



Streamlines

Newsletter of the Pullen Pullen Catchments Group Inc.

November 2021

Anstead Bushland Reserve is again the focus of this issue. Jim Williams reports on activities to date including new species of plants and animals found within the Reserve. Karen Roberts adds to this with a report of a new butterfly. Jim also makes interesting observations on the relationship between effort and reward over time. Corinne Foster rounds out the Anstead articles with her reactions as a new volunteer.

Jim Williams very kindly represented PPCG at the Lord Mayor's Catchment Round Table and reports on his experience on page 8. Changing the subject completely, John Ness discusses the retreat of glaciers and what is happening to the water released as the glaciers melt. Finally, we have a brief introduction to one of the most under-recognised group of organisms in our environment – the lichens.

Streamlines would never make it to publication if it weren't for the members who contribute items, Brian Dean who proofreads every issue, the ladies at PEEC who print the hard copies to go by mail and Emma Barrie and Liz Dominguez who between them make sure email announcements of each issue are sent out and each issue is uploaded to our website. Thank you all. You make my job very easy.

All members are welcome to submit articles to Streamlines via helian@retirementresorts.com.au. The deadline for the next issue is 15th February 2022.

Very best wishes to all our members for the Christmas Season and the New Year.

Helen Ogle
Editor



CONTENTS

Page

Pullen Pullen Catchments Group.....	2
News.....	3
Friends of Anstead Bushland (FOAB) – Activity Update.....	4
New Butterfly in Anstead Bushland Reserve.....	7
One New Volunteer's Perspective.....	7
The Lord Mayor's Catchment Round Table – Report.....	8
Ice to Water.....	10
Lichens.....	11



Pullen Pullen Catchments Group

A Landcare Group

Website

www.pullenpullencatchments.org.au

Meetings

Meetings are held at 6 pm on the first Wednesday of each month at Pullenvale Environmental Education Centre, 250 Grandview Road, Pullenvale.

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Membership Options

Membership fees are:

- Annual Membership – \$10 per person payable on March 1 each year
- Life Membership – \$100 per person

We are delighted to accept donations.

- a) Send a cheque payable to PPCG to PO Box 1390, Kenmore, 4069 or
- b) Transfer the funds electronically to BSB 064 152, Account No.10107038 Ref: your name.

Working Bees

Anstead Bushland Reserve – 1st Sunday of the month, 8.30 – 11 am (April-September), 7 – 9.30 am (October-March)
Pullenvale Forest Park – 2nd Sunday of the month, 8.30 – 11 am (April-September), 7.30 – 9.30 am (October-March)

Tools, gloves, etc are provided at Working Bees. Just wear sturdy boots and sunsafe clothing and bring water and a hat!



"The PPCG acknowledges the support of the Lord Mayor's Community Sustainability and Environmental Grants Programs for a grant to help with administrative, bushcare and educational costs"

Dedicated to a better Brisbane

NEWS

Anstead Bushland Reserve Jim Williams has provided an extensive report which begins on page 4. In addition, new posters have been placed in the glass cases in the picnic area and work is continuing on updating the ABR brochure.

Pullenvale Forest Park The main focus is on removing weedy vines. Deer are proving very destructive in the Park and an illegal bike track has been destroyed.

Airlie Road Park Mowing and weeding around trees continued.

Moggill State School Nursery project Low level activity and watering has continued thanks to Karen Roberts. In principle agreement has been reached with Andrew Wilson of MCCG to recycle the larger plants from the Moggill school nursery to PPCG and MCCG members by returning a small number (~20) to MCCG nursery each month. People wanting to use the larger plants can then get them from MCCG on the usual day – that is, the first Monday of each month from ~ 9am till noon. Plants could be available to Moggill school parents on certain school activity days such as fetes. This will be confirmed with Karen and the school. Currently, there are about 100 trees in the nursery and ~ 50 of these are large enough for distribution.

Website Emma is working on wording changes and incorporating information about the Bradley Method in use at ABR

Wildlife Irene reported that recent storms have led to a large number of young birds needing care. She is trialing a scheme under which children interested in working with animals will be trained to return young birds that have become separated from their parents to the parent birds. She again drew our attention to problems associated with the use of Ratsak (see Streamlines November 2020). Dying rats and mice introduce Ratsak into the food web and many other animals are affected. Irene is concentrating on training and mentoring wildlife carers and pointed out that many more are needed.

Twenty-second Annual General Meeting

will be held at 3:00 pm on Sunday, 5 December 2021
at the Pullenvale Environmental Education Centre, 250 Grandview Road, Pullenvale

As well as having our normal Annual General Meeting this year, we are very lucky to have one of our members, Karen Roberts, who has become a butterfly fanatic, to address us on her passion for butterflies. Her address will be restricted to her knowledge and experience of butterflies found in Anstead Bushland Reserve so will be very pertinent to all our members who make use of our fantastic bushland amenity.

All financial members are invited to attend and one can become a member at the AGM. So please set aside this date to come and support your local bush care group.

Members are encouraged to apply for committee positions. Nominations need to be made prior to the AGM as per the forms provided. Nominations can be called for at the AGM for any positions that are vacant or have insufficient nominations.

If you are unable to attend, we would appreciate your proxy. You can nominate any PPCG member to be your proxy, including our president, John Ness. Please send proxies by post before Friday, 3 December 2021 to: PPCG, PO Box 1390, Kenmore Qld 4069. Alternatively, you may email a scanned, signed proxy form to contactus@pullenpullencatchments.org.au

We hope to see you at the AGM. The meeting will be followed by our usual drinks and finger food.

To assist with catering, we ask that you RSVP to contactus@pullenpullencatchments.org.au

Friends of Anstead Bushland (FOAB) – Activity Update

Jim Williams

Firstly, a big thanks to everyone for their efforts, both directly in the bush at Anstead and also in administration roles. The Bradley Method of Bush Regeneration (see page 5, August edition Streamlines and <http://anpsa.org.au/APOL4/dec96-5.html>) is progressing well at Anstead Bushland Reserve.

Each of the 8 ‘pegged zones’ designated for practice has an area of bush 16m x 16m. Importantly these areas of bush have been left undisturbed for many, many years. There have been no poisons used, nor have whipper snippers attacked it, nor any vigorous weeding leading to soil disturbance. The bush is far from original; however it has good potential for natural regeneration.

Currently there are 4 pairs of bush carers working across their individual 4 ‘pegged zones’ and being guided in the Bradley method and weed/native identification. The initial step is to keep weeds within these areas infertile, wherever possible. This is achieved simply by removing only the flower heads and seeds, no other part of the weeds are removed (vines are cut close to ground level and also at eye level). No great effort, simply using secateurs, a knife and listening to the sounds of the bush and observing the animals around us. Guidance on plant identification and methodology is provided along the way so even the novice (who may only be able to differentiate a grass from a tree) is able to participate. Even children can get involved (we all know how much they LOVE getting their hands on their parent’s secateurs and snipping things!).

The next stage will be to record the location of all “Naturally Occurring” (native) plants growing in a pegged zone. Both paper based and electronic options are provided to record this information. Although identifying a native species by name may not come easily to most (particularly those of us who need glasses to really see what we’re doing), after a few sessions most participants are able to differentiate the primary Anstead Bushland Reserve weeds from the natives (and if they don’t know – they ask, or we get a specimen off to the Herbarium). It is a wonderful journey seeing bush carers learning about and identifying what is growing within their own pegged zone. Yet, more importantly, it is necessary to know what is growing where, before bush regeneration starts and the species variability changes with seasons and wet/dry years.

Already since we started in July 2021, we have “discovered” 3 plant species that, as far as we can determine (through publically available wildlife databases), have never been previously recorded growing in the reserve. They are *Swainsona queenslandica* (Darling pea), *Tricoryn elatior* (common rush lily) and *Sorghum nitidum* (brown sorghum).



Darling Pea (*Swainsona queenslandica*)

The hardy *Swainsona* can spread via underground rhizomes, has wonderfully bright purple flowers and is very drought tolerant. Six of these plants have been found in the one location.



Common Rush Lily (*Tricoryn elatior*)

Tricoryn elatior (common rush lily) has yellow flowers that are displayed following spring or summer rain. Near the Swainsona we also “discovered” *Sorghum nitidum* (brown sorghum), a tufted grass.



Brown

Sorghum (*Sorghum nitidum*)

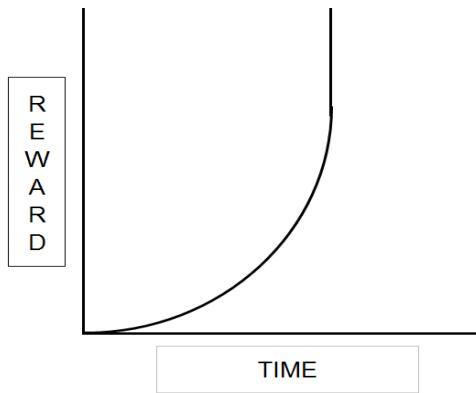
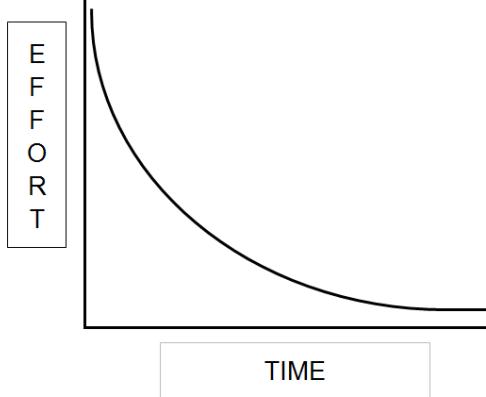
A big thank you to the Queensland Herbarium at Mt Coot-tha for confirming the identifications, along with the specialist grass expert who volunteers time (off the payroll) to assist interested citizens.

Once the weeds have been made infertile and records have been made of the location of natives, bush regeneration can commence. Within each pegged zone, areas of good natural growth are identified and the Bradley Method of Bush Regeneration is then applied to each of these “islands”. We now have over 1000 sq m of bush committed to care using the method. With natural bush regeneration the following 2 diagrams are worth considering.

Effort and Reward

1.Effort decreases with time. Gardening it is not! So there is no poisoning, whipper snipping, digging, planting, watering, fertilizing, composting, landscaping, propagating, staking etc. Just patience with the gentle art of weeding and applying targeted areas with a thin layer of weathered forest mulch. It is an opportunity to allow nature to take back control by gradually removing the advantages for growth away from the weeds and swing back in favour of the naturally occurring natives that have miraculously managed to survive under the advancing weed. So as time passes the effort needed from natural bush carers reduces.

2.Reward increases with time. To see the natural world respond to the advantages that you, as a bush carer have given it, is a rewarding privilege. Natural beauty is very much about how and if you actually see what you are looking at. It can be our attentiveness that is lacking, our capacity and inclination to do the work that this wonder requires. So with natural bush regeneration, the rewards should not be sought. Nature will provide them when and how she deems to be correct.



As a tangent endeavour that adds more meaning to our bush rehabilitation efforts, we are also recording wildlife habitat and wildlife sighting. Mammals and reptiles recorded include goanna, echidna, red necked wallaby, swamp wallaby, possum, deer and fox. Birdlife includes white-browed scrubwren, eastern whipbird, double-barred finch, red-backed fairywren, apostle bird (or pheasant coucal).

Even the rock within the reserve is vital. Within the pegged zones, there are classic rock habitats for the threatened *Delma torquata* (Collared Delma). This legless lizard forages during the day seeking out small insects. The invasive weed Creeping lantana (*Lantana montevidensis*) smothers rocks and compromises the habitat for this threatened species. We are hopeful that by carefully applying natural bush regeneration techniques (The Bradley Method), their habitat will return and support their survival. We are watching and planning future projects with BCC to help restore Collared Delma habitat and reduce threatening processes of weed invasion within the Anstead Reserve! If you would like more information please say g'day if you see us on the first Sunday of each month.

Collared Delma (*Delma torquata*)

Source: <https://bie.ala.org.au/species/urn:lsid:biodiversity.org.au:afd.taxon:92ec5b2c-1f8f-4d29-b088-77bacaebe99f#>



The Pullen Pullen Catchment Group is blessed with a variety of bush care sites that accommodate a range of bush care styles. Within the Anstead Bushland Reserve there waits an opportunity for you to practise the Bradley Method of Bush Regeneration within your very own area. Help, advice, resources, demonstrations and support are there for you. Whether you are a seasoned bush carer or a novice, your involvement is really very welcome.

New Butterfly in Anstead Bushland Reserve

Karen Roberts

Last month (September) I found a butterfly in Anstead that hadn't been recorded in Brisbane Biggest Butterfly Count surveys last year – the long tailed pea blue, or *Lampides boeticus*. Not as spectacular as the beautiful black and white swallowtails but it shows we have a very special reserve that supports some interesting species that we can be part of finding out more about.



Long-tailed pea blue butterfly (*Lampides boeticus*)

One New Volunteer's Perspective

Corinne Foster

As a local to the Bellbowrie area, I have often enjoyed walking the many tracks through the Anstead Bushland Reserve. Like many others, I have often lamented over the number of weeds that appear to be strangling and squashing the native plants. If only I knew how I could help. If only I had the time or energy.

One Sunday morning, in an area near the Quarry Lookout, I was lucky enough to come across people from the Pullen Pullen Catchments Group at their monthly bushcare morning. After chatting with some of the members I decided to join one of their bushcare mornings which are usually held on the first Sunday of each month. It was here that I was introduced to the Bradley Method of Bushcare. I discovered that this felt less like a Working Bee and more like a rewarding journey of discovery.

I enthusiastically signed up as a member and was given a 16m x 16m area of bush with another PPCG member to care for. Our first task was to start in the centre of our given area by making the weeds infertile. I could recognise Cobblers Pegs (Black Jack), so my first step was to snip off their flower and seed heads and place them in a bucket for later removal. The next weed I was shown was Billy Goat Weed (*Ageratum conyzoides*). Again, it was a matter of removing the purple flower heads and those turning to seed. While working in a small area at first, we were careful not to step on and break the often, fragile natives underfoot which I was beginning to recognise. To date these plants include Wombat Berry, Scrambling Lily, Kangaroo Grass, Dianellas, Lomandras, Cockspur Thorn just to name a few. It felt good to have the opportunity to finally help our struggling natives to recover from weed invasion. Not by laboriously digging or planting, not by spraying with herbicides, but by gradually giving the advantage back to the natives.

It never felt like the work was hard or tedious but more somewhat satisfying. I felt as if I could relax in a wonderful bushland setting, among like-minded people. While gradually being given the knowledge and tools

to make a difference. One morning while we quietly snipped away, a red-necked wallaby rested nearby. There were fresh scratchings near an old rotting log where an echidna had been foraging the previous week. On another occasion a family of Red-backed Fairy-wrens flitted between the bushes. Passing butterflies were even identified by my knowledgeable bush partner.

Each time we returned to our area we could notice a gradual reduction in the number of weed flowers and seeds. We would spend a short time checking the area previously worked on for new flowers and seeds before moving to an adjacent area. There are many steps to the Bradley Method and this was just the first, yet already there was a sense that we were doing something to help our native environment. My partner and I may only be able to make a small difference in the area we have been entrusted with but this was more than I could do before. I can only envisage what more could be achieved with greater community interest and support.

Maybe you could help out by joining our effort with the guidance of the PPCG under the support of the Brisbane City Council. If being in the bush is not your style of fun, maybe you could help by taking plant samples to the Queensland Herbarium at Mount Coot-tha for identification.

I have often heard people say, "Start in your own backyard" and we are lucky enough to have the Anstead Bushland Reserve right on our doorstep. Maybe over time more people may have the opportunity to join what we affectionately call ourselves – Friends of Anstead Bushland.

The Lord Mayor's Catchment Round Table – Report

Jim Williams

I attended The Lord Mayor's Catchment Round Table at City Hall on the morning of Thursday 7th Oct along with some ten representatives of other Catchment Groups. Five agenda items were presented to us and questioning around each was accommodated. An overview of each follows:

30 years of Nature Conservation in Brisbane

Susan Dymock (Senior Program Officer Bushland Acquisition) reflected upon the journey from the early 1990's to the current day. There are now 80 restoration sites across Brisbane, 134,616 plants grown and 65,064 hours volunteered. The cost savings to the BCC was estimated to be greater than \$30 per hour. One goal is for Brisbane to achieve 40% land area for parks and reserves, currently sitting in the vicinity of 38-39%. An interesting overview of the historic changing structure and objectives was given.

Creek Catchment Program

Jenny Staples (Senior Coordinator Community Partnerships) thanked the efforts of all involved. As a city with such a large diversity of natural environments, community needs and growth it was reassuring to hear Jenny's overview. The general impression was that the BCC is trying to set and achieve worthy goals for green spaces. Comparisons were made across the sprawl of our suburbs from the Coast to Norman Park to Mt Crosby. The challenges each Catchment Group face align with their circumstance in interesting ways. Some areas are transformed completely. Concrete drainage ditches being transformed to areas of a "manmade" natural creek environment. Another gentleman who wishes to establish a new creek rehabilitation site faces ongoing barriers relating to possible historic land/soil contamination of the natural creek site. The journey has been extensive for him and the site is currently devoid of vegetation and yet to be endorsed. Other Catchment Groups (eg MCCG, PPCG) operate in less urban environments with more of a preserving focus, rather than an establishing focus.

Brisbane Catchment Network

Alex Vanek (President of Brisbane Catchment Network) overviewed bush care activities across the network. He provided a range of data aligned to this.

Council's sustainable water use and drought readiness

Aoife Soden-Taylor (Senior Engineer) focused on the water strategies that SE Qld and BCC have in place, from Wivenhoe to the tap, usage rates, restriction triggers, historic data etc. Some relevance to the Catchment Group's activities was overviewed, including basic water conservation, mulching etc.

How bushland and waterway values are considered in planning and managing Brisbane's parks

Helen Favelle (A/Parks Policy and Planning Service Delivery Manager) overviewed the various classifications of parks within the BCC area. Comparisons were made between inner city parks and more natural areas (Anstead Bushland Reserve, etc). Each park is divided into areas of function and the resources needed identified. This ranges from exercise equipment, toilets, playgrounds and pathways, to the isolation of high value natural areas for wildlife etc. Opening green space to the public, with their varied needs across the extent of Brisbane is no easy task.

Open question time and closing

As often is the case, time ran short and 12 noon was upon us, leaving little opportunity for this.

Questions

During each presentation the floor was open to questions. Some questions related directly to the area of content being presented, whilst others were tangent questioning which were welcomed. General comments were also welcomed.

Examples are:

- Funding model and grants for Catchment Groups.
 - Acceptance of a 5 year plan submitted by a Catchment Group triggers annual funding (typically \$5000). Twelve of the 14 Catchment groups (including PPCG) have entered into the development of their plans successfully.
- Transparency between BCC Community Partnerships, other BCC bodies and Queensland Government Departments. The effectiveness of what the BCC and the Catchment Groups are trying to achieve may be compromised by other departments. Examples included
 - Increase in wildlife kill due to Main Roads installing solid guardrails in the vicinity of bush close to catchment group areas.
 - New residents moving out from inner suburbs to the outer bushland areas being unaware of Local Assets Law and their responsibility to protect native vegetation. This results in illegal removal of trees. Suggestion was made that arborists could be required to sign off on BCC documentation for the approval of tree removal before commencing their work.
- How are areas of high biodiversity value (flora and fauna) protected from damage caused by public use.
 - High value areas are left undeveloped (except for fire trails)

Recording of The Lord Mayor's Catchment Round Table meeting

The meeting was videoed and the BCC will make it available for viewing.

Benefits of Meeting

Provided a significant overview of the challenges and strategies the BCC have to address in such a diverse area of Australia. Consideration for the natural environment, community needs, population growth, funding and the 2032 Summer Olympic Games all contribute to a balance that is not an easy goal to achieve.

Meeting and spending time with BCC employees in senior roles is priceless.

Considerations to benefit Catchment Groups at future meetings.

- Little opportunity was provided for direct discussion between Catchment Groups. An inclusion in the agenda items for this would have been welcomed by many. Although open discussion during morning tea and lunch was welcomed, little opportunity outside of this arose.
- Very little advice or guidelines were provided around the process and practice of bush regeneration and rehabilitation. Guest speakers would have been a wonderful addition.

- Disappointment was expressed over the lack of information on strategies relating to water. How to increase water efficiency for a site was seen as a high priority and not addressed in a way that explained a balanced healthy eco system.

Conclusion

The morning was worthwhile and I would recommend others to attend if they are motivated to do so. My apologies for any omissions or errors, however I think I have covered most of the content. Thank you for the opportunity to represent the PPCG at the 2021 Lord Mayor's Catchment Round Table.

Ice to Water

John Ness

When the Ancient Mariner finally got to the great south land of mist and snow he observed that:

“Ice mast high came floating by/As green as emerald
The ice was here/ the ice was there/the ice was all around”....

Coleridge wrote The Rime of the Ancient Mariner when Europe was going through an unusually cold period and the operative word in the above is “was” as over the last 30 years in particular, humans have been doing a great job of turning ice into water. Today the Ancient Mariner would have to go further south to find all that ice.

Satellite techniques along with ground measurements indicate that we have changed 30 trillion tonnes of ice into water with about 28% from the Arctic sea ice, about 25% from the Antarctic ice shelf and 20% from mountain glaciers. The Greenland ice sheet threw in another 20% and the rest (7%) is made up from southern ocean sea ice loss.

How much is 30 trillion tonnes? This is a sheet of ice about 1000 x 1000 km in area (about 60% of the land area of Qld) and 30 m thick. It takes about 3000 TWhr of energy to melt all that ice, that is, to just convert the ice to water at 0°C. If the whole of Australia’s electricity grid output over the past 30 years had been devoted to only heating ice then this would have provided almost enough energy to have melted that volume of ice.

The most dramatic loss of ice is that from glaciers which is not immediately obvious in Australia which is the only glacier free continent. There were around 220,000 glaciers world-wide and over the past 20 years the rate of glacial ice loss has been accelerating and has reached about 270 billion tonnes per year. This is equivalent to a block of ice approximately 6.5 km along each side converted to water each year. It is the smaller glaciers that are thinning the fastest and NZ currently holds the record at a thinning rate of around 1.5 m per year. The relative rate of ice loss from glaciers has been so high that the peak rate is probably past but only because there is now much less glacial mass to be melted. What remains will melt even faster.

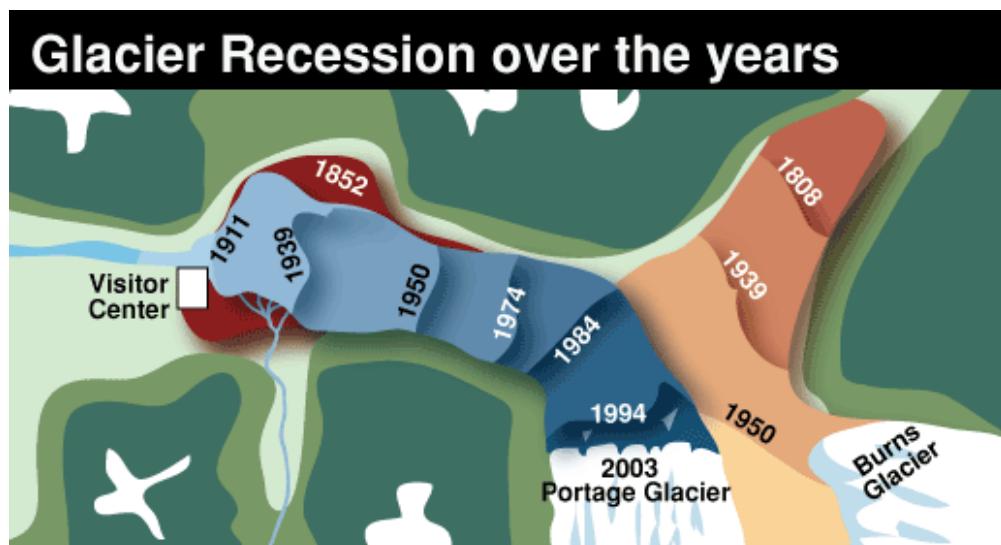


Diagram illustrating retreat of the Portage and Burns Glaciers in Alaska between 1808 and 2003

Where has all this water from ice gone? Some of it has gone into inland lakes, some into the atmosphere but most has found its way to the oceans where it has contributed to sea level rise. Sea ice loss and that from the non-grounded ice shelves do not affect water levels but land ice loss does and this has added ~ 40 mm to ocean levels or about half the observed increase this century. The other half is from ocean expansion due to the water warming. The water from glaciers melting contributed about 15 mm to this 40 mm increase and this water loss will have serious consequences as glaciers represent one of the largest storages of fresh water on earth.

Lichens

Helen Ogle

Lichens (or lichenised fungi) receive little attention from most people possibly because they are perceived to be of little or no major economic or social importance. In the past, they have been used for food, medicine and dyeing. However, it is now recognised that lichens are potential sources of antibiotics, are of use in archaeological dating and are valuable indicators of pollution.

Some lichens are considered to be among the oldest living things. An Arctic 'map lichen' has been dated at 8,600 years, apparently the world's oldest living organism. Lichens are among the first living things to grow on fresh rock exposed after an event such as a landslide or earthquake. The long life-span and slow, regular growth rate of some lichens can be used to date events.

Lichens are composite organisms consisting of two components – an alga or cyanobacterium (formerly blue-green alga) and one or more species of fungi in a relationship that benefits both components.

The cells of the alga or cyanobacterium live amongst the thread-like hyphae of the fungus where they are protected from the elements (e.g. excessive sunlight, mechanical injury and desiccation). They are also provided with moisture and inorganic nutrients absorbed by the fungus from the environment.

The algal or cyanobacterial cells within the fungal matrix capture energy from the sun and produce sugars to build into more complicated compounds needed by the alga or cyanobacterium. After the algal or cyanobacterial cells die, the fungi utilise these compounds for their growth and reproduction.

The balance between the component organisms is easily upset by slight changes in environmental conditions, especially increases in air pollution, which is why lichens are good indicators of pollution. They are extremely sensitive to acid rain.

Lichens occupy almost every ecological niche from Arctic tundra to tropical rainforests. Some have developed adaptations for resisting desiccation and live in deserts while others survive in low light intensities under rainforests or survive frozen in Antarctica. There are over 2,000 species of lichens endemic to Australia found in all but the most arid regions.

Lichens can grow on almost any surface – rocks, walls, roofs, bark, leaves, other lichens, in the soil and even in toxic slag heaps. Usually specific lichens are found on specific substrates. Whilst lichens grow on many organic substrates such as bark and wood, they are not parasites. They are simply using the substrate as a base on which to grow.

The body of a lichen is called a thallus. It consists mostly of fungal tissue but its shape and form is influenced by the algal or cyanobacterial partner. It resembles neither component organism. For our amateur identification purposes, four growth forms can be recognised:-

1. **Crustose lichens** which grow in flat patches firmly attached to their substrate. They often crack into small sections and may even be powder-like.

2. **Squamulose lichens** which have small lobe-like scales and often a secondary thallus of upright branches which bear the reproductive structures.
3. **Fruticose lichens** which have an erect thallus with round or flattened stems.
4. **Foliose lichens** which look like leaves loosely attached to the substrate.



A crustose lichen



A squamulose lichen



A fruticose lichen



A foliose lichen

The colour of the thallus may vary from the common grey-green to yellow, orange or red depending on the pigments present. The type of alga or cyanobacterium present may also influence thallus colour producing a slate-grey, brown or olivaceous thallus. Lichens containing green algae produce bright green or green-yellow thalli. Thallus colour may also depend on whether the thallus is wet or dry.

Specialised vegetative or reproductive structures which aid in identification may or may not appear on the thallus. However, description of these is beyond the scope of this article. For further information, see <https://www.anbg.gov.au/lichen/what-is-lichen.html> and <https://en.wikipedia.org/wiki/Lichen>.