow.org.au

THE KINGDOM OF FUNGI AND LIFE ON EARTH

Rob Shepherd

Fungi are essential to life on earth. Rob Shepherd tells us why…

While the plant and animal kingdoms dominate our knowledge of life on earth, other kingdoms play critical roles in the web of life. Fungi form the largest and most diverse of these kingdoms with an estimated 3-5 million species of which only 140,000 have been identified to date. Fungi provide us with the pleasures of blue cheese, bread, wine and beer; they are the source of lifesaving medicines including antibiotics; they service the biotechnology industry in the production of vitamins and enzymes. fungi Fungi, however, also result in widespread animal and plant diseases including tinea, potato blight and plant rusts. Significantly, fungi played a critical role in the evolution of land-based plants and hence all terrestrial animal life - including us!

Mycelium networks

While plants produce their own source of energy via photosynthesis, fungi, like animals, rely on other organisms for their food source. We have an internal digestive system (our gut), in contrast fungi use a form of external digestion. The bulk of the fungus is underground in the form of the mycelium – a huge network of branching thread-like hyphae. The mycelium of some fungi can extend for kilometres making them by far the largest living organisms in the world. These mycelium networks contact the roots of plants, minerals and decomposing organic matter allowing the hyphae to release enzymes that break down these compounds into nutrients that can be absorbed by both the fungus and their networked plants.

More than 90 per cent of all plants form important symbiotic relationships with fungi:
(i) fungi provide water and nutrients to the plant while receiving sugars in return (mycorrhizae);
(ii) they decompose dead plants and animals to release nutrients to both fungi and plants and to improve soil quality (saprophyte); and (iii) the hyphae of some fungi enter the plant producing enzymes that protect or benefit the host, or example allowing a plant to colonise a more saline environment (endophyte). There are also, as noted above, many fungal associations with plants that are pathogenic in nature.

Below are some of the many fungi morphologies found in the Otway Ranges. More than 600 species have been identified. We typically only view the short-lived fruit body above ground; the most extensive part of the fungus is the subterranean mycelium.

Left-Right: Collared Earth Star, White Punk, Coral Lichen, Emperor Cortinar

The ability of fungi to provide nutrients to plants played a significant role in the evolution of plant life from an aquatic environment to land. Aquatic plants possess a primitive root system – the nutrients on which they rely are already in solution. Such a root system was not capable of sourcing the required nutrients in a terrestrial environment. The key evolutionary development, formed over 450 million years ago, was mycorrhizal symbiosis – the interaction of fungi with plant roots in the terrestrial environment to provide plants with key nutrients for growth and colonisation.

How could you not be captivated with mycology? Fungi are critical to the world in which we live, they're found on every continent including Antarctica, and they exhibit huge variations in morphology - ranging from mushrooms (about 10 per cent of known fungi), to jelly moulds, rusts and smuts, yeasts and lichenised fungi.

Many are highly colourful and some are even bioluminescent – they glow in the dark! But perhaps the most captivating aspect of mycology is the array of names such as: Little Stinker, Lawyer's Wig, Short Stinkhorn, Dog Dropping Hair, Bleeding Tooth Fungus - and my favourite - Dog's Vomit Slime Mould. With another 3 million species to identify and name, mycologists with vivid imaginations are going to have a field day!

References:

ANGAIR, 2014, *Fungi of the Surf Coast Shire.*
https://www.anbg.gov.au/fungi/index.html
https://www.bbc.co.uk/sounds/play/b09r3nwl


Lawyer's Wig


Little Stinker


Dog Dropping Hair


Short Stinkhorn


Dog's Vomit Slime

BUILDING A BOWER

Observing the Satin Bowerbird

Kaye Traynor and Mandy Mitchell-Taverner

The particular conduct of bowerbirds setting them apart from other species is the courting behaviour of the male. The focal point of his display is the bower, a complex structure, which is built specifically to attract a mate.
Of the 18 species of bowerbirds, nine are confined to New Guinea and seven are found in Australia. Only one species, the Satin Bowerbird, *Ptilonorhynchus violaceus,*is found in Victoria. The gregarious nature of this forest dwelling species also brings them into close proximity with populated areas, orchards and gardens where they are not always welcome, however the presence of an active bower in the garden is a delight to any bird observer.

In Australia, three major types of bowers are constructed:

- A 'Stage' which is a simple cleared area on the forest floor decorated with leaves.
- The 'Avenue', two parallel walls of interlaced sticks attached to a woven stick platform, the method employed by Satin Bowerbirds.
- The 'Maypole' consists of sticks built around the base of one or two saplings that can reach several metres in height.

In May this year, a male Satin Bowerbird selected a bower site in Mandy's garden in Anglesea, providing a perfect opportunity to note her observations and document the building of the bower through to its completion. Her observations are as follows:
I first noticed the bower on 24 May. I had been puzzled by strange bird calls – a loud clear and resonant downward call along with chuckling, grinding and buzzing noises – the sound I finally recognised.
A chair on my deck gave me a perfect view into the bower from the back. The platform (stage) at the front was partly hidden by the sticks of the bower and some overhanging branches

The 'Avenue'

The male, splendidly navy blue, was most active around midday when I think he knew the sun caught his plumage beautifully. The birds were most active from 3–21 June but after that they made occasional visits, once or twice daily or every couple of days. When active, there was lots of hopping, bouncing, waving one wing then another, chortling and buzzing by one or more birds.

The female was only fleetingly seen – except one day when she spent 15 minutes or so inspecting and walking inside the bower in both directions and hopping on the platform. In all my observing time I only saw her clearly once, but I was aware she was often perched out of sight above and beside the bower watching her obsessive friend. Was she on her own or were there two females? I was not able to see, though one day three birds were startled and flew away together.

> *the presence of an active bower in the garden is a delight to any bird observer*

I felt sorry for the male, he seemed so obsessed and driven picking up pale yellow-green leaves (lettuce?) and blue bits, picking up, rearranging them, and delicately inserting sticks into both avenue and stage. One day he flew several times to a dead Coast Tea-tree to select and break off sticks. Over the two weeks his platform became quite solid and grew wider as the bower thickened. Some days I saw him pick up a bottle top and lettuce leaf and quite fiercely seem to chase the female away. Other days he would appear to offer items gently towards her. The only natural display objects among the plastic pegs, paper etc he collected, were three rosella tail feathers and a blue flower I had placed nearby.

I rarely saw him toward the end of June. The bower was in good shape and I waited to see what would happen next.

The Community Garden lettuces were ravaged about the beginning of July – I suspected the culprit was here, probably 700-800 m away from the Garden as the crow (bower bird) flies. Then….

One morning in early July the uprights of the bower were completely flattened! We wonder if it was done by another male who was building a bower in Forrest Court a few hundred meters away? 'Our' birds visited and called for a few days after this, then disappeared. Some of the blue objects remained forgotten on the platform - and all is silent.

Male Bowerbird in the bower Image: Margaret Lacey

Decorated with blue

The editorial team loved this article. We would be very interested in receiving more diaries, notes or observations of wildlife in the field. Your contribution could take the form of just a single photo and some explanatory notes or detailed observations over time. Please include photos and send to angair.communication@gmail.com by mid-November in time for the December issue.

Our editorial team has grown for this edition. With the increasingly sophisticated skills needed to put out publications for Angair, Bill and Olivia Clarke and Neville Millen have joined our editorial team as production editors. They join editors Janet Stephens, David Williams and Sally White, In addition, Natalie Utmar is largely responsible for collating contributions and sending out the Angair News every month.

THE CONSERVATION REGULATOR

Peter Forster

The Conservation Regulator is a relatively new organisation created to better manage wildlife conservation issues in Victoria. The Office of the Conservation Regulator (OCR) was established by the Department of Environment, Land, Water and Planning (DELWP) early in 2019 following an Independent Review of Timber Harvesting Regulation in Victoria's public native forests (The Review). The Review and DELWP's Response to the Review were published on 15 March 2019. It has developed a draft statement of regulatory intent that describes how the Conservation Regulator intends to use available regulatory tools to prevent, detect and respond to breaches of the law. Primary legislation (for the Regulator) that protects wildlife includes the Wildlife Act 1975, Wildlife Regulations 2013, Wildlife (Marine Mammal) Regulations 2019, Sustainable Forests (Timber) Act 2004 and the Fauna and Flora Guarantee Act 1988 (threatened wildlife).

There are many threats to wildlife in Victoria including habitat fragmentation and loss, introduced pest plants and animals (cats, foxes, pigs, deer etc), competing land uses (farming, urban and industrial sprawl, major infrastructure developments), wildlife trafficking and other illegal activities, increasing population pressure (including tourism and recreation) and climate change-related events such as catastrophic fires, increasing storm intensity and long-term vegetation changes.

The regulatory approach will include setting standards, informing and educating the public, supporting compliance, monitoring licences, auditing permits/enterprises and enforcing the law. Regulating the use, possession, trade, treatment and control of wildlife is an identified priority regulatory risk as identified by the Conservation Regulator.

The endangered New Holland Mouse

The short-term (one to three year) outcomes for these activities are anticipated to be:

- increased community awareness and understanding of regulations
- Increased community engagement with field staff including proactive information sharing
- Increase in perception that people will be held accountable for illegal activities
- Increased collaboration between co-regulators
- Investigations, monitoring and patrols effectively identify and target high risk locations and activities
- Non-compliance is addressed with appropriate enforcement actions
- Immediate environmental harm is prevented through compliance activities.

Proactive patrols of state forest and coastal areas, including the Surf Coast and hinterland, are regularly conducted by Conservation Regulator officers, with the intention of providing education and guidance to the community on how to comply with relevant laws within the forest and coastal environment. During these patrols, officers are conscious of wildlife-human interactions and address wildlife crime where it is identified.

Community input into this draft Statement of Regulatory Intent for wildlife is welcome. You can provide feedback through the Regulating Victoria's natural environment page on Engage Victoria engage.vic.gov.au by survey or submission, or you can email the Regulator at ocr@delwp.vic.gov.au until 30 August 2021.

A FESTIVAL OF SPRINGTIME ORCHIDS

Margaret MacDonald and Alison Watson

With recent rains and sunny days our spring orchid season is looking promising. Lots of leaves and buds of a variety of orchids are appearing. The early flowering Leopard Orchids, *Diuris pardina,* were observed on 9 August by lucky locals during the sixth COVID lockdown. Since then more are opening and more people are seeing them. Their two or three grass-like leaves are very difficult to find before the bud emerges.

Leopard Orchid

The Leopard Orchid is the first *Diuris* to be seen in August to September, followed later by the Donkey Orchid, *D. orientis*, Golden Moths, *D. chryseopsis*, and the later flowering Tiger Orchid, *D. sulphurea.* The brightly coloured flowers of all these species are eye-catching in the heathlands, grasslands and open forests.

Donkey Orchid

Golden Moths

Tiger Orchid

Many hairy Spider Orchid leaves of varying sizes can be seen now, and we look forward to seeing the first ones flowering soon. Usually the first to flower is the Small Spider Orchid, *Caladenia parva*. Other Spider Orchids will soon follow – Thick-lip Spider Orchids, *C. cardiochila*, the rare Red-lipped Spider, *C. oenochila*, Plain-lip Spider, *C. clavigera*, Mantis Orchid, *C.tentaculata*, and the majestic Large White Spider Orchid, *C. venusta*. We are always on the lookout for Robust Spider Orchid, *C. valida,* which is listed on the Flora and Fauna Guarantee Act as critically endangered. We have not seen it in flower for many years now. The finger-type Caladenias to be seen from Setember to November include Pink Fingers, *C. carnea*, Musky Caladenia, *C. moschata*, Tiny Caladenia, *C. pusilla*, Angahook Fingers, *C. maritima,* and Eastern Bronze Caladenia, *C. transitoria*. The larger Pink Fairies, *C. latifolia*, may be seen in coastal areas.

Small Spider Orchid

Large White Spider Orchid

Large Pointed Greenhood

We were excited to once again find the Large Pointed Greenhood, *Pterostylis* x *ingens*, flowering again this year in early August amongst a colony of Nodding Greenhoods. It is a hybrid between Nodding Greenhood, *P. nutans*, and Sickle Greenhood, *P. falcata*.

Mayfly Orchids, *Acianthus caudatus*, are just unfurling their buds now with their delicate fine long sepals. They can form large colonies with many flowers appearing. Of course we expect to see carpets of Waxlips, *Glossodia major*, and there are certainly lots of Waxlip leaves appearing in all our bushland areas.

Sun Orchid leaves can also be seen now. The first of the Sun orchids to flower is Rabbit Ears, *Thelymitra antennifera,* in September. Look out for the first hot day in October and you may be treated to a festival of colour as the other species of Sun Orchids that grow throughout the district may show their brightly coloured flowers.

Flying Ducks, *Caleana major*, and Small Ducks, *C. minor*, are always exciting to see with their duck-like flowers. The leaves can be seen at the moment in gravel-pit areas but it is usually late spring before the flowers appear.

Large Flying Duck Orchid

Large Plumed Greenhood

The Bearded Greenhoods will also be on display during spring. Our endemic Large Plumed Greenhood, *Pterostylis unicornis*, from September to October and the smaller Southern Bearded Greenhood,
P. tasmanica, October to November.

Keep your eyes on the burnt areas and who knows what you will find. Red Beaks, *Pyrorchis nigricans*, Hare Orchids, *Leptoceras menziesii*, and Leek Orchids, *Prasophyllum* sp., all flower spectacularly after fire.

Red Beaks

These are just some of the orchids to be seen in the next few months, so please let us know if you find something special.
We appreciate your support and it is so important to record all sightings.

Alison Watson alisonw577@gmail.com
Margaret MacDonald margmacmoggs@icloud.com

All of our orchids are documented and photographed in *Orchids of the Anglesea District* available from Angair.

THE BIRDS OF SERENDIP

Ellinor Campbell

The COVID and weather gods combined to give us perfect conditions for our August bird walk – our first walk outside the Surf Coast for nearly two years. Our destination was the wonderful Serendip Wildlife Sanctuary at Lara, where 150 bird species have been recorded. We were looking forward to seeing many species that are rare, or non-existent, on the Surf Coast.

Firstly White-winged Choughs which are always an entertaining sight with their group dynamics, plus scores of active, but hard to see, White-plumed Honeyeaters. We appreciated having a close sighting of a Whistling Kite, and were able to make comparisons with soaring Black Kites and distant Wedge-tailed Eagles.

Many of the rarer birds were in enclosures, but what a treat it was to be able to see them close up. These included Masked Owl, Freckled Duck, Blue-faced Honeyeater, Bush Stone-curlew, Australian Bustard, Brolga, and Tawny Frogmouth, plus many roaming Emus. Unfortunately we were not able to include any of these on our official list of 40 wild bird species, such as the Little Pied Cormorant.

Australian Bustard

Whistling Kite

Tawny Frogmouth

Little Pied Cormorant

We were most fortunate to run into the Animal Ranger, one of six Parks Victoria rangers who have to cover an enormous district including the Bellarine, as environmental funding is always such a low priority. He turned out to be a mine of information, including why the reptile enclosure next to us was empty. This was due to mice killing them – I will spare you the grisly details.

We had wondered whether we could include on our list the many Magpie and Cape Barren Geese. The latter were clearly breeding well, with a pair even finding their way into an almost enclosed, empty aviary. He said that the the reason they love the enclosures is because of a plentiful supply of food, and safety from predators. There is currently a master plan for Serendip and the You Yangs, with feedback having closed. The infrastructure in the sanctuary is deteriorating, and some 'show' species, such as clipped-winged Musk and Blue-billed Duck, have died and not been replaced.

A decision also needs to be made about a lone male Brolga – whether he might go to Healesville to mate with their lone female, or vice versa.

Water could also be an issue as the lake which is usually full this time of year was totally dry, and had large bushes growing in it. Fortunately there has been big response with thousands signing a petition and hundreds of submissions, so there is hope that it will be further developed for education and wild life viewing.

SPRING FLORA

Ellinor Campbell

Spring is here and our bush is being transformed into a sea of colour. The stalwart winter flowers have now been joined by the early spring flowers with their colours and wonderful aromas. When walking along the clifftop pathway at Aireys Inlet I am almost overcome by the sweet smell from the small yellow flowers on the Bower Spinach, *Tetragonia implexicoma,* especially at Lands End. The long, flexible branches with fleshy leaves drape attractively over the vegetation.

Bower Spinach

Silky Guinea Flower

In the heathlands **yellow** is the dominant colour. In the upper storey below the green of the gums, it is provided by an increasing range of wattles in flower. Below these are the abundant bright gold of guinea-flowers. At Teds Track it is mostly the Silky, *Hibbertia servica* var. *sericea*, which is the guinea-flower with the largest flowers. Interspersed are bright splashes of orange from low bushes of parrot-peas, the Grey, *Dillwynia cinarascens*, and the Showy, *D.sericea* sub.I. They have short rolled leaves, and wing-like back petals which help to distinguish them from the many other more closed pea flowers.

In our district there are 16 pea flower, or egg and bacon, groups – such a challenge to identify! At night my bedtime routine is often helped by reciting the list in alphabetical order. It beats counting sheep! At Teds Track there is also the salmon hue of the glorious pea flowers of Leafless Bitter-pea, *Daviesia brevifolia*, a short flowering beauty. The flowers really stand out on the usually bare, stark, sculptural branches.

Grey Parrot-pea

Leafless Bitter-pea

Next is **white**, often from the massed tiny, fluffy-edged flowers of the Common Beard-heath, which I wrote about last month. These have now been joined by the papery daisy flowers with yellow centres of Blunt Everlasting, *Argentipallium obtusifolium*. The leaves are not a feature, being narrow and sparse. Also in the spring intake are erect spikes of the creamy-white, evocatively named Creamy Candles, *Stackhousia monogyna*. A less obvious white is provided by the single flowers on a children's favourite, the parasitic sundews. Fraser Avenue has masses of the Tall Sundew, *Drosera auriculata,* with slightly shield-shaped leaves, and the Climbing Sundew, *D.macrantha* subsp.*macrantha,* with rounder and redder leaves. Get out your magnifier and check out the tiny insects caught on the sticky leaf hairs. Charles Darwin was inspired to do just that!

above: Tall Sundew; top r. Blunt Everlasting; bottom r. Creamy Candles

Patches of **pink** have arrived with Pink Bells, *Tetratheca ciliata*, erect herbs with delightful dangling bell-shaped flowers. This is a most frustrating plant to photograph, as an appealing feature is the black anthers in the centre of the flower which give rise to another common name Black-eyed Susan. Then at ground level there is the fire-engine red of Running Postman, *Kennedia prostrata*, with the eye-catching pea plants on long trailing wiry stems.

Running Postman

Finally there is the best colour of all…**blue.** Last month I wrote about hovea, but this now has an even more appealing rival in Love Creeper, *Comospermum volubile*, what a name! This usually invisible creeper is worth a close look as it spirals up and around low plants, displaying its tiny blue pea flowers.

Love Creeper

There is so much to see, and this is just the beginning. When out and about be sure to carry your ***Flowers of Anglesea and Aireys Inlet*** while you enjoy the sights and smells of spring.

A World at My Feet

Sorry your trip is off – no Eiffel Tower or London-town
We all do what we can when life gets us down
Here on the coast I do with walks near the sea
The lighthouse, tall, white and clean; the waves breaking free
Clouds like sailing ships, sloping inland on a tack
Casting shadows through the bush along a sandy track

Running Postman, red blaze through bush litter
Spidery Clematis scrambling high to prove it's fitter
Hibbertia flowers, golden nuggets glowing bright
A Bristle bird cocks its head, then disappears from sight
Rare and secretive, like many an orchid's face
The Donkey Orchid – full of hope and upright grace

In the hills beyond my home, I ramble in misty weather
Thoughts come of Robbie Burns, wandering among the heather
Here there are grasstrees, ancient sentinels – tall and bold
Around their sturdy feet, canopies of wildflowers unfold
Egg and Bacon plants – red, brown and yellow of every hue
Creamy Candles in swathes mixed with Hovea, mauve-blue

Further down the slope a mystical world of moss and fern
In times of COVID torpor, it's these lands for which I yearn
The small lands of nature, here at my feet, silent and content
Lands that move me more than any far-flung continent.

Neville Millen

TRIGGERPLANTS
The Magic of Cross Pollination

John van Rhijn; Photograpy John Lenagan

The Stylidaceae family of grass-like plants uses a unique and effective mechanism to ensure cross pollination. The Grass Triggerplant, *Stylidium graminifolium,* and the Common Triggerplant, *Stylidium armeria* subsp. *armeria* are found growing in the greater Otways, as well as the other eastern states of Australia. They are regarded as being carnivorous or at least protocarnivorous: that is, capable of absorbing nutrients from insects trapped by a sticky mucilage found underneath the flowers or on the flower stem.

The inflorescence of the Grass Triggerplant consists of pale or bright pink butterfly-shaped flowers, appearing as four petals, usually arranged in pairs. The flowers are botanically tubular with five spreading lobes, one being inconspicuous. The filaments of the two stamens are united with the style, forming a sensitive column. The anthers are attached at the top of the column, with the brush-like stigma positioned between them.

Various positions of 'triggers' on a Grass Triggerplant

When an insect, in its search for nectar, touches the base of the column, the column springs across and secures the insect. In the struggle to free itself, the insect removes some of the pollen from the anthers, which it can then transfer to other flowers. This transfer may result in successful cross pollination. The column mechanism is triggered by the difference in pressure when the insect lands on the flower which causes a physiological change that propels the column towards the insect.

Efficiently quick, it takes 15 milliseconds to trigger the column, but a few minutes to half an hour to reset it for another encounter depending on the temperature or species.

Bee Flies (Family Bombilidae) act as Triggerplant pollinators.

This photo shows the long proboscis of the Bee Fly, *Geron* sp. feeding from the nectar of a Grass Triggerplant flower.

One Slender Bee fly seemed to be drinking a little longer than usual when John Lenagan found it had been captured by a Lozenge-shaped Crab Spider waiting to ambush a passerby.

A Lozenge-shaped Crab Spider, *Astralomisidia pilula* and a Slender Bee Fly, *Geron* sp. on a Grass Triggerplant

For a slow motion video of the triggerplant in action go to: gdaywa.com/wildflowers/triggerplants.php

References

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Clarke & H. Lee, *Name That Flower*, Melbourne University Press.

John Lenagan Digital photos and notes

SMALL BEETLES BIG RECYCLERS

John Lenagan

Some of the small, yet vitally important and seldom celebrated, fauna in our local ecosystems are the beetles. It is understandable that these essential invertebrates get barely a glance as there are so many different species and most are secretive or too small to notice. There are thought to be over 15,000 species of beetles in and around the Surf Coast most of which are still undescribed. Many will possibly go extinct before even being named or having their importance understood.

There are so many unique families of beetles all doing different things: pollinating, desiccating foliage, predating, scavenging, and boring timber. They are one of the biggest recyclers in our ecosystems.
Here are just a few to be found in and around the Surf Coast.

Weevils are herbivorous beetles belonging to the superfamily Curculionoidea, known for their elongated snouts. They are usually small – less than 6 mm – although a few of ours can grow to more than 40 mm in length. Out of the 97,000 species of weevils that are known, approximately 2,000 can be found in Eastern Australia. They belong to several families, with most of them in the family Curculionidae (the true weevils). Within the family, Primitive weevils are distinguished by having straight antennae, while true weevils have elbowed (geniculate) antennae.

A weevil's rostrum, or elongated snout, hosts chewing mouthparts instead of the piercing mouthparts that proboscis-possessing insects are known for. The mouthparts are often used to excavate tunnels into plant stems, their leaves and seeds.

Weevils are predominantly out and about from spring to autumn. While they can fly, many prefer to walk about. They are shy and will just stop still or curl into a small bundle until you pass. Local weevils are relatively harmless.

True Weevils with elbowed (geniculate) antennae


Horned Ground


Leaf Crawling


Horse Faced


Elephant


Genus Cryptoplus

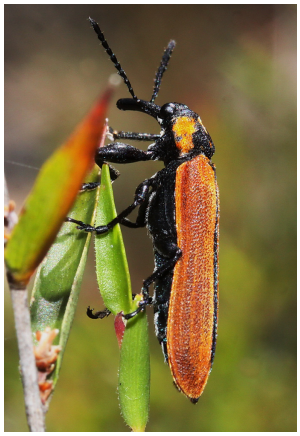

Wattle Pig

Primitive weevils with straight antennae


Snout

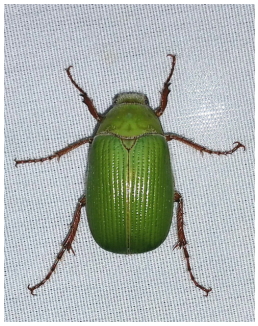

Straight Snout


Sutural Belid


Red

Large Beetles

Scarabaeoidea – The superfamily, Scarabaeoidea, includes the Scarabs, Stag Beetles, Flower Chaffers and allies. They have already started to appear in the Surf Coast and can be found in larger numbers throughout summer. These beetles often come to the lights at night where you can hear them knocking against your windows. They are good pollinators, getting right in amongst the flowering trees and shrubs and laying their eggs in the ground where their grubs feed on organic matter and plant roots until re-emerging in spring and summer.


Xylonichus eucalypti


Spotted Flower Chafer


Cowboy


Christmas


Christmas

Chrysomelidae, another of the beetle families, are one of the most prevalent and destructive. Some species are also known as Gum Leaf Beetles or Tortoise Beetles and are classified in the Chrysomelini Tribe (the taxonomic group above a genus but below a subfamily). Over 50 different Chrysomelid species are found on the Surf Coast. These beetles, relatively small and ponderous, blend into their habitat and are often found on the back of leaves. However, they can lay many eggs and their larvae are voracious leaf eaters staying within their communal groups as they quickly mature. Once fully grown their larvae fall to the ground where they burrow underground and pupate. In a bumper season they can have two cycles and they end up infesting the local trees.

Below are just a few of the Chrysomelid beetles I have found around the Surf Coast. They range in size from 8-15 mm.

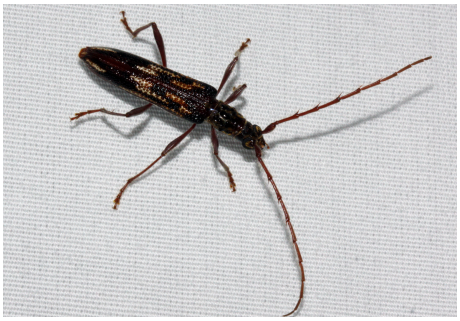
Cerambacidae includes the numerous families of Tree Borers of which my favourite family is the Longicorn Beetles. They are one of the most easily recognised groups of beetles with their long antennae. The worldwide family encompasses over 33,000 species in 5,200 genera. With over 1,400 species classified in 300 genera, this is the sixth largest among the 117 beetle families in Australia.

These beetles are very effective borers drilling into the cadmium bark layer of living trees where they lay their eggs. The grubs feed along the boundary layer between the tree's core and bark layers, where they are in a sense ring- barking branches and sometimes whole trees.

The grubs are quite large and are a key food source for many animals including our larger parrots. You can often see the White-tailed and Sulphur-crested Cockatoos ripping into the dying wattle branches to find their grubs.

While I have photographed some of larger species in the tropics at 150 to 220 mm with mandibles that can deliver formidable bites, our largest is just over 60 mm with many species being much smaller.

Some of the larger Longicorns Beetles to be found in the eucalyptus forests.



Eucalypte Longicorn

Feather Horned

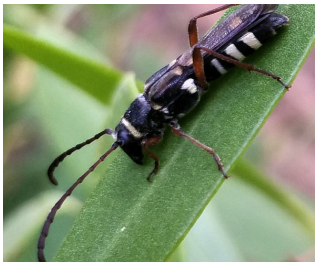
Some of the smaller Longicorns Beetles feed on pollen and are terrific pollinators and some of them lay their eggs in soft tissue shrubs rather than trees.

Flower Longicorn

Brachytria jugosa

Obrida fascialis

Pempsamacra dispersa



Wasp-mimicking Longicorn

Slenderlined Longicorn

Flower Longicorn

REGENERATION DURING LOCKDOWN

Janet Stephens

Heading out to the bush to do a morning's weeding is a great way to start the week, even in winter. Heading out to do some planting though is even better. Strangely, we always get more volunteers on planting days!

Over the past three or four months, punctuated by lockdowns, Angair has helped put almost 3000 plants in the ground in various locations around Anglesea and Aireys Inlet. Planting is ongoing in two areas for which we have received grants – Lot 2 Bambra Road, Aireys Inlet and Fairylands, planting in the open area to the west of the Bowling Club in Anglesea.

Additionally, as you drive through Fairhaven towards Lorne, you may notice some tree guards on the left hand side of the road, just past the Painkalac Bridge. Some years ago, Angair weeders noticed large amounts of Blue Bell Creeper and Flax-leaf Broom growing next to significant saltmarsh and heathland vegetation along the Painkalac Creek, In partnership with Regional Roads Victoria, Angair removed all the weeds from this site and then revegetated it. Initially, it was a much larger planting than you can see now. Some months later, the Strategic Fuel Management Project, whose work is visible all along the Great Ocean Road, took out the plants closest to the road, including a rare plant for the area growing naturally there, Dwarf Silver Wattle, A*cacia nanodealbata.*

In May, we assisted the Department of Environment, Land, Water and Planning (DELWP) get 1700 plants in the ground, near the corner of the Coalmine Road roundabout. You can see these plants as you drive along Camp Road or you could access the site on foot via Pipeline Track which goes off Coalmine Road. The site was long neglected and full of weeds which had to be completely mulched before work started.

It is well worth a look and there are plenty of walking tracks nearby. Sadly, it seems mountain bikers have recently destroyed some of the plants, stakes and guards.

On Monday, 2 August, more than 20 Angair volunteers helped Parks Victoria personnel revegetate an area off Forest Road, near the Barwon Water site. Honeypots Track has been closed completely and is now a forest of tree guards. Again, there are some beautiful walking tracks in the area and the heathland will only become more spectacular as we go into spring.

Planting, Honeypots Track

Our environmental working bees are advertised every month in the Angair News calendar.

Please come along – we welcome newcomers and look forward to seeing you soon.

BANKSIA: THE EARLY COLLECTORS

Neville Millen

Sir Joseph Banks was the most famous botanist in Europe in his lifetime. He used his fortune to send botanical collectors all over the globe to bring back a plethora of new specimens.

It is likely that (Sir) Joseph Banks (1743-1820) collected the first specimen of what came to be known as the genus, *Banksia (serrata)* on the shores of Botany Bay in 1770 when the HMS *Endeavour* anchored there. Banks in 1770 was a 27-year-old 'gentleman', the beneficiary of an immense family inheritance based on extensive properties in Lincolnshire, England.

On his return to England, Banks went on one botanical trip to Iceland after withdrawing from Cook's second voyage in 1772. He never again left England. However, Banks, a self-taught botanist, with only one year of formal study at Oxford, became the most influential scientist of his age for four decades, during which time he was the president of the Royal Society, the world's first independent scientific academy. Banks formed a vital friendship and collaboration with the Swedish botanist, Dr Daniel Solander (1733-82), a protégé of Carl Linnaeus (1707-78), the founder of the first taxonomic system for botanical specimens. Solander undertook the task of cataloguing the 4,000 dried plant specimens from the Endeavour voyage.

Painting of Joseph Banks aged 30 years, wearing Maori flax cape

Banks dedicated vast amounts of his fortune to advance British sciences. His library and herbarium in London at Soho Square became a mecca for botanical scholars from across Europe. Banks had the ear of King George III and he arranged to have botanists and gardeners – under royal orders and often at his own expense – journey to all corners of the known world to gather exotic seeds and bulbs. Live potted plants were transported in plant cabins (which Banks designed) back to Kew Gardens and then to the private garden of the King and the Royal Family.

Robert Brown (1773-1858), was the surgeon/ botanist who accompanied the Flinders expedition of 1801-3 on the HMS *Investigator*. Brown and his gardener-assistant, Peter Good, collected thousands of plants new to science, among these 17 species of banksia at King George III Sound (the present site of Albany, WA). Brown went on to remain in NSW for three years, visit Tasmania, and on return to England became Banks's herbarium librarian, after the death of Jacob Dryander (1748-1810).

The *Banksia* genus was first named in 1782 by Carl Linnaeus, the Younger (1741-1783) in honour of Joseph Banks. In 1810, Robert Brown published the first classification of 31 species of *Banksia*, he called *Banksia verae* ('True Banksias') with characteristic tubular flower spikes. He added another 24 species in 1830 from new discoveries (13 of which were sectioned off to become species of the genus *Dryandra*). Some of the new banksias were dedicated eponymously to early collaborators or collectors of banksia specimens: Brown, Dryander, Solander and Good.

Brown also named species after Archibald Menzies (1754-1842) and William Baxter (1787-1846) for their botanising in Western Australia (WA) in areas that would become Albany and Esperance. George Caley (1770-1829), a collector sent by Banks in 1800 to the colony in New South Wales (NSW) provided Brown with several Eastern species of Banksia in 1803 and was honoured with a WA species. Allan Cunningham (1791-1839) a botanist resident in NSW, who undertook expeditions in the Eastern colonies and the West, was honoured with a species from NSW and finally, the plant artist on the Flinders voyage, Ferdinand Bauer (1760-1826) was honoured with a WA species he had sketched.

Banksia menziesi
native of WA- named after Archibald Menzies

Banksia species live mostly in coastal areas and the surrounding hinterland of sclerophyll forests, shrubby plains, along rivers and in montane areas of Western and Eastern Australia. Only a few live inland where rainfall is low. Banksia vary from prostrate, woody shrubs to large trees. The flowers in most species are arranged in pairs along a long tubular flower spike up to 30-40 cm in length followed by hard fruiting cones. There are 60 species in WA, including the most spectacular, and these were a sensation when first revealed in England and Europe from 1810-40, rivalling the Proteas of South Africa, a plant family both genus share.

Banksia marginata

Family Proteacae, Genus *Banksia* – all species below named by Robert Brown (1830):

Woolly Banksia, *Banksia baueri*, aka 'possum banksia', low shrub, large greyish fluffy flowers.

Birds Nest Banksia, *Banksia baxteri*, medium shrub, yellow-lemon flowers spiked, and deeply serrated leaves.

Feather-leaved Banksia, *Banksia browni,* orange flowers, fine, slender, deep green leaves.

Red Lantern Banksia, *Banksia caleyi*, medium shrub, red pendant flowers contained in greyish serrated foliage.

Hairpin Banksia, *Banksia cunninghami,* (now *Spinulosa* var. *cunninghamii*), erect shrub to 5 m, narrow fine leaves, orange flowers with red to black styles.

Dryander-like Banksia, *Banksia dryandroides*, small shrub, masses of small cones of yellow flowers, fine feathery foliage.

Good's Banksia, *Banksia goodi*, prostrate, wavy grey leaves, rusty-brown flowers.

Firewood Banksia, *Banksia menziesi*, large, gnarled tree, serrated leaves, and large red-pink upright flowers set on distinctive orange collar.

Stirling Range Banksia, *Banksia solandri*, small tree, and large green leaves, large creamy brown flowers, musky odour.

Local species

Coast Banksia, *Banksia integrifolia,* one of the largest of the banksias, variable from shrub to tree, silver underside of leaves, pale yellow flowers.

Silver Banksia, *Banksia marginata*, variable in size (1-12 m), silver underside of dark-green leaves with square tips, greenish yellow flowers.

References

(Current reading for a full appreciation of the influence of Banks on botany in the early 19th century):

Goodman, Jordan, 2020, *Planting the World; Joseph Banks and his collectors-an adventurous history of botany*, William Collins.

Kieza, Grantlee, 2020, *Banks*, ABC Books, Harper Collins (Aust).

CAMPING WEEKEND

With some trepidation, we are planning the Angair camping weekend for 22–24 October. Andrew Taylor and Kylie Rose have offered us camping on their beautiful, unspoiled property in the southern Grampians, about 20 minutes from Dunkeld. It is home to enormous redgums, wetlands, orchids and grasses and is next door to Walker Swamp, currently being reclaimed by a concerned group of local ecologists. Click here to get an idea of the terrain and be sure to watch the video!

Dunkeld and surrounds have plenty of accommodation for those who don't wish to camp.

The usual tried and true procedures are planned: camping is available for two nights from 22–24 October. Friday night dinner will be a BYO curry to share and Saturday night a barbecue (BYO meat with a salad or sweet to share). A walk in the southern Grampians will happen on Saturday and Sunday morning could be spent exploring Andrew and Kylie's property which has a wealth of interesting vegetation.

New members and old are welcome. There will be more details to come next month but please contact Janet to register your interest. We will only go ahead if enough people are keen: stephens.janet@gmail.com

ANGAIR Inc.

Next issue:

Our next issue will be published in December this year and will be the summer edition. We welcome any contributions of local, seasonal or general environmental interest. Send your contributions to angair.communication@gmail.com by mid-November and clearly label them 'for Angair Quarterly'.