

Autumn 2026

Angair Quarterly

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



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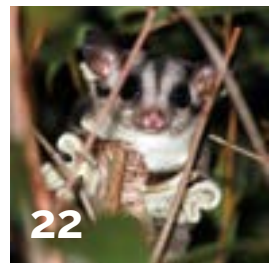


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The evolution of the avian bill

Rob Shepherd

The shape of a bird's bill tells us a lot about the behaviour of a species, particularly its feeding habits. The evolution of the avian bill, or beak, from a toothed structure of a flying dinosaur 70 million years ago to the myriad shapes observed today is fascinating. Coincidentally, ongoing changes to bill structure have had an important impact on the development of evolutionary theory via 'Darwin's Finches'.

Birds use their bills for everything from nest building, communication, preening, temperature regulation, pair bonding and defence; however, the major driver in bill shape is dietary specialisation. Bills are specialised tools and bird species have evolved a wide variety of bill shapes, sizes, and structures to suit their specific diets and environments. These adaptations, driven by natural selection, allow species to efficiently consume food, such as cracking seeds, sipping nectar, or tearing meat, as well as to perform other complex tasks in a class of animals that have traded the dexterity of hands for the benefits of winged flight.

From dinosaur to a modern avian

It has long been known that birds evolved from dinosaurs in what was a slow gradual process, involving feathers, wings and eventually bills. Birds evolved roughly 160 million years ago from a group of theropod dinosaurs called Archaeopteryx. These early avian-dinosaurs had well-developed flight feathers, indicating they could glide well and possibly fly; however these animals had jaws and teeth rather than a bill. While bills evolved multiple times in herbivorous dinosaurs, fossil records indicate that the earliest bird-like dinosaur containing a bill was a primitive seabird called *Ichthyornis dispar* that evolved about 85 million years ago. Despite the appearance of a bill, it contained razor-sharp teeth (**Figure 1**); it wasn't until much later that birds developed toothless bills.



Figure 1.

A model of the skull of *Ichthyornis dispar*. Although this bird-like dinosaur exhibited many avian features it still possessed the sharp teeth of a dinosaur. (Image: Michael Hanson and Bhart-Anjan S. Bhullar; Nature.)

The evolutionary drivers for the transition of toothed jaws to bills in early birds remains unclear. One theory is that a bill is lighter than a toothed jaw, thereby reducing weight to assist flight. Others suggest that dinosaur bills evolved to assist an herbivorous diet, or may be associated with a shortened incubation period, as growing teeth is a slow gestational process that leaves eggs vulnerable to predators over long periods.

The Cretaceous-Paleogene mass-extinction event approximately 66 million years ago, associated with an asteroid impact, killed all non-avian dinosaurs. Only a single bird lineage survived the asteroid; all the toothed birds became extinct thus all modern birds evolved from a single, toothless, billed ancestor. Long-term survival of modern birds was assisted by the presence of numerous ecological niches left empty by the extinction of both toothed and non-avian dinosaurs. It is thought that billed birds had continued access to seeds which was one of the few food sources that were still available after the asteroid impact. In contrast, toothed birds typically ate small animals which were difficult to source after the asteroid strike. In addition, the relative scarcity of predators following the extinction event promoted the outward dispersal of various avian groups to fill new ecological niches.

Evolution of the modern avian bill

Bills are highly specialised tools that have evolved a wide variety of shapes, sizes, and structures to suit a specific diet and environment. We are all familiar with many bill adaptations including hooked bills for tearing prey or wood by birds of prey or cockatoos; long, slender bills for nectar feeding by honeyeaters and hummingbirds; conical bills of finches for cracking seeds; broad, flat bills for filtering food as in ducks and spoonbills; and strong, chisel-shaped bills of kookaburras and woodpeckers for removing wood.



Figure 2

Shorebirds provide a compelling illustration of bill evolution as illustrated by the cover of BirdLife Australia's Shorebirds Identification booklet. © BirdLife Australia 2020.

Of all avian orders, however, it is perhaps the shorebirds that provide the most compelling illustrations of bill evolution, strongly influencing where, how and on what they feed. Subtle differences in bill design among shorebirds are highly evolved adaptations that allow multiple species to coexist in the same, often limited, habitat by partitioning food resources. These slight variations in length, curvature, and flexibility enable them to target different depths, prey types, and foraging techniques, maximising foraging efficiency and minimising direct competition (**Figure 2**) For example, small differences in length allow shorebirds to feed at different depths in the mud, even when standing side-by-side. Longer bills, such as those of the Bar-tailed Godwit, probe deep for buried prey, while shorter bills, like those of the Greater Sand-Plover, take prey from the surface, allowing them to share the same mudflat without competing for the same food.



Bar-tailed Godwit
Image: Jordan Ayton



Greater Sand-Plover
Image: Thomasz Wilk

The curvature and shape of a bill lead to specialised prey capture. The down-curved bill of the Whimbrel functions like a specialised tool to extract crabs from their arched burrows while the up-curved bill of the Avocet sweeps through shallow water, filtering tiny creatures while keeping the bird's head stable. By using a bill specialised for a specific, readily available food source, shorebirds can conserve energy while maximising their food intake, which is crucial for surviving long-distance migration.



Eurasian Whimbrel
Image: Jeff Giddens



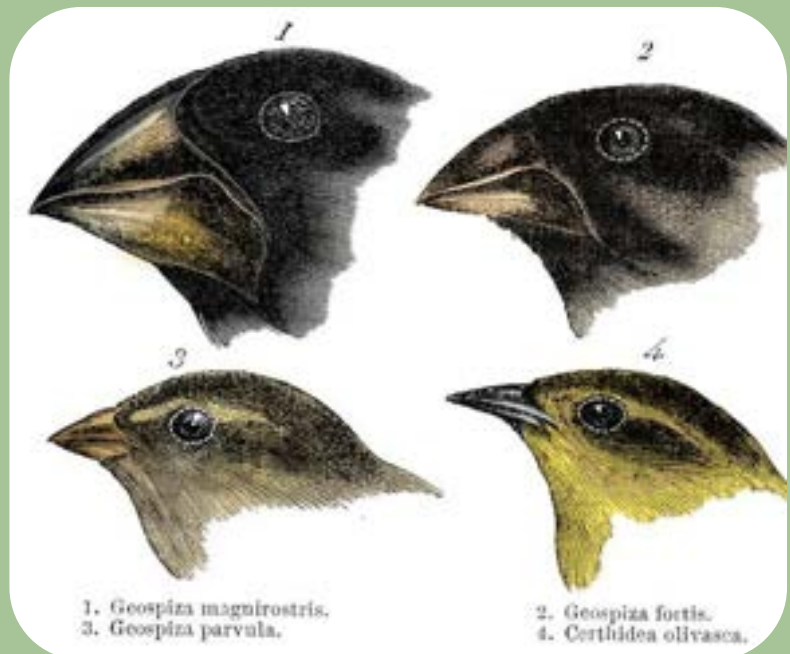
Red-necked Avocet
Image: Jordan Ayton

Another important bill adaptation is a touch-sensitive tip. Many shorebirds have specialised, touch-sensitive nerve endings called Herbst's corpuscles at the tip of their bill. This allows them to 'feel' for food in murky water or deep mud where they cannot see it, allowing them to hunt effectively in conditions where visual feeders cannot hunt.

The bill of primitive birds evolved over millions of years driven by many factors such as weight reduction to assist flight, support of a herbivorous diet and a reduction in gestational periods. They evolved into highly versatile structures taking over some of the functions of the hand, such as nest building and preening, that became impossible once hands were incorporated into the wing. Bill structure of modern birds reflects the diverse ecological niche occupied by contemporary avians and provides insight into the food source and habitat of each species. Darwin's finches demonstrated that natural selection in new environments can cause large changes in bill morphology relatively quickly. These processes continue today as birds continue to face new evolutionary pressures including habitat reduction and climate change.

Darwin's Finches

Famously, Charles Darwin collected small finch-like birds on various islands of the Galapagos during his 1836 voyage on HMS Beagle. Although these birds appeared nearly identical to mainland finches, careful examination by the ornithologist John Gould revealed significant differences in their bills and 14 specimens were identified as different species. Their bills had adapted to the type of food they ate in order to fill unique niches on the Galapagos Islands. Their isolation on the islands over long periods had resulted in the formation of distinct species. The Galapagos finches helped Darwin solidify his ideas on natural selection.



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Over the Moonah: Victoria's rare Coastal Moonah Woodlands

Josh Burke

Found only in pockets of Coastal Alkaline Scrub is a special community of plants supporting at least 256 indigenous plant species: the Coastal Moonah Woodland. Usually on limestone deposits within 10 km of the coast, these woodlands once spanned an estimated 12,978 hectares across Victoria, but due to weed encroachment, land clearing and other pressures, they're now restricted to less than 1000 ha. An extraordinary community of flora and fauna just a short journey from our coastal members' homes.



Coastal Moonah

Coastal Moonah Woodlands are protected and listed as 'threatened' under Victoria's Flora and Fauna Guarantee Act (1988). They are typically characterised by, as the name suggests, a canopy formed by Moonah, *Melaleuca lanceolata*. Other plants typically seen in these plant communities include Thyme Rice-flower, *Pimelea serpyllifolia* subsp. *serpyllifolia*, Coast Beard-heath, *Leucopogon parviflorus*, as well as endangered Coast Wirilda, *Acacia uncifolia* and Coast Bitter Bush, *Adriana quadripartita*. Some of these species co-form the canopy in some instances. Various graminoids – grasses and grass-like plants – are seen below the canopy among elusive wildflowers such as orchids from genera *Pterostylis* and *Caladenia*.

Coastal Moonah Woodlands also support diverse fauna creatures including Boobook Owls, Long-nosed Bandicoots, Southern Forest Bats and various reptiles, birds and insects.



Coast Beard-heath



Fiddler Beetle



Thyme Rice-flower

The word 'Moonah' is believed to have been taken from Palawa Kani – the language of the First Peoples of Lutruwita (Tasmania). Some sources suggest the word means 'gum tree', though others believe that this is misappropriated and that the word was simply taken from a list of Palawa words. Moonahs take the habit of a large shrub or small tree, growing up to 10 metres. They are one of the only plants in their communities to flower over the summer months, and they do so prolifically (and I think quite remarkably). Observations of Moonahs in flower on a still day are met with a thrumming of insect activity. Hordes of flies, bees, beetles, butterflies, moths and others hum around the pure white inflorescences seeking pollen and nectar. One of the more eye-catching creatures to be observed is the Fiddler Beetle, *Eupoecila australasiae*. These strikingly decorated scarab beetles emerge from the soil in summer and are a delight to be seen against the white backdrop of a Moonah inflorescence.

The hubbub of insect activity attracts more than just keen naturalists – omnivorous birds, such as the Red Wattlebird, are attracted to the banquet of both nectar and insects. Flowering Moonahs also attract nectivorous birds, insectivorous microbats, and ever-determined ant species climbing to a summit thousands of times their own height.



Polygala myrtifolia, Bellarine Pea

Like many of our lovely vegetation communities, Coastal Moonah Woodlands are under threat from weed invasion. The most aggressive invaders are usually species that exist in similar habitats in their traditional home range: *Polygala myrtifolia* (why must they call this the Bellarine Pea?), Hares-tail Grass, *Lagurus ovatus*, and Italian Buckthorn, *Rhamnus alaternus*. These species are all strong competitors and typically take over areas of native vegetation relatively quickly. At least *Polygala* and *Lagurus* are weeded easily by hand!

There are small pockets of Coastal Moonah Woodland to be found in Anglesea and Aireys Inlet, but more robust examples are found at Barwon Heads Village Park, the Point Lonsdale Golf Club and The Narrows between Queenscliff and Point Lonsdale. Across the Mornington Peninsula, less than 9 per cent of original Coastal Moonah Woodland extent exists, and the best example is found at Point Nepean National Park. There are also scattered examples across the far south-west of Victoria.

As we now move into our autumn and early winter months, be on the lookout for emerging rosettes of *Pterostylis* species in Coastal Moonah Woodlands, and be sure to pull out a few weeds while you're there.

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A biological soil crust is nature's protector

Wendy Cook



Soil crust with lichen image: Murray Fagg



New growth on old soil crust image: Rebecca Spindler

At first glance, you might think the ground is bare. There are almost no grasses, no other plants, nothing obvious to hold the soil together. Elsewhere, earth – grazed and trampled to barrenness by sheep during summer – turned to puffs of brown and blew away in the strong winds of early autumn. But here, the soil held together. A fence keeps hard-hoofed stock away from this formerly eroded slope. Wallabies hop across it, but their feet are softer and less damaging to the soil. There are only a few short, scattered blades of grass to be seen, so why has this patch of earth remained in place?

Look more closely. The ground is hard and lumpy. It is covered with patches of small black spots of various sizes, areas of tiny pale green frills, and miniature shrubs of dark olive-green with many tiny branches reaching up and out. Growing beside these are almost flat circular patches of pale green or olive-green with broad branches spreading outwards. All of these are species of lichen. Among them are a few clumps of tiny dark green moss. The short roots of the lichens and mosses help to hold the soil surface together. Weaving their microscopic strands among the soil particles are cyanobacteria, a primitive form of life. Together, the lichens, mosses, cyanobacteria, and sometimes fungi and green algae, form a biological soil crust, holding soil particles together in clusters and creating an uneven surface.

This bonding of the soil prevents erosion by wind and water. The roughness of the surface slows water, so it is more likely to soak in. The lichens and mosses produce carbon during photosynthesis, which becomes part of the soil when they die or drop leaves. When cyanobacteria die, nitrogen inside them can be used by plants and animals in the soil crust. Along with water, seeds may be washed into the biological soil crust, or they may be dropped there by the wind. As this area holds more water and nutrients than completely bare patches of ground, it is a better place for seeds to germinate. Here, grasses can sprout. Other small flowering plants or shrubs may also grow.

In this miniature world, between the lichens and mosses, a tiny black insect roams the surface, walking among the embedded stones, some smooth and red-brown or orange, others pale and rough. It passes a shiny blue-green wing case from a jewel beetle and a cluster of gumnuts, then vanishes among moss. Here it makes a meal of a dead moss leaf. Sometimes, a larger insect may eat it, before being pounced on by a spider, which in its turn could be eaten by a lizard, which may be captured by a kookaburra. It is all part of a food chain beginning in the soil crust.

Although they may sound sturdy, biological soil crusts are easily damaged. Hooves of sheep, goats and cattle break them up, as do vehicles driving across them. They are sensitive to atmospheric pollution and regular burning. When these crusts are damaged, the process of erosion can begin again. However, if left alone, the grasses and other plants will benefit from the added nutrients and water in the soil, grow and flourish. The lichens and mosses cannot survive under them, if vegetation or leaf litter become too dense, but will have done their part in stabilising the slope.

Due to this need for an open space, biological soil crusts are often found on eroded areas. They are commoner in the drier parts of Victoria and Australia, where the vegetation is more sparse, as well as near deserts in other parts of the world. They are also found in cold places with little plant growth, such as the tundra in the Arctic, and Patagonia in South America. Although they appear insignificant, the tiny lives that make up a biological soil crust have an important role to play in the protection of soil, and the recovery of damaged landscapes.

The downside of rain

Peter Forster



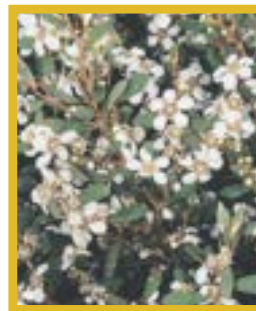
Boneseed



Sallow Wattle



Bluebell Creeper



Coast Teatree



Agapanthus

If the climate relents and brings good autumn rains to the Surf Coast, everyone will be delighted. But there is a downside to a good growing season – flourishing weeds.

The most common environmental weeds on public land are Boneseed, Sallow Wattle, Bluebell Creeper, Coast-Tea-tree and Polygala. In home gardens, other species run rampant: Sweet Pittosporum, Agapanthus, Gazania, Honey-myrtles and many more.

Each weed species has particular traits of regenerating itself and spreading its seed. If you are attempting to control weeds on your property it pays to do some research before you start a weed control program. Ask yourself:

What is the best control method? Do you pull, cut and poison, spray with herbicide or smother the plants. Most weeds are easy to pull when they are young.

How long the plant sets seed? Knowing this gives you a time window to work in.

When should I start control? Before seed set is always a good idea!

How do I dispose of weeds? If no seed set you can pull and drop.

For more information collect a copy of the 20 Top Weeds booklet from the Angair office.

The many forms of Australia's spider flowers

Neville Millen

In the late 19th Century English botanist George Bentham described 150 species of grevillea in his *Flora Australiensis* of 1863. The genus had been named in 1810 to honour Charles Francis Greville (1749-1809), a past vice-president of the Royal Society of London, co-founder of the Royal Horticultural Society, and a patron of botany.

Grevilleas range from prostrate plants such as *Grevillea repens* to tall trees like *Grevillea robusta*. They are easily grown and tolerate most soils as long as it is well-drained. Grevilleas belong to the family Proteaceae, named after the sea god Proteus, who could change his form at will, which is most apt given the numerous forms of this genus.



Grevillea repens



Grevillea robusta

Flora of Australia in 1988 described 357 natural Grevillea species in 14 distinct groups, based on flower type, leaf structure and habit. It is the third largest genus of Australian flora, closely related to the Hakea genus, but forms fleshy seed capsules, rather than the woody capsules of Hakeas. Grevillea seed can be limited in viability and in most species propagation is best done by tip cuttings.

Scores of Grevillea cultivars have been created commercially that enhance flower colour, leaf form, habit and adaptation to different climate conditions. Once a cultivar is created from parent plants it is propagated thereafter by cuttings.

Grevilleas are commonly called 'spider flowers' because of the dangling habit of flowers among the foliage. However, this is not universally true, for flowers can vary from singles to short umbel clusters, one-sided toothbrush flowers and long spikes or plumes.

Victoria is home to 25 endemic species of Grevillea, of which some are described below.

Cats Paws, *Grevillea alpina* (= alpine). Major Thomas Mitchell found and named this form from the Grampians in 1836, but other *G. alpina* grow outside alpine areas. Typically, plants are 60-200 cm high. The Grampians form has flowers of a bright red perianth, ending with a round yellow limb. In the goldfield areas of Castlemaine, Maryborough and Bendigo *G. alpina* has a narrower red or pink perianth and a white limb. Leaves of this species are typically oval, dark-green or grey, often reflexed, and hairy underneath but mostly smooth on top. Flowers occur all year round but are most profuse in spring.



Grevillea alpina, Grampians form - red and yellow



Grevillea alpina, Grampians form - pink and white

Flame Grevillea, *G. dimorpha* (= two forms) are endemic to the Grampians. The more common of its two forms grows in moist gullies with brilliant red flowers in spring, dangling among broad, short, dark-green leaves. A rarer form has narrower grey-green leaves and larger flowers like those of olive trees.



Flame Grevillea

Golden Grevillea, *G. chrysophaea* (= golden), has similar flowers to *G. alpina*, but has distinctive velvety golden flowers with prominent reddish-green styles. It is a compact shrub to one metre with dull hairy green leaves. It is found in the Brisbane Ranges and limited areas of Gippsland. The species prefers a moist, light gravelly soil. It flowers from September to January.



Golden Grevillea

Holly Grevillea, *G. aquifolium* (= water-leaved) is named for the fact that the tops of the deep green leaves glisten as if covered in water. The leaves are deeply divided into finely pointed lobes. Flowers occur in distinctive arrays of red toothbrushes with long styles in August to February. It rarely gets over a metre high and grows in moist gullies in the Grampians.

Lavender Grevillea, *G. lavandulacea* (= lavender-like), is a very variable species. In the Billywing Gorge in the Grampians there is a form one metre high with massed bright-red flowers turning pink on the ends. By contrast, another form in dry gravelly soil in the Black Range, west of the Grampians, is 1.5-2 m with grey foliage and translucent pink-white flowers. It is used as a cultivar parent.



Lavender Grevillea

Desert Grevillea, *G. pterosperma* (= winged seed), is a spreading plant in the north west Victorian Wimmera of 2-3 m in height with long wiry erect leaves and upright creamy-white flowers in racemes 5-10 cm long. A plume grevillea typical of drier areas and pollinated by honeyeaters, it flowers in spring through summer.



Desert Grevillea

Anglesea Grevillea, *G. infecunda* (= infertile), is a small to medium species in the Anglesea area, characterised by dull green holly-like leaves and red spidery flowers in spring. Rare in the area and unable to set seed, it grows from cuttings and rhizome separation. Endangered in the wild, it is propagated by Angair.



Anglesea Grevillea

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Both tall and small, they all have big feet

Kaye Traynor

Kangaroos are an Australian icon although they originally came to Australia from South America, having travelled via a land bridge connected through Antarctica about 90 million years ago when the supercontinent Gondwana still existed. Marsupial ancestors, which were the precursors to kangaroos, first appeared in South America and then migrated to Australia before the continents fully separated.

These marsupials then evolved in Australia over millions of years into the various species that are found here today. Wallabies, which are native to Australia and New Guinea, evolved alongside kangaroos and all belong to the family of Macropodidae, meaning 'big feet'. In all, Australia has about 50 species of macropods, from the little bettongs and potoroos to the towering big Red Kangaroos.

The name 'kangaroo' comes from the Guugu Yimidhirr word *gangurru*, which refers to a specific type of large, dark kangaroo, such as the Eastern Grey Kangaroo. The word was first recorded in 1770 by naturalist Joseph Banks and later by Captain Cook when the Endeavour was beached near Cooktown. The name 'wallaby' comes from the Eora Aboriginal people of coastal New South Wales, specifically from their word *wollabi* or *waliba*. European settlers adopted the term to refer to smaller kangaroos.

The main difference between the kangaroo species and the wallabies is size. This difference influences their build, with kangaroos having longer legs for speed and wallabies having more compact legs built for agility in forests and rocky areas.

There are four species of kangaroos throughout Australia. Three of them occur in our region: the Eastern Grey Kangaroo, the Swamp Wallaby and the Red-necked Wallaby. In the Wadawurrung language 'kangaroo' is *goim* and 'wallaby' is *go-yin*.



Eastern Grey Kangaroo Image: John Lenagan



Red-necked Wallaby Image: Peter de Jongh

The Eastern Grey Kangaroo, *Macropus giganteus*, inhabits a wide area from the coast to the semi-arid inland. They are found naturally in open woodland and grassland with tree cover. They are also adapted to semi-urban living at times. They are social animals often congregating in large groups where food is abundant. They breed continuously but most young are born between March and May.

In appearance, the Eastern Greys are pale grey-brown above with whitish underparts. The males can be up to 1.3m. in height and to 66 kg in weight. Females are up to 1 m height and to 37kg. They are distinguished from other kangaroos in having a hairy muzzle with fine hairs between the nostrils and upper lip.

A similar species is the Western Grey Kangaroo, which is smaller, has a finer build and is darker brown. This species occurs throughout the southern inland region of Australia.

Two species of wallabies are local to our district: the Red-necked Wallaby and the Swamp Wallaby, which is also called the Black Wallaby.

In appearance, the Red-necked Wallaby, *Notamacropus rufogriseus*, resembles a kangaroo. It is one of the largest wallabies and has black nose and paws, medium-grey coat, with red colouring on the neck. A subspecies, the Tasmanian form, is called Bennett's wallaby, and is smaller, with longer fur.

Although Red-necked Wallabies are nocturnal, they are also active during the day. They are mostly solitary but will form groups, sharing feeding areas in semi-cleared woodland which provides a mix of refuge and grazing areas. They will venture into gardens adjoining bushland and browse, but are always watchful and alert.

A female bears one offspring at a time, the young stay in the pouch for about nine months and continue to feed until they are 12-15 months. Red-necked Wallabies are also known in some cases to adopt the offspring of another individual and care for it.

The Swamp Wallaby, *Wallabia bicolor*, is dark and stocky with dense, coarse fur. It is blackish grey above and light yellow to rufous-orange below. It has light grey stripes along its cheeks and black 'gloves'.



Swamp Wallaby Image: Rob Shepherd

By nature, solitary and shy these forest dwellers commonly inhabit areas such as creeks and gullies which have thick vegetation and shelter. They are often active in the daytime and it is not unusual to see or hear a Swamp Wallaby or catch a glimpse of one disappearing into the undergrowth with a long black tail trailing straight out behind.

They are referred to as 'generalist browsers' with a varied diet including leaves, fruits, grasses, fungi and ferns, even the very spiky Hedge Wattle, *Acacia paradoxa*, which one individual was observed devouring with no apparent discomfort.

Breeding can occur all year round. The joey stays in the pouch for about nine months and is independent at 15 months.

Although the conservation status is presently regarded as 'common' for all three local macropods, the possibility of changes to the security of individuals and groups is always a concern. Roadkills and injuries, dog attacks, fox predation especially on joeys, wildfires and urban expansion causing loss of habitat are all problems which can cause long-term dislocation to established populations.

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The winter woolly moths of the Surf Coast

John Lenagan

Towards the end of March as we start to come into the cooler autumnal weather, the larger furrer Anthelid moths start to appear. They are well known for their fuzzy caterpillars that often march around trying to find a suitable niche to nestle into and pupate within their furry cocoons. In my youth these were one of the caterpillars we called 'woolly bears' as they curled up into a little ball of fuzz when disturbed.



Anthela acuta caterpillar



Pterolocera caterpillar



Anthelid Caterpillar



Chelepteryx collesi - Batwing caterpillar

Anthelidae is the family which includes the Australian lappet moths and recent molecular phylogenetic studies have resulted in reincluding the family in to the superfamily of Bombycoidea, which includes most of our larger colourful winter moths seen in and around the Surf Coast.

The subfamily Anthelinae consists of a total of nine genera and 94 species with approximately 14 species living on the Surf Coast with many others found in the mountains, deserts and tropical rainforests around Australia. It is my understanding that the Anthelidae family is endemic to Australia and New Guinea.

They often come into our external lights, where they settle relatively quickly with their wings open.

However, they typically go back into the forest before dawn where they prefer to rest during the day. The genus *Anthela* contains the most species and can range in wingspan size from 40 to 60 mm. This genus can be relatively plain in various shades of brown and orange with a central band running through the forewing and hind wings. Their caterpillars mainly feed on various eucalypts.

The smaller Anthelids from the genus *Pterolocera* are smaller with wingspans of 30-35 mm. These are a darker, reddish-brown colour with a furry thorax with the males adorned with unusually large antennae. Their caterpillars are more prickly than woolly and are to be found eating the local onion grass on the roadside verges around town.



Anthelidae: *Pterolocera amplicornis* Grp

Our largest Anthelids are from the genus *Chelepteryx* and they have wingspans of 140-160 mm. There are two colourful species found on the Surf Coast. Their larvae feed on the local myrtles and gums where they can grow up to 15 cm. They have irritating urticating hairs that are hard to dislodge and should not be handled. The adult moths have brightly coloured orange and red hind wing patterns which I believe alert possible predators to their unsavoury taste. I am not sure that bats can perceive the colour; however, they would be able to identify their slower laboured wing beats.



Chelepteryx collesi
Batwing Moth



male left top, left below;
female, above

There are other smallish Anthelids with wingspans of 30-40 mm that we occasionally see. Often with stronger cryptic wing patterns, these species can be found in the more arid drier Mallee and Messmate forest to the north of the Surf Coast.

As always, these moths along with all our other wonderful insects are essential players in our local ecosystems, with most being night time pollinators, weed controllers and food sources for our mammals. Their larvae are vulnerable to pest control insecticides so please think twice before using any such indiscriminate insect-killing foggers and sprays.

Some moths of the Anthelidae family



Anthela basigera - Toothed Anthelid Moth



Anthela acuta - Common Anthelid Moth



Chelepteryx chelepteryx - White-stemmed Acacia Moth



Anthela nicotiae - Urticating Anthelid Moth



Anthela ocellata - Eyespot Anthelid Moth

Mary D. White's botanical art collection

Sally White

The library of the Royal Botanic Gardens Victoria (RBGV) is digitising its botanical art collections and is currently focussing on the water colours of Mary Dunbar White (1910-1996). Angair digitised all of Mary's work – including her marine, insect and fauna paintings – before donating images of the flora paintings to the RBGV some years ago.

Mary D. White retired as principal of Ballarat Girls' High School to Anglesea and joined Angair in 1976. She devoted the next 20 years to the society, documenting the area's environmental wonders both in formal documentation lists, in print and in paint.

She served Angair as secretary, treasurer and president and was a successful lobbyist for the purchase of land for public reserves in the Ironbark Basin and at Urquhart Bluff. Unsurprisingly, she was made an Angair Life Member and an honorary Master of Science from Deakin University. She was awarded the Medal of the Order of Australia and the Mary D White Heathland Reserve section of the Great Otway National Park was named in her honour.



Mary White (centre) at the opening of the reserve named in her honour, 1996

The Botanic Gardens said in a recent Facebook post that Mary White 'was deeply connected to its heathlands around her home in Anglesea. Over decades she documented the region's flora with extraordinary care – painting everything from seaweeds and fungi to ferns, orchids and grasses.

'Her works are notable for their fine detail and striking realism, capturing her subjects as vibrant organisms rather than static specimens. Hundreds of these richly detailed paintings are held in the State Botanical Collection, offering both scientific and artistic insight into Victoria's coastal flora.' The RBGV's Mary White collection will be available online later this year.

Angair has a digital set of all Mary's depictions of the local flora and fauna as well as some original works which are held in the Angair library.



Messmate, Urquhart's Bluff, January 1983



Weedy Sea Dragon, Anglesea, January 1977

Tiny Wasp Orchids bring hope for autumn sightings

Margaret MacDonald and Alison Watson

It's been another extremely dry summer which leaves us wondering how the autumn orchids manage to grow and survive, but we remain hopeful.

The first autumn orchids to appear are usually Autumn Wasp Orchid, *Chiloglottis curviclavia*, Midge Orchids, *Corunastylis sp.*, and possibly Parson's Bands, *Eriochilus cucullatus*. And we are pleased and amazed to report that tiny paired leaves of the Wasp Orchids are emerging from the dry soil in two sites.



Autumn Wasp Orchid

Sharp Midge Orchid, *Corunastylis despectans*, is usually the first of the midge orchids to flower, growing in heathy woodlands. The purple-maroon Bearded Midge, *C. morrisii*, has long hairs fringing the labellum and grows in open areas. Fringed Midge Orchid, *C. ciliata*, with yellowish-green and red colouring, is found in open grasslands. Later the rare Large Autumn Greenhood, *Pterostylis ampliata*, Tiny Greenhood, *Pterostylis parviflora*, and Brown-tipped Greenhood, *P. clivosa* will appear.



Sharp Midge Orchid

By April we'll be looking for the heart-shaped leaves of Mosquito Orchid, *Acianthus pusillus*, and the elliptical, green, red-veined leaves of the Fringed Hare Orchids, *Leporella fimbriata*.



Fringed Hare Orchid

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 Orchids of the Anglesea District. The new edition is available from the Angair Natural History Centre on Monday and Thursday mornings, online through the Angair website and from Anglesea News & Lotto and Great Escape Books in Aireys Inlet.

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Our Parrot Paradise

Ellinor Campbell

Visitors from Europe are often entranced by our parrots, which include lorikeets, cockatoos, rosellas and budgies, as they have no native parrot species. Our colourful, raucous parrots form such a contrast to their native, sweet-singing, better-behaved, duller birds. In the wild they may only have seen the Rose-ringed Parakeet, which originally came from Africa and Asia, and has become naturalised, or feral in many countries. Of our 75 Australian species, 16 can be found in our region.

Visitors are always chasing photos of our 'out-there' **Sulphur-crested Cockatoos**. A few years ago, Angair was asked to help filmmakers from Poland shoot a documentary about our Cockies, which they call 'Karkadoos'. They filmed them in many locations such as on rubbish bins, and with a child chasing a flock in a paddock – they certainly had no trouble finding them.



Image: Rob Shepherd



Image: Margaret Lacey

Becoming increasingly common here are other smaller white parrots: **Long-billed and Little Corellas**. These two species also form large noisy, if less raucous, flocks. Birders call Long-billed 'cut-throats' due to the long pink 'gash' at their throats. The bright pink patch around the eye also helps to distinguish them from their smaller relative, the Little, which has minimal pale pink around the eye, plus a small crest.



Long-billed Corella Image: Jordan Ayton



Little Corella Image: Margaret Lacey

One of my favourite parrots is their larger relative, the **Yellow-tailed Black-Cockatoo**, which is generally seen flying in small groups with a distinctive relaxed wing beat. Like so many birds they have a daily and seasonal routine to visit known food sources. One group used to arrive at our house about 9 am every morning, in the 'right' season, to feed on the nuts on a hakea hedge that is long gone.



Yellow-tailed Black Cockatoo Image: Margaret Lacey

Slightly smaller, and less common are **Gang-gang Cockatoos**. The male with its distinctive red head and crest really stands out, but I prefer the female with her subtle, finely-barred, light-red and grey breast feathers. Someone reported that a regular pair, when visiting a bird bath, take turns to sit at a vantage point, appearing to keep watch while the other drinks. However, I recently saw two drink at the same time but not close together, at a forest dam – maybe because the dam was bigger. I'd be interested to know about other people's observations.



Gang-gang Cockatoo - male
Image: Michael Prideaux



Gang-gang Cockatoo - female
Image: Michael Prideaux

Next down in size are **King Parrots**. Everyone living in closely populated areas of our townships will have been visited by them as they hopefully 'pipe' their readiness to be fed. They regularly return even if we, wisely, refuse to feed them with really inappropriate yeasty bread. They are especially demanding when the holiday and weekend visitors have left. The male with his rich green back and stunning orange front is unmissable, and a less colourful female with green head is usually in attendance with a whole tribe of squawking fighting family members if food is plentiful.



Australian King Parrot - male;
Image: Julie Mitchell



Australian King Parrot - female;
Image: John Cull

Flocks of three types of noisy, highly energetic colourful lorikeets are becoming more obvious here as they sweep past, before landing in a tree in flower, and shrieking and squabbling in a food fest orgy. The two most common are the **Rainbow and Musk Lorikeets**. They are a bit smaller than the **Crimson Rosella**, and the less common **Eastern Rosella**. The immature Crimson Rosella often confuses people as their early plumage is green, and looks very different from the bright red and blue of the adult. The Eastern Rosella, well known for its picture on tomato sauce bottles, is becoming more common here, but prefers open grassy areas to the forested areas inhabited by the Crimsons.



Rainbow Lorikeet
Image: Margaret Lacey



Musk Lorikeet
Image: Margaret Lacey



Eastern Rosella Image: Margaret Lacey



Crimson Rosella, male
Image: Jordan Ayton



Crimson Rosella, female
Image: Rob Shepherd

Rainbow is well named having a scarlet bill, rich blue head and body of yellow, orange, bluish-black, and green, with a prominent orange chest. The Musk is mainly green, with a brilliant scarlet patch on the front and sides of its head, and has a shorter tail. Both species have a very similar musical screech which makes them hard to identify by sound. Trying to locate them high in trees is amazingly difficult considering their bright colours, but the green back is clearly great protection from predators. Flocks of the plainer **Purple-crowned Lorikeets** are much less common. Their smaller size, blue-purple forehead and thin buzzing call distinguish them from the two other species.



Purple-crowned Lorikeet
Image: Jordan Ayton

Of similar size are the very rare **Swift Parrots**, which fly inland through coastal areas on their winter migratory route to and from Tasmania. We had a bird walk in Ocean Grove in May some years ago where this was our target species. They are regularly seen there at that time of year enjoying the flowers of the Yellow Gum, *Eucalyptus leucoxylon*.



Swift Parrot Image: Joseph Morlan

I normally associate the soft-grey and pink **Galah** with open areas. However recently I have noticed them more often over forested areas as they wildly fly overhead, swooping joyously in the wind, while screeching noisily.



Galah Image: Rob Shepherd

Our smallest, and most famous but critically endangered bird, with less than 100 thought to exist in the wild, is the **Orange-bellied Parrot** (OBP). It over-winters here in coastal areas, flying to and from southern Tasmania. The Werribee sewerage plant is the best location to try to see them. A few years ago, a visiting birder, who stopped by the bridge on the Painkalac Creek, saw one feeding on its favoured food, Beaded Glasswort, which is plentiful there. It is the only confirmed sighting I know of in our district. We do see many of the very similar **Blue-winged Parrots**, with which it is often confused. Trying to identify the OBP by looking for the orange belly is rarely the answer. The OBP is a rich green with poorly defined areas of attractive pale blue. The Blue-winged has olive green plumage, and larger, clearly defined areas of dark blue.



Orange-bellied Parrot
Image: Rob Shepherd



Blue-winged Parrot
Image: Rob Shepherd

A final rarity in our area, but not elsewhere, is the **Red-rumped Parrot**, a bird of open countryside. The male has a brilliant emerald-green head and back, and the female is pale grey-green. Some years ago, while leading a group on an OBP survey at Lake Connewarre, I had moved on from some of the group when I had to hurry back to identify a possible OBP. A very enthusiastic seven-year-old was mightily disappointed to learn that the pair of small parrots, one rich green and another paler green, sitting near each other on a tree away from the wetlands was actually a pair of Red-rumped parrots, and not an OBP and a Blue-winged. They can be confused when the rump is not visible. But, as always when birding, the location is an important part of identification, and OBPs are unlikely to be found perching at a distance from wetlands.



Red-rumped Parrot Image: Margaret Lacey

References:

Graham Pizzey & Frank Knight, *The Field Guide to the Birds of Australia*, (2003) 7th edition, Harper Collins, Sydney.

Tim Low: *Where Song Began* (2014), Penguin Group, Melbourne.

How to identify a bad wattle

Sally White

A new Anglesea resident recently asked how she could tell if the seedlings in her property were the weedy Sallow Wattle, *Acacia longifolia* var. *longifolia*, or a good local acacia. The ubiquitous New South Wales natives are easily identified in late winter with their masses of yellow cylindrical flower spikes, pretty but unwanted.

Fortunately, identification of non-flowering plants is also easy. The leaves, or phyllodes, are dark green and straight or slightly curved with tapered ends. Their most distinguishing feature is the two or three visible veins that run along their length which is between 5-25 cm, although ones on the Surf Coast are usually only around 10-12 cm long.

Seedlings are easily pulled by hand. If the plants have become shrubs or trees, cut the trunk as close to the ground as possible and quickly paint the stumps with herbicide.



Yip yip in the night

Marita Bak

My conservation studies have taken me on journeys into the forest at night, participating in biological surveys to find and observe arboreal marsupials and owls across Victoria. While most people prefer their warm beds, I find myself stepping out into the dark to listen and look for elusive nocturnal wildlife.

In Anglesea, the roof of our house is part of a local possum thoroughfare. To practise my night-time observation skills, I wait to hear the familiar shudder of the overhead service line that the ringtails use to 'cross the road' to access our roof and the eucalypts beyond.

One night in early December, I was on our balcony with my torch and, after sweeping the beam through the treetops, located possum eyeshine. I observed two ringtails huddled together in a Golden Wattle, their distinctive, white-tipped tails coiled beneath them.

From the darkness behind me, I heard a soft chirping that was neither frog nor bird. Our balcony faces the upper branches of a hollow-bearing messmate, *Eucalyptus obliqua*, which attracts native birds during the day and possums at night. My sweeping beam highlighted a small grey-brown creature sliding along the branches of this messmate, then rapidly disappearing into the dense cover of a wattle. The creature's tail was dark and bushy, so I knew it was not a ringtail. Searching further, I found it crouching in a branch junction, and on closer inspection, noticed dark furry frills along its creamy underside and a striped, blunt head with large, round eyes. To my great delight, I had spotted a Sugar Glider in our garden!



Ringtail Possum Image: John Lenagan



Krefft's Glider Image: John Lenagan

In Victoria, the Sugar Glider is now recognised as Krefft's Glider, *Petaurus notatus*. These small gliders, approximately 20 cm long with a similar length tail, are abundant in suitable habitats and prefer to forage in open eucalypt and acacia woodlands. Living in small social groups, they are hollow dwellers, lining their homes with fresh eucalyptus leaves and building characteristic circular nests that they keep spotlessly clean. Gliders can travel over a kilometre to enjoy a diet of nectar, tree sap, insects and their larvae, arachnids and other small vertebrates.

Just after Christmas, I saw the glider foraging in the same messmate. This time, it was doing 'zoomies' in the tree, running up and down the stringy bark and leaping from one branch to the next. I saw it scratching for larvae and pushing its nose beneath the loose bark layers to flush out more insects. Every jump exposed its outstretched furry membranes, or patagia, as it chased the fleeing moths. Krefft's Gliders can glide up to 50 metres when launching from high branches or tree trunks, steering their flight with their bushy tails and limbs. I have only seen one animal, but suspect there may be a glider family nearby, as two animals were calling 'yip yip' to each other from neighbouring eucalypts. Our garden is still connected to the national park via messmate and grey gum corridors between the houses, and I feel very fortunate to have witnessed the glider's natural behaviour from my balcony. Just as quickly as it appeared, the glider vanished, the soft swish of leaves and momentary sway of the dark canopy betraying its passage through the night.



Krefft's Glider Image: John Lenagan

The easy way to collect seeds

Sally White

Birds have a big role in the dispersal of seeds from fruiting plants. My bird bath often holds a scatter of seeds. It's usually the Pied Currawong that has swallowed a juicy fruit and later regurgitated its indigestible seed. In summer, daily deliveries of the hard round seed of weedy Boneseed numbered 15-20. I have saved them to destroy safely late when I can burn them in the fireplace.

More recently, the currawong has delivered more welcome seeds. The creamy seeds of Sea-box, *Alyxia buxifolia*, with their easily recognisable pointed ends are cleaned of all flesh and skin, all ready for sowing in the Angair propagation shed. So too are the tiny seeds of Coast Beard-heath, *Leucopogon parviflorus*. These are much appreciated because the seeds of this species need time in a bird's gut to break the seeds' dormancy and allow them to germinate.

So bird baths are not only good for birds; they are great for plant propagators.



Sea-box seeds



Coast Beard-heath seeds

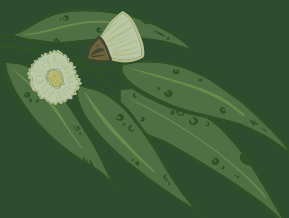


Boneseed seeds

Angair Quarterly - Autumn 2026

Need a workout with friends? Join the Angair weed warriors for 90 minutes getting rid of the environmental weeds that plague the Surf Coast. The weeders work on public land and meet on the first, third and fourth Monday morning each month.

Find details of each weeding session in the monthly Angair News.



We acknowledge the Wadawurrung of the Kulin Nation 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 respects to their Elders past and present who continue to care for this place.

This issue:

**Editor: Sally White; Copy Editor: Liz Humphreys
Production: Olivia Clarke, Mirai Kirsanovs
Bill Clarke**

Next issue:

Our next issue will be published in June 2026 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'.