

Autumn 2023

Angair Quarterly

Bringing you stories from the Anglesea, Aireys Inlet Society
for the Protection of Flora and Fauna.



White-faced Heron
Image: John Lenagan

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Hooded Plovers' eventful season

Bron Ives

The current breeding season for the Surf Coast Hooded Plovers (August to April) has been eventful – lots of scrapes and egg laying, some chicks, birds abandoning long-held sites and others taking over the territory of neighbouring hoodies. As the season comes to a close, hopes are high that three clutches of chicks and eggs will fledge.



Moggs Creek



Aireys Inlet



Urquhart Bluff



Guvvos

The Moggs hoodies remained on territory throughout winter in 2022 but left in September, only to return two months later. After losing a nest and contending with large summer crowds, they have been intermittent visitors since. This is new behaviour for these birds.

The Aireys birds got off to a good start laying their first eggs between the Inlet and the Mad Max Steps in late August 2022. The nest was lost, as were the following five nests. Volunteers put the losses down to the large numbers of ravens and magpies present on the beach or possibly the fox whose prints were seen in the wet sand and dunes on several mornings. Dog-walkers were fantastic and helped by leashing dogs in the signed areas.

Urquhart Bluff saw its resident Hooded Plovers nest halfway to Hutt Gully. Volunteers haven't seen a nest here for a few years so this sighting was a welcome return. For the first time at this popular dog walking spot a Dog Exclusion Zone was set up by the land managers, Parks Victoria. Community support for the temporary dog-walking inconvenience was overwhelming and volunteers were delighted to see Jeff Kennett and his dog turning right in observance of the exclusion zone. Around hatching time the nest was lost, fresh fox/feral cat tracks were throughout the nesting area. Thankfully the parents survived.

Heading further east up the coast, three hoodies have recently been sighted on a regular basis between Guvvos and The Gulch. One is a bird born at Pt Roadknight in early 2018, another an unbanded adult and the third a juvenile from another area in Victoria.



Juvenile at Gulch

Point Roadknight Twelfth Avenue saw some early activity when the birds that had been resident at the tip of Point Roadknight suddenly up and left to claim the previously successful territory of another pair of hoodies at Twelfth Avenue. Three nests into the season, researchers from Deakin University installed a trial fox deterrent device and motion sensor cameras to track the nest's progress. Sadly the nest was lost to high tides; however, the birds have recently built a new scrape in a slightly more secure location.

The surprise discovery in late January of a nest at the tip of Point Roadknight by Dr Grainne Maguire, Program Leader (Coastal and Wetland Birds) BirdLife Australia, created much excitement, only to be outdone by the sudden appearance of three chicks a week later. Almost all locals and visitors respected the permanent No Dogs Conservation Area with only a few people unwilling to help. The chicks were lost three days later and the parents were visibly distressed. The cause is unknown.

As the season starts to wind down, Red Rocks, Point Addis and the nudist beach at Point Impossible are the only sites with chicks. Parks Victoria and the Great Ocean Road Coast and Parks Authority have put up temporary Dog Exclusion Zones and the land managers and volunteers are keeping an eye on both families. Interestingly, the female bird at Red Rocks has taken up with a new male this season, PJ White. PJ has been floating around the Surf Coast looking for a partner since fledging at Montforts Beach, Blairgowrie, in 2020 – a mere 47 km as the hoodie flies.

The *Friends of the Hooded Plover Surf Coast* warmly welcomes new volunteers, contact Janice Carpenter if interested 0418 375 561.



Juveline at Fairhaven

Images by Bron Ives in line with BirdLife Australia's 'Guidelines for Photographing Beach-nesting Birds' (No chicks no nest photos).

From our Readers...

A Mystery Tangle – spotted in a Castlemaine backyard.

Kirrily Flanagan

If you Google what might be happening in this photo, you'll get multiple answers. They all revolve around war or sex or possibly both. For example, there may be one female underneath that tangle with a bunch of males all fighting to have her or it may simply be territorial aggression. No one actually seems to know.

The Australian Museum website has a bet both ways: It says, 'Don't be surprised if you find several skinks locked in a tangle, holding each other. This may be some form of territorial or mating behaviour.'

<https://australian.museum/learn/animals/reptiles/eastern-water-skink/>



Do any of our readers know?

Amniotic Membranes and the Development of Life on Land.

Rob Shepherd

Life on earth first appeared in an aquatic environment 3.5 billion years ago. Aquatic photosynthetic plants evolved over the following one billion years. This evolution resulted in the Great Oxygenation Event that saw the gradual increase of oxygen levels in both oceans and the atmosphere over hundreds of millions of years to levels capable of supporting complex, multicellular life.

Nearly 30 per cent of the earth's surface is covered by land. As oxygen levels in the atmosphere gradually increased (today, oxygen represents approximately 21 per cent of the earth's atmosphere) and the ozone layer developed to provide protection from harmful ultraviolet light, the potential for advanced life capable of living and reproducing on land became a reality. These changes opened up huge opportunities for emerging terrestrial fauna to evolve, driven in part by the presence of extensive new sources of food in the form of terrestrial plant and insect life. This water-to-land transition occurred mainly during the Devonian period some 419-359 million years ago, although simple forms of primitive insects and millipedes moved onto land before this period.

Fish were the first advanced life form to evolve. They contained a sophisticated central nervous system that included a spinal cord and were therefore the first vertebrates. However, they were restricted to a life entirely in water. There were many significant evolutionary challenges to overcome before vertebrates could adapt to terrestrial life. The ability to breathe via lungs, including the associated neural and muscular networks required to perform such a task (think expanding and contracting the chest to force air in and out of the lungs), was clearly a critical early development. Initially, some early fish developed primitive lungs allowing them to breathe air for short periods while on land before returning to the water. The Australian Lungfish is an extant (surviving) form of these ancient partially air-breathing fish.

While fins and a tail are required for locomotion in water, they are of limited use on land. A dramatic change in body plan was required in the form of the development of limbs and feet necessary for walking on land, with adequate muscle development to support weight out of the water. This water-to-terrestrial change in body plan resulted in the formation of the superclass Tetrapoda, the four-limbed vertebrates (tetra = four; pod = foot) and will be discussed in more detail in a future article.

Tetrapods, including all amphibians, reptiles, dinosaurs (including extant birds), and mammals (including humans) have successfully spread to populate a vast array of terrestrial habitats from dry desert to tropical rainforest, mountain ranges and even the poles. Early tetrapods were semiaquatic, living close to water in much the same way as modern amphibians live now. The reliance of amphibians on water is particularly associated with their reproduction; they spawn their eggs in water where they are fertilised then develop into larvae (tadpoles) that breathe via fish-like gills.



Figure 1. The Australian Lungfish is one of only six extant species in the world representing air-breathing fish. This species, which is restricted to south-eastern Queensland, can live out of water for several days if it is kept moist. It is regarded as a living fossil, representing one of the oldest living vertebrate genera.

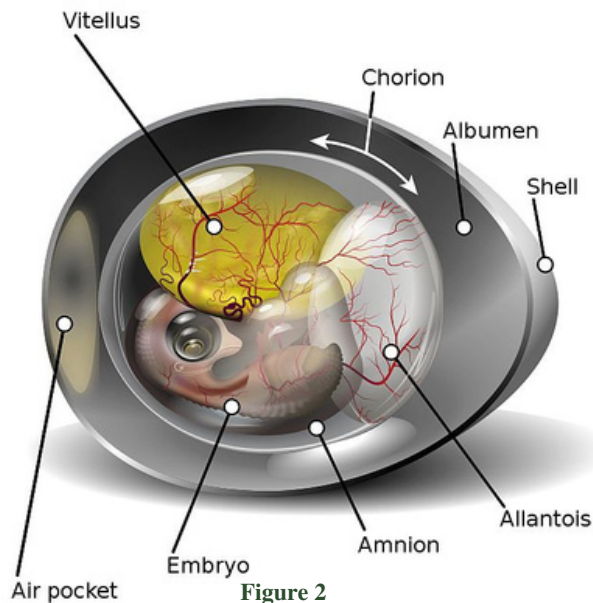
Image:

https://meta.wikimedia.org/wiki/User:Mitch_Ames

During metamorphosis tadpoles develop limbs and the capacity to breathe via lungs. While this form of reproduction limits the range of terrestrial environments that amphibia can occupy, it ensures that the egg and larvae stages of development are not subject to drying out.

Significantly, the remaining tetrapod vertebrates – including reptiles, birds, and mammals – possess an egg equipped with an amnion, a sac containing amniotic fluid. This adaptation protects the fertilised egg and embryo from desiccation. The developing embryo is contained within its own aquatic environment and therefore allows these amniote tetrapods to live and breed in areas remote from water.

The amniotic shell of a bird egg is composed of calcium carbonate and is hard, but fragile, while the shells of reptile eggs are leathery and typically require a moist environment.



Most mammals, except monotremes, do not lay eggs; the embryo grows within the mother's body. However, even with this internal gestation, amniotic membranes are present including the fluid-filled amniotic sac that surrounds the fetus.

Although the eggs of these various amniotic species vary significantly, they all allow retention of water, provide protection for the developing embryo, are permeable enough to allow for the exchange of carbon dioxide and oxygen, and contain membranes that allow the removal of metabolic waste products. Avian and reptilian eggs contain albumin, or egg white, to provide the embryo with water and protein, and egg yolk that provides its energy requirements. In placental mammals the metabolic demands and waste removal requirements of the embryo are supported via a direct interface with the mother's circulatory system through the placenta and umbilical cord.

Figure 2: Diagram of a chicken egg on its ninth day. The structure of the fully sealed egg protects the embryo from desiccation while providing nutrients and metabolites for growth and a mechanism to store or remove waste products. The Allantois is the avian equivalent of the placenta in mammals and provides a source of oxygen and a reservoir for waste products. The Chorion is the outermost membrane around the embryo. The Vitellus contains the egg yolk.

Image:

<https://commons.wikimedia.org/w/index.php?curid=59073031>

Unlike amphibians, amniote tetrapods are characterised by the presence of a shelled egg, keratinised skin (to reduce water loss through the skin), claws and costal, or rib-based, ventilation of the lungs. Amniotes do not exhibit a larval or tadpole stage of development, and can therefore be terrestrial for their entire life cycle. This enables successful population of a vast array of terrestrial habitats as exemplified by the fact that the human population recently reached eight billion!

References and further reading:

<https://www.geol.umd.edu/~tholtz/G104/lectures/104land.html>

<https://en.wikipedia.org/wiki/Amniote>

https://www.mun.ca/biology/scarr/Amniotic_egg.html

<https://courses.lumenlearning.com/suny-wmopen-biology2/chapter/amniotes/> Shubin, N. *Your Inner Fish*, Vintage Press, 2009.

Autumn Orchids

Margaret MacDonald and Alison Watson

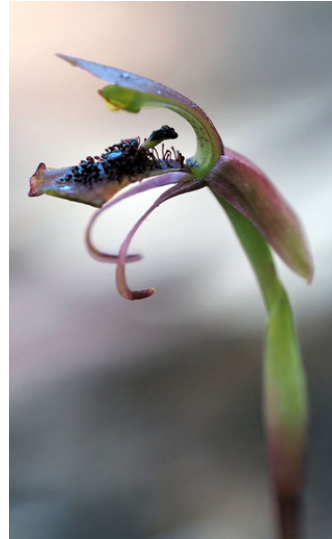
On 10 February, the first flowering Autumn Wasp Orchids, *Chiloglottis curviclavia*, appeared. We were looking for their tiny, paired leaves and suddenly, there they were, fully formed, perfect dainty flowers. These were early specimens, and with a little rain we expect many more leaves and hopefully some more flowers to appear. We were pleased to find two buds of the Sharp Midge Orchid, *Corunastylis despectans*, on No. 2 Rd on 13 February. They were so tiny that we surprised ourselves that we managed to discover them. Other Midge Orchids – Fringed Midge Orchids, *C. ciliata*, and Bearded Midge Orchids, *C. morrissii* – should also be starting to appear.

Midge orchids are all difficult to see as they are tiny and hidden amongst the grasses but are worth looking for the detail of their tiny flowers.

This is also the time to start looking for Parson's Bands, *Eriochilis cucullatus*, in forest, woodland and heathland areas. Look out for the tiny splash of white of their lateral sepals standing out against the surrounding vegetation. They are delicately perfumed with the nectar attracting native bees. Occasionally pale pink flowers may also be seen.

The first of the Greenhoods should be starting to appear in the next few weeks: Tiny Greenhoods, *Pterostylis parviflora*, and Brown-tipped Greenhoods, *P. clivosa*. The small rosettes develop beside the slender stems at flowering time.

Later in April, Fringed Hare Orchids, *Leporella fimbriata*, should start to flower and Mosquito Orchids, *Acianthus pusillus*, will be producing their heart-shaped leaves.



Autumn Wasp Orchid



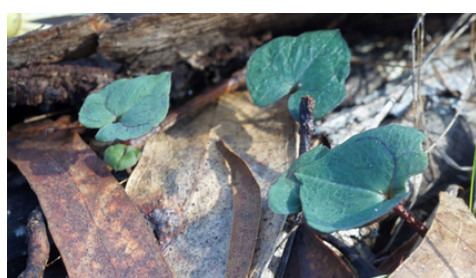
Sharp Midge Orchid



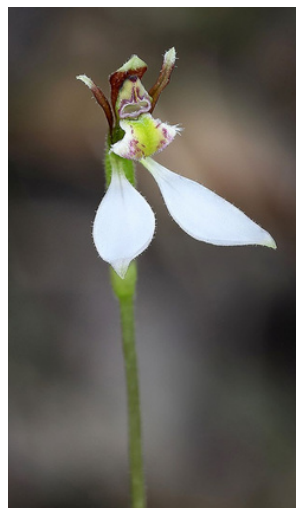
Fringed Midge Orchid



Bearded Midge Orchid



Acianthus pusillus leaves



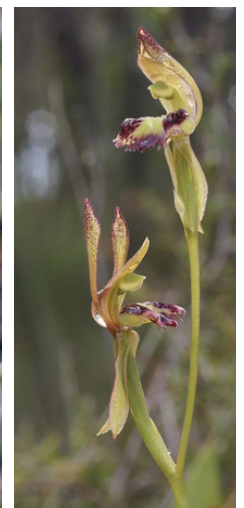
Parson's Bands



Tiny Greenhood



Brown-tipped Greenhood



Fringed Hare Orchid

We are hopeful for some autumn rain to help all our orchids. Despite all the rain we had in 2022 the bushland appears very dry at present. One wonders just how these fragile flowers push their way up through the compacted soil.

We hope you are enjoying your orchid experiences. It is so much more challenging at this time of the year apart from a few colourful Hyacinth Orchids, *Dipodium roseum*, that are still brightening up the bush.

We also hope you are enjoying your copy of the new edition of *Orchids of the Anglesea District*.

So many people have told us they are really enjoying using it. Please make sure you let us know of any unusual sightings you have. This is how we keep a complete record of orchids in the district.

All of our orchids are documented and photographed in the new edition which is available from the Angair office (Monday and Thursday mornings), at the Anglesea Newsagency, Great Escape Books in Aireys Inlet and online from www.angair.org.au

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

The Pincushion Soldiers

Neville Millen

There's a patch in Aireys few know where
Blue Pincushions wave on fragrant air
Three hundred heads pushed up and grew
Thin, straight soldiers in light blue.
They are on parade out here again
Through spring, sun and summer rain
Their splendour soon cut short I fear
By men and machines that rip and clear
No hope of saving the pincushion soldiers
I plead, but the slasher shrugs his shoulders
I thought to build them a scattered rock fort
But I'm afraid of damage and being caught
Now wasted florets on the ground to behold
Yet the pincushions will rise again – ever bold
Their floral parade a sight to admire
Sad sacrifice to human fear of fire.



Blue Pincushion *Brunonia australis*
Image: Ellinor Campbell

Not another mouth to feed!

Rob Howden
Images John Lenagan

It was 16 November last year when we noticed two White-faced Herons placing twigs together in the outer branches of a huge Manna Gum which overhangs our carport. The tree is close to the house and we had an excellent view of their activities from several windows.

One bird seemed to have charge of the actual nest construction while the other kept supplying it with very small twigs collected from nearby.

Over the next few days, a twiggy platform appeared with the birds making continual adjustments to the twig placement. The nest was quite small when compared to the size of the herons, and not particularly substantial.

Six days later we thought we could see teal-coloured eggs through the twigs. (Google informed us the Herons lay two to five eggs that take 24-26 days to hatch.)

The birds took turns to sit on the nest and, as far as we could observe, the eggs were never left unattended. During this period, from time to time another twig or two was added to the nest.

We thought we could see two eggs through the twigs when the birds were briefly off the nest. The nest was relatively low in the tree but still above the first-floor windows of the house hence we were unable to look down into the nest.



White-faced Heron



Perched on a bough

The adults continued to share sitting on the nest but one (or the other) was now returning to the nest, regurgitating food and feeding the unseen chicks.

On 28 December we finally caught a glimpse of at least two chicks with spiky heads and large beaks. As the chicks were becoming quite large the adults were spending more time off the nest but remained never further than a branch away (back to Google, 40 days from hatching to leaving the nest. That was going to take us towards the end of January).

By 5 January we had identified three chicks, then the next day four and they were growing at a rate. The adults were both away at the same time leaving the chicks on their own and returning to provide a feeding frenzy. At night at least one of the adults was sitting on the nest but it was difficult to imagine how the now large chicks were managing to find a place in the insubstantial nest.

By 11 January we had now clearly established five chicks. They were now regularly standing out of the nest waiting to be fed. We could often hear the calls and bird noises when one of the adults returned and observed the feeding frenzy.

As the chicks grew, they moved further from the nest but still within the same tree. At this stage of their development, it was clear the adults had selected this tree for a reason. The large open expanse of canopy allowed the chicks to move out from the nest and exercise their wings by jumping from branch to branch.

The adults were still feeding the chicks but would challenge them by standing off some distance so that the chicks had to flap from branch to branch to get fed.

By 20 January (day 32) the chicks were no longer returning to the nest at night, sleeping perched on a bough, often grouped together.

On 26 January some of the chicks left the tree and returned later in the day. One was observed crashing into a nearby tree and, unable to get a purchase it flew to another tree nearby. The previous day, on several occasions, an adult was observed flying to the tree, waiting on a bough as the chicks fluttered near and flying off without providing food. Our neighbour (Day 38) reported the chicks roosting in a tree in his property and for the following week or so some of the chicks were seen in nearby trees or on TV aerials.

Congratulations to the adult heron pair in successfully raising five chicks to maturity.



Regularly standing out of nest



A feeding frenzy

Clarkesdale Bird Sanctuary

Marie Pirotta

Late last year the Angair bird outing was to the Clarkesdale Bird Sanctuary. One of the more interesting aspects of the visit was the history of the sanctuary itself. BirdLife Australia jointly owns and manages the Clarkesdale Bird Sanctuary in Linton in partnership with Trust for Nature and Parks Victoria.

Recognising the impact that extensive land clearing in the region was having on bird populations and notably the mistletoe specialists, like Regent Honeyeaters, keen birder and local Linton farmer Gordon Clarke bought 27 hectares of Plains Grassy Woodland, Valley Grassy Forest and Creekline Herb-rich Vegetation in 1968 to prevent any further clearing and instead created a bird sanctuary. In 1976, he donated this block and several others to BirdLife Australia (then known as BOCA or the Bird Observers Club of Australia) for management as a bird sanctuary. He continued to buy more adjoining properties, eventually donating a total of 265 ha to ensure their protection in perpetuity. In 1980 a further 270 ha of the adjacent Linton State Forest became part of the sanctuary, effectively doubling its size, to be managed under Parks Victoria.

Mr Clarke's vision was 'to optimise, manage and create habitat at Linton to increase the diversity and population of native birds in perpetuity', a vision that is still consistent with sanctuary management. The sanctuary inherently had many key habitat elements in abundance: large hollow-bearing trees, standing dead trees, coarse woody debris, leaf litter, water bodies (including the Springdallah Creek and more than 30 dams), diverse vegetation communities and mistletoe.

The property is a beautiful and peaceful place to spend time. The sanctuary is also a haven for local flora. One hundred and sixty native birds have been recorded at the sanctuary, along with 350+ indigenous species of plants, including more than 50 orchids. Lists are available on the BirdLife Australia website:

<https://birdlife.org.au/places/clarkesdale-bird-sanctuary/>

Please contact BirdLife Australia's sanctuary coordinator for more information if you would like to visit the sanctuary: emily.noble@birdlife.org.au

Some of the birds found at Clarkesdale Sanctuary



Pallid Cuckoo
Image: Jordan Ayton



Rufous Whistler
Image: Jordan Ayton



Grey Goshawk
Image: Margaret Lacey



Red-rumped Parrot
Image: Jordan Ayton

Angair remembers Joyce Wright

Ros Gibson



Joyce Wright and the *Hands Sculpture* in Anglesea

Joyce was born in Greenwich SE London in 1927. She and her husband Fred and two children emigrated from Britain in 1952.

Joyce and Fred built their house in Anglesea and retired there in 1974 and soon became actively involved in conservation. Their neighbours suggested joining Angair and they immediately discovered that Boneseed was a weed. Joyce became an enthusiastic regular at Angair working bees and continued to weed the bush for many years. Through these activities, and in fine or foul weather, she developed a love of nature in all its aspects. Although the war interrupted Joyce's education, she'd learnt to touch-type and write shorthand and her secretarial and organisational skills were to prove a great boon to Angair.

Joyce assisted Fred in his role as Angair Secretary (1989-1990). Angair didn't have a computer then and Joyce re-typed the updated membership list each year. She continued either officially or unofficially assisting Secretaries who followed, collecting the mail from the Post Office and spending a great deal of time in the Angair office organising documents and setting up and maintaining the filing system.

Joyce was involved in many other Angair activities too. She thoroughly enjoyed all the varied duties she took on for Angair.

They ranged from weeding, to arranging and catering for Annual Angair Dinners, to ordering the pizzas for the post Wildflower Show get-togethers, to helping maintain the front garden at the Angair Office and the list goes on ...Joyce spent many hours trawling through the minutes of Angair Committee of Management meetings to prepare the first edition of a booklet listing Angair's Achievements. Copies were on the tables at Angair's 30th Dinner at the 'The Southern Rose' and proved a real talking point – for both old and new members.

Joyce believed Angair's success has been due to the work of so many people who have been prepared to assist with the wide variety of Angair's undertakings. She had special respect for Edith Lawn who led the small group responsible for Angair's inception and for Mary White who dedicated her retirement years and a great deal of money to the protection of the local environment. Joyce regarded the saving of the O'Donohue land from development and its subsequent return to public ownership as Angair's most significant achievement, and felt proud to have been part of it.

Joyce particularly valued the lasting friendships she made through her involvement with Angair. Following Fred's death in 2007, Joyce continued in her unofficial role as 'Office Manager' until she moved to a retirement village near Torquay in 2010. Her departure left a gap in Angair's day-to-day organisation that proved difficult to fill.

Joyce's contributions to Angair have been many and varied and were formally recognised when she was elected to Honorary Life Membership of the Society in 2008. Her citation reads: The Committee of Management of Angair has elected Joyce Olive Wright Honorary Life Member for her careful, tireless work with the administration of Angair and her support of its aims for 34 years.

Joyce died on 2 December 2022.

Seeds

Wendy Cook

(Reproduced with permission from the Geelong Naturalist March 2022)

Tiny irregular specks of brown, each a millimetre in length, fall from a tree. Each is a seed, and each has the potential to germinate and grow into a huge gum tree, which could live for hundreds of years. Inside each brown speck is a baby plant, waiting to grow. After the gum tree's flowers were pollinated by beetles, fertilisation occurred and seeds began to develop. Inside each seed a tube connected the embryo to the parent plant. Each embryo developed the beginnings of a root, a shoot and its first leaves, the cotyledons. It was surrounded by a supply of food and protected by a hard seed coat. The cotyledons continued to grow until they filled most of the seed. Around the seeds, the base of the former flower hardened, became woody, and grew into a gumnut with valves to release the seeds. The seeds dried out and became dormant. The valves remained closed. The tree waited. On a recent stormy night, a small branch broke. It remained stuck high in the tree. Now that the gumnut's connection with the tree's food supply is broken, the valves have opened, releasing the seeds. As they fall, a gentle breeze catches them, and blows them down the valley, where they sprinkle on the ground, ready to germinate when conditions are right.

When there has been sufficient rain to provide a young plant with moisture, the dehydrated seeds will take up water, expand and burst through the seed coat. The cotyledons hold a store of food which will move to the root. The root will begin to grow, to hold the small plant in place and find food and water. Next, the shoot will elongate. The first true leaves will appear. Once all the food has been drawn from them, the cotyledons will shrivel and fall off. The young gum tree will have begun its life. Gum trees are not the only plants that use wind to disperse their seeds. Daisies, which include dandelions and thistles, have soft hairs attached to the tops of their seeds, like miniature parachutes, so that they can catch the wind and fly long distances.

The seeds are not fully developed when they begin their flight. It will be a few months before they are mature enough to germinate. Banksias also spread their seeds on the wind, but wait until a fire has passed. The woody cones keep the seeds safe from flames. After the fire, the valves of the cones open, each allowing two seeds to escape. Each seed has a thin black wing which allows it to fly with the wind, and hopefully land in a place where vegetation has been burnt and there is an open space and a bed of nutritious ash to feed the young plant.

Water provides another easy way to move seeds, which is very helpful to aquatic plants and those that grow beside creeks and lakes. Some plants spread their seeds unaided. One example is the little native geranium with pale pink flowers. When their seeds are ripe, they are released explosively, spreading a short distance away from their parent, so they will not be competing with it for food and water. A common method for plants to spread their seeds is to make use of animals. When the pods of wattles and some peas mature, they crack open along their edges and release the seeds, which fall to the ground. Each seed is covered in a hard black seed coat, and has attached to it an aril, a nutritious lump which attracts ants. The aril is a good source of food, so the ants take the seeds back to their nest. They remove the arils and discard the seeds into a rubbish chamber. Here the seeds remain safe from other animals, perhaps for years. Eventually there will be enough moisture in the soil to crack the seed coat, or the heat of a bushfire passing above can crack it. Then a small wattle tree or pea bush will grow out of the ground beside the ants' nest.

Another way in which seeds can be spread by animals is to be surrounded by a tasty fruit. Some of our local indigenous plants produce small fruits, which attract lizards, possums, wallabies and birds. Fruits soften and change colour when the seeds are mature. Flax lilies have small bright blue berries held up on stalks above their long narrow pointed leaves. Mistletoe fruits are eaten and spread by Mistletoe Birds. Nodding Saltbush, which is a tiny creeper, and small bushes of Ruby Saltbush have inconspicuous flowers, but brightly coloured fruits. After fruits are eaten, the animal may travel quite a distance, before the seeds in the fruit pass through its gut and are deposited on the ground.

There is a less pleasant way in which animals spread seeds. Bidgee-widgee plants grow round burrs, in which each of the numerous seeds has a few barbed spines pointing outwards. These catch on the fur of any passing animal, which later stops to pull them off. Grass seeds also catch in fur. The seeds of spear grasses are particularly sharp. They have a long twisted tail called an awn. When a seed lands on the ground, it waits for rain. Then the awn will slowly unwind, behaving like a corkscrew, and drilling the seed into the ground and planting it. Look out for them next time you are pulling seeds out of your pet's fur or your socks, and think about where you discard the seeds. You are also dispersing seeds for a plant.

(Also published in Meredith and District News, February 2021).

Illustrations by Ruth Hurst



Southern Blue Gum



Silver Banksia



Messmate



Seaberry Saltbush



Tasman Flax-lily

Angair and the Anglesea Primary School

Bill McKellar

The Angair Propagating Group was started in 2003 at the suggestion of the then president, Dot Hutton. The Committee of Management agreed and the endeavour quickly became a productive, educational and social group. We were always keen to expand our educational activities so, in 2007, we approached the primary schools in the region to see how we could help. We were very aware that our future depends on making the next generations respect and realise the importance of the wonders of nature.

At the same time, the principal of the Anglesea Primary School, Pamela Sandlant, was turning the school into a community-connected resource. Angair became part of this initiative: the propagators would conduct sessions at the school, including bush adventures. The children would create artwork for the annual Wildflower & Art Weekend.

To add to the connection, the school was about to relocate to a new location on Camp Road on an old pine plantation bought from Alcoa. This 3.3 ha area had mostly very big Manna Gums, mature pine trees, Black Wattles in a fragile state and 10 of the largest, healthiest looking Coast Wattle ever seen.

We approached Pamela Sandlant and the Department of Education's representative to talk about the new school grounds. She and the department were very supportive of Angair working with the children to propagate plants for the area. Propagation sessions at the old school became more important during 2009 and 2010 as the building progressed. By the end of 2010, the beautiful open plan school was finished.



2012 planting near carpark - Bill at rear

The worst of the pines and wattles had been removed and the children used the resulting wood to build bridges and the most ingenious cubby houses, which are still used today.

On 10 May 2011 – with the amazing support of 110 people – 3000 plants were planted around the outside of the grounds to give privacy and safety for the children. It was a great half day made better by the presence of our supporters: Parks Victoria, the then Department of Sustainability and the Environment, the Great Ocean Road Coastal Committee, the Anglesea Men's Shed, Bunnings and Angair members. All the plants were indigenous and planted out from forest tubes. Needless to say, although small, the plants liked the river flat soil and have grown brilliantly.

In 2016 money raised by the Parents Association enabled further plantings to fill out the middle area, which made a very functional playground. The plants were supplied as tube stock from Angair.

The great support the propagation group has had from Pamela Sandlant and the present principal, Murray Surkitt, and their staff made us feel comfortable about the continuation of our work. Although COVID interrupted our work, we hope to continue the propagation session with the younger groups, the introduction to the garden for the prep children, maintenance and replanting, pruning of the fruit trees and the Know Your Garden sessions with the whole school. Along the way, we hope to meet our future conservationists.



Further planting in 2018



Similar area in 2023

Virtual Fencing Project - Forest Road Anglesea

Patrick Flanagan

You may or may not have heard about the virtual fencing trial that started on Forest Rd last June. A virtual fence consists of post-mounted devices that operate from dusk to dawn. They are activated by car headlights and emit a combination of sound and flashing lights that alert animals. The posts are placed at 25-metre intervals on alternating sides of the road and so the devices are triggered sequentially as a car travels along the road.

The Forest Rd virtual fence, which is 12 km long, starts near the roundabout on the Great Ocean Road and ends north of Gravel Pits Rd near Moriac. It is the largest section of virtual fencing installed in Australia. More information about the virtual fence is available from wildlifesafetysolutions.com.au. The driving force behind the installation of the fence is Jason Cichocki from Surfcoast Wildlife Rescue. Andy Meddick, a former state MP from the Animal Justice Party, lobbied successfully for government funds to pay for the fence.

Jason has a particular interest in the results of the trial as his wildlife rescue organisation is called out to attend to animal-car collisions on Forest Rd and other locations around the Surf Coast. The main animals that the fence is set up to stop from colliding with cars are, of course, kangaroos and wallabies that move backwards and forwards across Forest Rd into the Great Otway National Park.

As the fence trial has been in operation for around seven months, it seemed a good time to check on how it is going. According to Jason, the data collected over the four years prior to the installation of the virtual fence showed more than 200-250 animals were being hit on Forest Rd annually, which equates to approximately 15-20 kangaroos and wallabies per month, year after year. Since the start of the trial seven months ago, there have been 65 animal-car collisions or less than 10 a month, which is more than a 50 per cent reduction so far. These figures will of course change as it is a three-year trial, but at this stage the virtual fencing has saved many animals' lives and is preventing significant damage to the vehicles involved.

It is also preventing the subsequent trauma associated with hitting an animal – to the animal, to the unfortunate motorist and to Jason who has to pick up the pieces.

Early enquiries about the results of the trial indicated strongly that not only was this system saving kangaroos' and wallabies' lives, but also the number of birds such as Magpies, Tawny Frogmouths, Kookaburras and Sulphur Crested Cockatoos that were being hit by cars has been reduced markedly by the installation of the virtual fence. Back in October Jason estimated that the fence had stopped upwards of 400 car-bird collisions.

As Jason says, it really is a win-win situation as so many animals are left unharmed and the community is safer as well. He hopes that the results from this trial can be used by other shires right across Australia to prompt the wider use of virtual fencing to help save lives.



From left to right: Andy Meddick and Jason Cichocki plus two helpers



Installing the virtual fence

What's in a name? *Pultenaea* : 'Eggs and Bacon'

Neville Millen

The golden-yellow to orange pea flowers with brownish-red centres were called Eggs and Bacon by my grandparents and parents, because they reminded them of plates of yellowish scrambled egg mixed with reddish bits of bacon. The colloquial moniker has been passed on for generations.

However, there are many similar pea-flower genera – *Dillwynia*, *Daviesia*, *Platylobium*, *Aotus*, *Eutaxia* and *Viminaria* – that also have flowers of similar shape and colours, making *Pultenaea* species more challenging to identify while on bush walks.

A defining feature of all *Pultenaea* is that they have leafy collars called stipules at the base of the leaves and the standard (rear) petal is much larger and either hangs over or stands up over the minor petals (see diagram).

The genus is part of the Fabaceae family which includes legumes such as beans and peas. It is endemic to Australia with all species existing along the eastern and southern coastal regions and across to Western Australia, mostly up to 150 kilometres inland.

There are approximately 120 species, ranging from tall, erect shrubs to low prostrate forms.

The genus was first formally described and named by the English botanist James Edward Smith in 1794 in his pamphlet, *A Specimen of Botany of New Holland (1793-95)*.

The pamphlet described 40 new species, among which included a newly named *Pultenaea stipularis*, collected in the colony of New South Wales. The species of *Pultenaea* was originally drawn by John White, followed by a painting completed for Smith's pamphlet by James Sowerby

The new genus honoured Dr Richard Pulteney, an English physician and botanist from Dorset (1730-1801), a Fellow of the Royal Society of London in 1768 and of Edinburgh in 1793, and a member of the Linnean Society of London, presided over by James E Smith himself. Dr. Pulteney wrote the first English edition of the biography of Swedish botanical taxonomist Carl Linneaus, who created a modern plant identification system still largely in use today.

There are 11 *Pultenaea* species in our local area and the propagation unit grows six on a regular basis: *P. daphnoides*, *P. gunni*, *P. humilis*, *P. mollis*, *P. scabra* and *P. tenuifolia*.

Below are descriptions of six Angair-grown species.

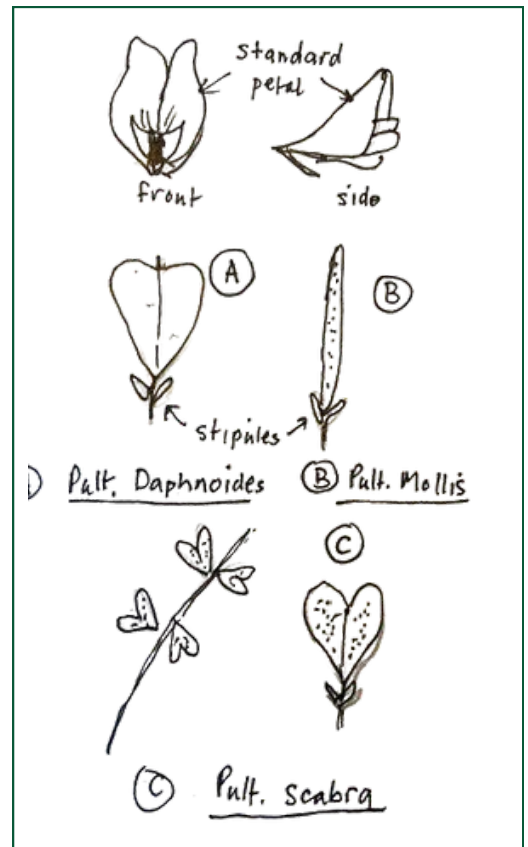


Image: Peter Brighton

Large-leaf Bush-pea, *Pultenaea daphnoides*.

(Species name from Latin, 'like a daphne plant').

This is a tall, erect shrubby species to three metres. It has large wedge-shaped leaves with a prominent midrib tipped by a short spine and clusters of large yellow (sometimes yellow-orange) flowers with brown central markings. It is fast growing, as plants reach two metres tall from forest tubes within three years. It flowers in spring and can survive dry conditions, though it's best in moist soil in dappled shade. This species can be hedged as it responds to pruning. It is common as an understorey species in open forest in the Anglesea- Aireys landscape.



Drawing: Neville Millen

Soft Bush-pea, *Pultenaea mollis*.

(Species name from Latin mollis, 'soft').

An erect shrub to 2.5 metres, it has soft, hairy branchlets, with narrow 'heathy' leaves crowded and upcurving, grey-green and hairy. It produces masses of fragrant bright yellow flowers in clusters of up to 10, with less prominent red central markings. The flower calyxes are hairy and sticky. It is not especially common in the area and the best location to see this species is the Powerline Track across from, and south of, the Anglesea Transfer Station where hundreds of plants flower profusely from September to November.



Image: Ellinor Campbell



Golden Bush-pea, *Pultenaea gunni*.

(Species named after the 19th century Tasmanian botanist Ronald Gunn).

This wiry, sprawling shrub to 1.5 metres is found in dry gravelly soils behind Anglesea in forest areas. An impressive stand of the species is at the Bunjil Mirr lookout over the old coal mine. The flowers are very rich orange-yellow with reddish-brown markings in groups of three, and can be so profuse as to crowd the plant and hide the small deep green rounded foliage. It flowers from September to November. A most attractive species but it seems to be difficult to collect seed and propagate.

Image: Ellinor Campbell

Rough Bush-pea, *Pultenaea scabra*.

(Species name from Latin scaber, 'rough').

A small tightly-packed shrub to 1.5 metres in height with unique, small dark-green rough, hairy leaves that look like inverted arrow-heads or hearts pointing inwards to the stems. The flowers come on terminal clusters in groups of two to five and are yellow with reddish-brown centres. Flowering from September to December, this species likes forest areas with dappled shade. It is slow-growing as mine is half a metre high after three years!



Image: Ellinor Campbell



Dwarf Bush-pea, *Pultenaea humilis*.

(Species name from Latin humilis, 'low growing').

This is a low species (usually less than 40 cm) with slender deep-green elliptic leaves and distinctive rich orange flowers with reddish centres. The flowers cluster on the leaf axils and can be profuse. It occurs across the whole area in open forest, but two years ago there was a mass flowering in the bush west of O'Donohue Rd near Anglesea. It flowers from October to November, but seed is hard to gather and it can be difficult to propagate. A highly desirable, beautiful plant, ideal for a rockery located in dappled shade and sandy friable soil.

Image: Margaret MacDonald

Slender Bush-pea, *Pultenaea tenuifolia*.

(Species name from Latin tenuifolius, 'with slender leaves').

This is a low-growing prostrate species about 20 cm high. It is found in areas of coastal scrub and its foliage is that of tight small cylindrical leaves on thin wiry stems. The stems overlap and can become matted over time. The flowers are dull yellow with brown-red markings. Flowering in spring, it is a great addition to a rockery, located in dappled shade and bedded into sandy to friable soil.



Image: Ellinor Campbell

There are 11 *Pultenaea* species in our local area and the propagation unit grows six on a regular basis.

References

Cochrane G.R et al (1973) Rev Ed. *Australian flora in Colour: Flowers and Plants of Victoria*, AH &AW Reed, Australia.

Costermans, Leon (1981) *Native Trees and Shrubs of South-eastern Australia*, Rigby, Australia

Mayfield, Enid (2013) *Flora of the Otway Plain and Ranges 2*, CSIRO publishing, Melbourne Australia.

VicFlora <http://vicflora.rbg.vic.gov.au>



Angair (Anglesea, Aireys Inlet Society for the Preservation of Flora and Fauna) is dedicated to protecting our indigenous flora and fauna, and to maintaining the natural beauty of Anglesea and Aireys Inlet and their local environments.

www.angair.org.au

We acknowledge the Wadawurrung and the Gadubanud of the Maar People as the traditional owners and protectors of this place. We also acknowledge their ancestors who cared for the land, water and marine areas and all its biodiversity for thousands of years. We pay our respect to their elders past, present and future who continue to care for this place.

Next issue:

Our next issue will be published in June 2023 and will be the winter edition. We welcome any contributions of local, seasonal or general environmental interest. Send your contributions to angair.communication@gmail.com by mid-May and clearly label them 'for Angair Quarterly'.