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L. Skabo

Craspedia glabrata, a macro photo taken on Ben Lomond (see page 16)

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Contents

From The President	3
<hr/>	
Study Group Highlights	4
<hr/>	
Report From Council	6
<hr/>	
Annual General Meeting	7
<hr/>	
APST At Blooming Tasmania	8
<hr/>	
Members' Get-together 2023, Ben Lomond	10
<hr/>	
Revegetating Australia	19
<hr/>	
Wizardry of Wasps: Part 2	22
<hr/>	
Wollemi Pine – <i>Wollemia nobilis</i>	27
<hr/>	
Membership Information	30
<hr/>	
APST Directory	31

From The President

President Louise Skabo



It has been an excellent summer for Tasmania's flora in native gardens and in the wild. Members have enjoyed this floral display on excursions and walks and at the get-together in January.

The Members' Get-together saw 49 attendees come to Ben Lomond NP – a full house in the two ski chalets. As usual, it was an opportunity to meet and get to know other Groups' members better – such a range of remarkable backgrounds, skills and interests in our society - such an accumulation of knowledge about Tasmania's native plants, its vegetation, geology, soils and other subjects. It was particularly satisfying to see quite a few newish members attending and we hope they enjoyed the social and learning aspects of the gathering. Thanks to Northern Group's Roy Skabo for his work in organising the event with support from Andrew Smith.

We are lucky in that we have two get-togethers this year and members are enthusiastically booking accommodation for Hobart Group's Tasman Peninsula event on the 4th, 5th and 6th of November. This is a spectacular part of Tasmania. The APST Website Steering sub-committee is already preparing the plants list, linked photos and descriptions, with input from Northern and some Hobart Group members, to be available in the Resources section of the website under Plants in the Wild.

While at Ben Lomond, members contributed good suggestions in a brief survey about the future of APS Tasmania and the Strategic Planning Group, made up of members from all Groups, is meeting in March where these ideas will be further discussed and developed.

It is very positive for our society's future, to see members willing to be involved like this in the many diverse activities and tasks, keeping APST a vibrant and dynamic organisation. This way we will steadily increase our profile in our communities while striving to fulfil our objectives.

The Society's Group AGMs and Council AGMs are being held in February and March, so aim to attend and become/remains an active member – maybe as an assistant to an appointed role to help lessen the workload for others while gaining satisfaction and friendship by contributing.

Let's make 2023 a year of doing our bit as a volunteer to keep our Society thriving and helping to promote and protect our wonderful native flora. ☺



**It is with pleasure that we
welcome the following new
members to APST:**

Sue Robertson; Lydia Coleborn; Victoria Jansen-Riley; Gemma Korpershoek;
Jocelyn Northey; Jess Brown
and returning members
Eileen Dean and Jozina MacQueen.

Study Group Highlights

Riitta Boevink,
Study Group Liaison



Groups have held discussions about face-to-face meetings versus Zoom. Some groups, like the Garden Design and the Grevillea Study Group have 'chapters' that meet locally, as in Brisbane and Sydney. There are no Study Group leaders in Tasmania and Study Group members would not know if there are members of the same group in their neighbourhood. Using Zoom would be a way of establishing connections.

Acacia Study Group Newsletter No 153 Dec 2022 :

Leader: Bill Aitchison, Website address: https://anpsa.org.au/study_group/acacia-study-group

A lot of work has been done over the last year or so in modernising ANPSA, which hosts the Study Group websites.

This newsletter includes a reference to a 'nurse tree', *Acacia orites*, a large subtropical tree which was referred to as a suitable nurse tree. A nurse tree refers to a large fast growing tree that can shelter a smaller tree or plant.

The newsletter is very useful source for identification of Acacia species. Many members send photos requesting help with identification, or describe how they were able to identify species and forms. There is also a note from the Wartook Gardens in the Grampians owned by Royce and Jeanne Raleigh. They have had much success with *Acacia leprosa* 'Scarlet blaze'. Their oldest plant is now about 20 years old. They have propagated them from seed and have seedlings occurring naturally in the garden. All have come true to colour. Royce recommends a position sheltered from wind. My own experience would confirm that. As soon as our Scarlet Blaze reached over 2m in height, it broke in the wind.

There are comments on pruning Acacias, that includes a reference to the late Marion Simmons, our Tasmanian Acacia expert. The reference is to her book *Growing Acacias*. There is also an interesting discussion on Acacias as weeds, both in Australia and other countries across five continents. Peter Goldup in Victoria is developing new colourful varieties of garden friendly Acacias. Photos of these interesting forms are included. There is a major article commemorating the 30th anniversary of the National Wattle Day, the first of September.

'Pea Mail' Pea Flower Study Group Newsletter No 4

Leader/ editor Shirley McLaran

This is a colourful, informative newsletter, that should be of interest to our members as Tasmania has several pea flowers. The newsletter includes description of a pre-conference tour from the Kiama conference as well as of the FJC Rogers seminar that was themed 'Fabulous Peas'. Shirley is planning to start Zoom meetings for members. The group also has a Facebook site for members. This is a very useful Study Group as pea flowers are often difficult to identify. There is a detailed identification guide for five genera belonging to the Mirbelia tribe.

Correa Study Group Newsletter No 65, Dec 2022

The leader's position is currently vacant. Newsletter editor : Linda Hascombe.

There are descriptions of Correas in the wild as well as in a garden setting. Linda describes her mixed experiences on trips to find Correas. She comments that coastal wattle had become a monoculture in one reserve, limiting Correas to edges of the walking track. These had been cut off to keep the edges clean. There is advice on propagation from seed and on the mailing of cuttings by post.

There is an amazing framed picture portraying pressed Correa flowers created by Linda Hascombe. This was used by the Pomona APS group in 2017 to promote the Rutaceae family at their annual flower show.

Dryandra Study Group Newsletter No 84 Feb 2023

Leader: Margaret Pieroni

Margaret comments that the subsuming of Dryandras into Banksias has drawn attention away from Dryandras. The Banksia and the Dryandra Study Groups have continued to be separate.

This issue contains a very interesting report by Tim Darrington on growing and propagating Dryandras in France. This is followed by an article by Kevin Collins who runs the Banksia Farm in WA. At the Banksia Farm they also grow and propagate Dryandras. There is advice on propagation, as well as description of a special technique to extract the Dryandra seeds from their capsule without damaging the seeds. The Banksia Farm is now 36 years old. They have a complete collection of Banksias and the current goal is also to grow a complete collection of Dryandras. So far they have 124. Kevin writes that this leaves 18 more to acquire. ☺



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Report from Council

Vice-President Leoni Read



APST calendars: Once again, APST calendars have proven to be very successful, as 305 were printed and sold within a very short time.

APST Handbook update: President Louise's update of the APST Handbook is nearing completion. It was decided to complete the review of the Editor, and Secretary and Treasurer's roles at the March meeting.

Eucryphia Reports were discussed. It was decided that the President's article should be a welcome to readers and the Vice-President's report should focus about Council decisions.

Reports to Council from APST groups should be succinct

Membership survey: Phil Watson, our Conservation Officer, attended the meeting, and requested that a survey be sent out to our members as a preliminary to the conservation strategy.

The survey is intended as a tool, sent out to understand what our membership would like to be involved in, to motivate enthusiasm, so the resulting strategic plan evolves from their ideas. This will be a national first for a conservation strategy. The survey questions will be sent to councillors for comment. As the Council Strategic Plan also has a survey planned, it was suggested that the two be combined.

Group Records: archiving group records were discussed. As discussed previously, group records will now go on the group drives.

Groups were consulted about membership lists, and the consensus has been that no email addresses should be posted on the web. As people indicated they would like access to membership lists however, if it is on the Group Google Drive, it can be accessed by individual group Secretaries, and shared as needed. ☺



M Slattery

The small and dainty *Correa alba*. So plentiful in some gardens that we sometimes don't see it.

Australian Plants Society Tasmania Inc. Annual General Meeting

Saturday 25th March 2023

Please join us at the Tasmanian Arboretum, Eugenana.

This is an opportunity:

- To vote in the Annual General meeting
- To see your council in action
- To visit and purchase from the North West Group's nursery
- To explore the Arboretum itself.



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APST at Blooming Tasmania, Woolmers, October 2022

Louise Skabo

APST NG members were not overly optimistic about the weather for Blooming Tasmania at Woolmers. Setting up the marquee on Friday saw such wild wind and rain that we feared the tent would not be there by Saturday morning with our 16 buckets of colourful native blooms destroyed. We were very fortunate with generous neighbouring exhibitors allowing us to store the flowers in their fully enclosed tent overnight and by early Saturday the sun was shining, the wind had abated a little and the crowds began arriving. We were also well situated next to a coffee van and a very popular Afghanistan food stall. This meant visitors lined up for coffee and food and we had time to gain their attention!

This was not hard for, as usual, the flowers did the talking for us plus the excellent, informative and colourful posters prepared by NG members Kay and Roy Pallett while I was away enjoying myself at the APST conference. New member, Kirstin Seaver also gave knowledgeable input to this marquee display. The posters depicted the three Groups main activities:

1. Nursery/Propagation/Sales
2. Meetings/Speakers/conservation work /Christmas events
3. Walks/Excursions(bush/gardens)/Get-together(Maydena).

As well, we had large posters on each Group's upcoming Plant Sales and our brochures on all three Groups, our 2023 calendars and other plant brochures.

A most popular and successful marketing idea was offering children the chance to choose flowers and make their own posies. Margaret Hosford was the perfect APST promoter having a winning way with both the children and their captive parents who were fully informed about our society!

As well as the above, thanks go to the other five NG members on roster who happily answered lots of queries about the flora on show, growing native plants and our plant sales. Unfortunately no new members were enlisted but we know our display outshone most of the exotics around us and hopefully broadened the mind of the gardeners attending. About 600 came through the gates and we were happy it was a successful promotional day for APST and our beautiful native plants. ☺



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APST Members' Get-together January 2023 Ben Lomond

Louise Skabo

The access to the Ben Lomond plateau and the ski village is via the dramatic Jacobs Ladder steep zig-zag mountain road – a little daunting if it is your first time driving there.



The views across the NE are impressive from Ben Nevis and Mt. Saddleback to Mt. Victoria and Mt. Albert in the distance. Luckily, we could see these upon arrival and on Sunday but in between there was swirling mist on the mountain, very atmospheric but somewhat chilly when the wind arose on Saturday afternoon. However, the two chalets, Northern Tasmanian Alpine Club (NTAC) and the Rovers Ski Club, were warm and cosy and the food prepared by chef Charlotte, tasty and generous. NTAC's large dining/sitting room was an hospitable area for members to mix and converse as well as enjoy the communal meals. On Friday evening, Keith Corbett gave an excellent talk on the geology of Ben Lomond while John Davies pointed out the unusual native plants of the park. Members showed a pleasing willingness to participate in the Saturday pre-dinner brain-storming session relating to APST's future. Topics included Membership, Partnerships/Organisations to work with and Engaging Schools and Young People. The APST Strategic Planning Group obtained much useful information.

Northern Group thanks all attending members for making this a most enjoyable gathering, Roy Skabo for his thorough organisation and excellent information on the APST webpage, Andrew Smith for adding the links and photos to Roy's alpine plant descriptions, our walks leaders, especially John Davies – how wonderful to have this expert who patiently and enthusiastically led three trips to Hamilton Crag, and our group treasurer, Rosemary Verbeeten. ☺

Four different walks were offered and members' accounts follow.

Photographs are attributable to Louise Skabo, Bruce Barker, Andrew Smith, Gilly Zacks.



Carr Villa Summit Pass Track.

Louise Skabo

The early Saturday morning view from my window looked along the valley towards Ben Nevis and a brilliant blue sky. As I watched, the mist from the valleys below Ben Lomond started to rise and within 15 minutes was pouring around the ski village. Unfortunately, this mist persisted, obscuring the impressive distant views on the walks that day.

Those 17-plus members who had chosen the Carr Villa-Summit Pass Track car pooled down Jacobs Ladder to the Scout Hall (I got a ride in the Tesla!) and began the steady climb towards the Plains of Heaven. This walk was led by John Tabor with David Meadows a patient backmarker for the slow group wanting to name all the flowers from our downloaded APST website alpine list or from an internet site — identifying plants with fellow members is a most enjoyable part of get-togethers.

Telopea truncata (endemic) and *Oxylobium ellipticum* were all but finished but *Bellendena Montana* (endemic mountain rocket), *Epacris serpyllifolia* (endemic alpine heath) and *Acrothamnus montanus* (beardheath) were in their prime.



Above: *Bellendena Montana*



Centre: *Acrothamnus montanus*



Right: *Epacris serpyllifolia*

As we climbed to the higher alpine region, the endemic *Richea scoparia* and *R. acerosa* species were putting on a good show from cream to dark orange. *Orites revolutus* bushes were seen in flower but endemic *O. acicularis* (yellow orites) and *Grevillea australis* had all but finished.



Left and centre: *Richea Scoparia*

Right: *Richea acerosa*

The season was a little late so the *Gentianella diemensis* E. Tas. snow gentian was mainly only in bud and I spotted only one of my favourite tiny *Montia australasica* white purslane among the broken dolerite rocks on the Plains of Heaven. On the other hand, I have never seen the *Euphrasia collina* bloom so abundantly – some clusters were stunning.



Above left: Members at the top of Hamilton Craggs.

Above right: Their view from Hamilton Craggs



Although the mist started to close in when we reached the Plains of Heaven, we still appreciated the beautiful patterns in the landscape made by *Astelia alpina* (pineapple grass) and the endemic *Pterygopappus lawrencei* (sage cushion plant) and other cushion plants..

As the wind picked up, we sheltered behind dolerite outcrops to enjoy our salad wraps and fruit cake for lunch. At the Summit Hut, some hardy members were determined to reach the second highest mountain peak in Tasmania, Legges Tor, despite the fact that there was no prospect of the magnificent views with which it often rewards the climbers.

Other members returned via the Summit Link Track back to the village. Note that many of the plants we saw were endemic species – some of our unique Tasmanian alpine plants.☺



Top: *Astelia alpina* (pineapple grass)

Below: *Pterygopappus lawrencei* (sage cushion plant)

HAMILTON CRAGS WALK

Roy Skabo

We were very fortunate to have John Davies, co-author of an excellent survey of the Ben Lomond flora, attending the get-together. He knows the plants intimately and is an excellent teacher. He did this walk three times (!) during the weekend, due to demand from almost everyone at the get-together. I joined him on the first of these walks, on the Saturday morning. As the crow flies the one-way distance is only a few hundred metres; three or four hundred metres across the flat valley floor followed by a steepish but very manageable climb to the top of Hamilton Crag.

John was bombarded by requests for identifications, which he patiently provided. Many of the plants we saw were the same as the ones described above for the walk from Carr Villa to Legges Tor. In addition we noted several smaller daisies of the *Erigeron* genus, mauve *Brachyscome spathulata* and the very photogenic *Ewartia catipes*, another delightful daisy species.



Top: *Ewartia catipes*, Above left: *Ewartia catipes* close-up Above right: *Brachyscome spathulata*

The highlight of the walk was seeing the rare cushion plant *Veronica ciliolata*, found in New Zealand and on Hamilton Crags and nowhere else in the world. No-one had any theories to explain the very unusual distribution of this species. It was in full flower.

Because of the fog not all of us climbed to the top of the crags and those who did were not rewarded with the normal magnificent view, but no-one complained. It was a superb botanising experience. Those members who did this walk on Sunday morning did get the views, but that is the luck of the draw. ☺



Veronica ciliolata,



Veronica ciliolata
subsp. *fiordensis*



Members enjoy the view from the top of Hamilton Crag.

The Summit Link Track

Andrew Smith

Legges Tor, at 1572 m, is the second highest peak in Tasmania. Our plan was to walk the new Summit Link Track from the village, joining the Summit Hut track and then the more challenging route over Legges Tor ridge and down over patches of bare bedrock, scraped clean by glacial action, to the ski-lodge for lunch. On a clear day, from this track above the ski village, there is a lovely view over to Hamilton Crag, across the Ford River, where another group is on a quest to see the *Veronica ciliolata* cushion plant. But today we are spared the distraction of the view. As the mist thickens we focus on the ground and the plants near the track.

The *Richea scoparia*, *R. acerosa* and *Bellenden montana* are spectacular with the *R. scoparia* in full bloom, looking dramatic in the mist. *Acrothamnus montanus*, with its delicate white flowers and red and orange berries, and *Pentachondra pumila* are everywhere.



Left: *Acrothamnus montanus*,
Right: *Pentachondra pumila*



Smaller shrubs and herbs line the track. We are particularly keen to see *Ewartia* species, having been asked to look out for it and very soon we all are fooled by *Argyrotegium mackayi*, cunningly pretending to be *Ewartia planchonii*! Fortunately we are better photographers than botanists and experts will correct our mistake later. We notice that *A. mackayi* is spread by water; it lines watercourses in the track.

The mist, meanwhile, is thickening and the group is spreading out, so we decide to turn back at the Summit Hut – after that point, the track becomes less clear and there is a danger of someone getting lost. This means we will miss seeing the beautiful, delicate *Montia australasica* growing amongst the rock strewn west facing slopes and the strange looking *Oreomyrrhis eriopoda* which grows there, but we decide that safety is the first priority. We do, however, see *Abrotanella forsteroides* and *Pterygopappus lawrencei*, the two cushion plants that grow at higher altitudes, before we turn back.

As we return the mist lifts for a few minutes and we see the Hamilton Crag's group in the distance. For a moment we wonder if we were right to turn back, then the mist closes in again, as if to confirm our decision. We head to the lodge to show off our photos and see what the other groups have found. ☺

Little Hell (short) Circuit

Louise Skabo

Glorious weather as a group of 14 members set out along the Little Hell track, a misnomer for this beautiful walk between cushion plants, alpine tarns full of tadpoles and with Stacks Bluff looming in the distance 15km away. This track follows the cross-country ski poles and then turns west towards Giblin Peak (1569m). We took a short cut across Surprise Vale and over the craggy ridge south of the ski village.

Highlights were the convivial company, the flora and the geology – the glaciated scoured dolerite columns whose formation had been explained to us by Keith Corbett. In the cracks of these rocks we espied *Ewartia catipes* and growing in the well nibbled marsupial lawns were groups of *Senecio pectinatus* along with *Celmisia asteliifolia* (silver snow daisy) and mauve daisies, *Brachyscome spathulata*. Bright pink *Stylidium graminifolium* bloomed next to us while we enjoyed a break eating Charlotte’s excellent nibbles and the *Richea scoparia* was colourful and abundant. In the creek valley, *Drosera arcturi* flowered in the sun along with *Goodenia montana* (used to be *Vellaia montana*) and *Ourisia integrifolia* (endemic mountain whitebell). There were scattered *Craspedia glabrata* (endemic little alpine billybuttons) and many of the distinctive leaves but no flowers as yet of the *Cotula alpina* (alpine buttons).

The scree sections made it slow going at times but sighting the picturesque ski-village below raised spirits as walkers skied on their pant seats down a soft, grassy slope to the final section (sadly I missed the photo op!). This part of the walk was like a landscaped garden with rocks, tarns edged with *Astelia alpina*, masses of *Bellendenia montana* and *Olearia obcordata*. ☺

Below:

Celmisia asteliifolia
Olearia obcordata *Senecio pectinatus*



Above: Members on dolerite hexanogon scraped glacier rocks

Below: Little Hell walk members





Above: Dolerite rock glacial displacement as mentioned in Keith Corbett's talk at Ben Lomond

Below: Members at the APST Annual Dinner at Ben Lomond



Revegetating Australia

Dick Burns

When I saw on the cover of the latest winter 2022 issue of *Australian Plants Journal* (vol. 31 No. 251) the title *Revegetating Australia*. I thought it would be a follow-up to the recent issue on 'Bushfires' (vol.30, no. 242). Rather it deals with how people restore degraded land, whether it be due to overuse, grazing by feral animals or other reasons. The articles are from Western Australia, Queensland, New South Wales, Victoria and Tasmania. In all cases, as any APST member involved with such projects know, the control or elimination requires long-term commitment, community involvement and financial backing, often from government whether it be local, State or Federal.

There is a good range of approaches in the articles in this APJ and the whole lot is well worth reading. The Tasmanian article concerns vegetation restoration to aid in the recovery of the rare Giant Freshwater Crayfish in northern Tasmania

Many Members of APST are or have been involved with environmental weeding and revegetation. Publications on the topics appeared early in the Society's history, for instance the pamphlet *Garden Plants are Going Bush* was produced in the early 1990s. I know the North West Group was responsible for or participated in the production of two booklets in the 1990s and 2000s, *Grow Local* and *Are You Growing Invaders*.

In 1972/3 the Hobart Group helped in the restoration of *The Springs* garden on Mt Wellington, which had been destroyed by the 1967 fires. Members assisted in restoring the vegetation near Frenchmans Cap after a severe fire that swept through the area in 1966. The Northern Group took responsibility for clearing weeds from a rare-plants patch in The Basin. Different members joined with other organisations, for instance Landcare or Coastcare, to deal with many degraded parts of Tasmania.



North West members at a land conservatory near Gunns Plains

For a number of years, some NW members were integral to the Penguin Coastcare group and focussed on the state public reserve at Tea Tree Point, both trying to eliminate weeds and revegetating and aiming to encourage more Little Penguins to roost. (see photo below)



There were difficulties including that the site had been both an early dump site, then a piggery, thankfully closed; the latter site had been bought by a fiery-tempered ‘gentleman’ who until we came along thought that the reserve was his land. I was responsible for planning and took great delight in planting the fast-growing and rambling shrub *Acacia longifolia* subsp. *sophorae* in the boat ramp he had constructed across the reserve.

The revegetation of plots in Tasmania depend upon either what remnant vegetation is there, or reports of explorers or early settlers. For instance paintings and sketches of The Nut above Stanley show that it was covered in forest and the lead explorer of the Van Diemen’s Land Company, Henry Hellyer, described the vegetation communities he encountered in the diaries of his exploratory trips



Circular Head, or The Nut, seen from Highfield in the 1830’s. The forest on top was gradually cleared, to be replaced by sheep, then gorse.

For the 2004 Conference tours that the North West Group organised, I included a summary of Stuart Brownlea's thesis on the vegetation around Ulverstone and Penguin; it was predominantly either rainforest or tall wet sclerophyll forest.

The dense vegetation was one of the main reasons for coastal shipping being preferred to land transport in early days; the other reason was that the local rivers would flood rapidly after rain, washing away early wooden bridges. The town of Penguin started out as a settlement of timber cutters mainly to shore up the gold mines in Victoria. The photo of old Penguin, taken before 1900, shows remnant trees on the ridge and a sawmill on the foreshore near Penguin Creek. It is printed here courtesy of the Penguin History Group.



That hit-and-miss TV show *Gardening Australia* recently had an episode from Stanwell Park south of Sydney where a resident was, over twenty years or so, clearing masses of *Lantana camara* from around his old farm. (Originally from Brazil, *Lantana* was introduced as a garden plant and spreads rapidly from seed, broken stems and suckering. I can remember playing in vast groves of it, crawling through tunnels pushed into it in Manly, La Perouse and Bexley, all suburbs of Sydney.) The resident found that in one area, he could rely on natural revegetation including remnant seeds in the ground, but in other parts of his property, he would have to plant seedlings. The first method seems to be a form of the Bradley Method, the original way of revegetation that I initially heard of, developed by a pair of sisters in Sydney dealing with another environmental weed, Privet, that was infesting valleys around Lane Cove in Sydney. The Bradley Method is basically to clear small infestations first, removing the whole plant and leave the bush to recover naturally.

When Greg Taylor and his team took on the Gorse infestation across The Nut and around Stanley he didn't have the years that the Bradley method requires. As he and the group he'd assembled progressed, they replanted; Greg started re-establishing the trees across The Nut.

When I first came to the NW Coast in 1971, the Burnie Field Naturalist Club organised an annual Boneseed (*Chrysanthemoides monilifera* ssp. *monilifera*) pull.

Older members will remember the newsreels of two tractors with chains between them ripping up mallees to convert the land to farms, with a praising voiceover; the same film would now be used to show irresponsible behaviour. So there have always been people who care for the natural environment but it has gained public attention more in recent times. ☺



Wizardry of Wasps: Part 2

Phil Watson

Introduction

In **Wizardry of Wasps Part 1** we discovered the role wasps play as both generalist pollinators who passively transfer pollen while competing for nectar with numerous other insects, as well as specialist orchid pollinators using unique 1:1 mutual relationship. Additionally, we recognized that as predators and parasites, they earned a remarkable reputation for controlling insect pests.

Part 2 of **Wizardry of Wasps** article will reveal their lesser well-known role as both ‘models for mimics’ and prey for many birds, reptiles and insects.

Flashy colour patterns provide a powerful warning message

Stinging wasps are the evolutionary envy of the rest of the insect world being able to not only defend themselves with painful stings but also market this capability with ostentatious warning colours. Wasps are immediately recognisable by their combination of bold colours commonly black with horizontal bands of yellow, white or reds and occasionally with added spots, blotches or vertical stripes. These flamboyant patterns help promote the wasp’s ability to defend themselves with its toxic and excruciating stings. Intriguingly, by making themselves obvious it is directly opposite to ‘camouflaging’.

These bold warning colours are known as ‘**aposematism**’. This term is derived from Greek ‘apo’ meaning ‘away’ and ‘sematism’ meaning ‘sign’. Unaware predators will soon get the message and will learn quickly to stay away from all similarly coloured insects. The term ‘**Mullerian mimicry**’ is applied to describe the common attire of warning colours shared by stinging wasps across many different families. Good examples are the social wasps that gather on open surfaces of nests such as suitably coloured paper wasps (*Polistes* sp.), sand wasps, thynnid wasps and yellowjackets. They often use bolstering performances to enhance the warning colours such as raising, curling or contorting their abdomens or flaring their wings when faced with threats.

This mimicry is targeted towards predators that visually seek out their prey such as birds, lizards and jumping spiders. However, mimicry is not a panacea, despite their armoured exoskeleton and sting. Skilful birds such as kookaburras can dodge the sting whilst lizards are happy to make a meal of both the adults and their brood. Countless solitary and social wasps’ nests are demolished by gardeners, pest controllers etc., whilst other wasps are splattered on car windscreens.

Wasps are models of mimicry

The success of ‘aposematism’ as a survival tactic has been embraced by both perfectly harmless wasps along with other insects such as moths, beetles, flies, bugs and even bush crickets (*katydid*s). This is known as ‘**Batesian mimicry**’ devised to mislead potential hunters using a fake promotion campaign. This results in completely defenceless insects appearing seriously dangerous! Without overstating their importance, most insect pollinators have wasp mimics. Hence it goes without saying that our glorious wildflowers are frequently reliant on these iconic models of mimicry for insect pollination services and subsequent, fruiting and seeding!

Insects benefiting from the trickery of mimicry

As mentioned, many insects rely on the trickery of mimicry for survival. Below are a series of fascinating examples of mimicry.

Flies are masters of disguise

Flies are extraordinary fakers, being nearly perfect mimics of stinging wasps. Their veiled behaviour is often accompanied by actions that are strikingly convincing. Not only do they allow the black and yellow, white, orange or red colours to do the talking but also frequent the same places and act out the same habits as the stinging wasp performs.



Hover fly (*Melangyne sp.*) mimicking yellow jacket wasp. Image courtesy ewasp.com.au¹

A well-known example is the flower or hover fly (*Syrphidae*) that selects either wasps or bees to be a model of mimicry. They differ on whether they mimic a wasp, or a bee based on what lifestyle they follow to gather flower nectar. Examples of their mastery of disguise incorporates tricks such as waving their front legs to mimic the wasp's long antennae. Additionally, since flies have huge eyes, hover flies have patterned eyes so it's hard for potential predators to tell where their eyes end, and the rest of their heads begins.

Beetle imitators dress up in wasp clothing

Colour patterns emulating wasps are generally not sufficient for beetles to mimic wasps. Although they both have munching mouths, that's where the resemblance ends since beetles have their first flight wings toughened into gristly plates known as elytra. To overcome the problem of having only one pair of wings instead of two pairs like the wasps, rove beetles and soldier beetles have additional short wing covers that leave the flying wings exposed to look like the 2 pairs of wasp wings.



A Longicorn Beetle [mimics](#) a wasp ([Eumeninae](#)) to gain protection. Image Courtesy [www.brisbaneinsects.com](#)²

Other examples include long-horned flower beetles and checked flower beetles which crawl around on flowers, logs etc., These are recognised as outstanding wasp mimics due to their colour patterns, long legs, and elongated ovipositors.

Day flying moths dress up in wasp clothes

Dressing up in wasp clothing seems strange when moths are well known to be night flyers. But this tactic makes given there exists many families of day-flying moths. For example, not only does the Australian black-headed wasp moth *Eressa sp.* masquerade in wasp clothing, but also presents a bold set of warning colours. These declare that the moths are highly toxic due to poisons absorbed from bioactive ingredients in the plants they feed on. To assist with this charade many present clear or partially clear wings and like wasps, expose their normally hidden abdomen which are banded.



Common wasp

ing couples at rest. Image Complements of Brisbaneinsects.com

moth *Eressa sp.* mat-

<https://ewasp.com.au/insects-and-arachnids/hover-fly>

A Glimpse into a few bizarre activities carried out by wasps

The intriguing habits of the spider wasp pollinators

Although adult spider wasps (*Pompilid*) are a significant contributor to flower pollination, they are often found hovering above or on the ground searching for prey which are spiders. Famous amongst these spider wasps are the very large stinging wasps from South America, known as the tarantula hawk wasps (*Pepsis sp.* and *Hemipepsis sp.*). Like many other wasps they have flamboyant warning colours with blue bodies and bright orange or scarlet wings which is reinforced by aromatic scents. They capture spiders by paralysing them with their sting either killing the spider or allowing it to linger for weeks. Once paralysed the female wasp makes a wasp burrow or drags it into an existing burrow where it lays an egg inside the spider. Once hatched the young wasp consumes the spider whilst still alive.

Continued next page





A Western Australian pompilid spider wasp has anaesthetised a large huntsman spider.
Image courtesy of Blenksⁱ

ⁱ Bjenks - Own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=6264515>

Amongst the *Pompilids* wasps are kleptoparasites of other spider wasps. They either steal the spider prey caught by other *Pompilids* by locating the burrow of the host wasp, eat the host's egg and then lay their own egg on the spider. Alternatively, they lay their egg on the spider paralysed by the host spider wasp during a distracted instant. The egg of the kleptoparasite wasp hatches before the egg of the host wasp which it then consumes.

Wasps as Gall- makers

Galls as a representation of poor plant health is a misconception assumed by many gardeners. In fact, research suggests that fleshy fruits evolved from wasp generated galls on floral components of plants. The resulting gall-covered seeds were more enticing for mammals and birds which subsequently spread the seeds. Although galls can also be produced by fungi, bacteria, mites, nematode worms and viruses, *cynipid* gall-wasps found with the plant-feeders super family *Cynipoidea* are a major contributor to galls development in many native plants.

The gall development is usually related to the egg-laying undertakings or the feeding of her larval brood. The plant rapidly reacts by developing a bulging growth because of increasing cell production in response to extra nutrients sent to the site by the plant. This delivers for the young insects, a luxurious home and food supply.

Intriguingly gall-wasps are very fussy as to which plant, they target, many only choosing one plant species. Curiously cynipid larva in galls are often targeted by other parasitic wasps such as other cynipid which trespass by co-occupying the gall enjoying all the comforts of home. Often other insects may also co-habit the gall without causing harm to the original occupier. Other wasps such as the ichneumonid wasps sense the presence of the larva inside the gall and drill through the gall to inject its own eggs inside the larva. Once hatched they feed on the larval body before leaving the gall as mature adults.



The

tiny pimple-like growths on the gum leaves Image courtesy of Roger Thomas as published in the Courier Mail

<https://www.thecourier.com.au/story/5437936/gumleaf-galls-come-in-all-shapes-and-sizes/>

Conclusion

We have learned that the vast diversity of wasps plays a vital and unique pollination role above and beyond bees. If the diversity of wasps was to experience a substantial decline, the world's ecosystems would spiral progressively into oblivion. Additionally, food production continues to improve on the premise that scarcely any insect does not have a wasp nemesis. This enshrines these eco-warriors as the best providers of precision spray-free pest control for our crops. Unfortunately, they do serve as key food resources for numerous well adapted predators. Additionally with climate change looming, their vulnerability does not stop there as many species are at risk of succumbing to magnified environmental events such drought, floods, excessive heat and cold etc. ☉

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Wollemi Pine – *Wollemia nobilis* Some Personal Recollections

Dick Burns

When David Noble abseiled into a canyon in the Greater Blue Mountains (World Heritage) Area on 10th September 1994, he was also dropping into botanical history. That is the day he found Wollemi Pine, subsequently named for the national park, Wollemi National Park and him (*nobilis*). David Noble worked with the New South Wales National Parks & Wildlife Service (NPWS) and through colleagues fast established that he had found a new species. The new-found tree resembled fossils dated from Cretaceous times (about 140-165 million years ago) and was quickly dubbed ‘the dinosaur tree’. *Wollemia nobilis* is thought to have existed as a species for 40 million years. The species has been placed in the Aracauriaceae family of conifers. Wollemi Pine is very unusual in that all specimens share the same DNA; most species have a unique DNA set, a combination of parents’ DNA. It is thought to have reproduced naturally mainly by coppicing.

Another oddity is the way that Wollemi Pine grows. It does not produce side growth branches: a friend planted his close to his house – too close I thought – but he knew about the tree not spreading. As well, each leaf is pressed to the stem for quite a distance before turning at right angles and producing the green divided leaf. The conifer is monoecious, forming both female and male cones on the same tree. These cones have distinctive shapes and form on the tip of leaf-like branches. A friend planted one in a coastal area, trimmed leaves off the sloping stem and found new stems growing from each node.

NSW authorities quickly stepped in and declared the canyon out-of-bounds and kept the sites (Wollemi Pine was later found in two other gullies) secret: they were worried about introducing pathogens plus souvenir hunters stripping the canyons (the majority of humans lack conservationist minds). In order to satisfy the public’s eagerness to have one of these strange relics in their garden, the NSW Botanic Gardens aimed to propagate as many as possible to flood the market – they settled on tissue culture. It is a pity that Tasmanian authorities did not copy that: we also have rare plants that are worthy of garden culture. Plus spreading Wollemi Pines into new areas provides a guaranteed fall-back if some awful event wipes out the wild population, as with Tasmanian Devils and so many animals in zoos.

The first release of cultivated Wollemi Pines was to each State’s botanical gardens in 2006 and later to other public botanic gardens including Kew Gardens in London (there are about twenty more growing at Wakehurst, Sussex, an offshoot of Kew Gardens.) I could not find anything about how the English plantings coped with the very hot and dry Northern Hemisphere summer of 2022. Each botanic garden specimen was guarded by a regulation steel fence: Kew’s display specimen had the same fence. Every time I visited Sydney or Canberra, I would check out the success of the planting; as the tree grew in Sydney’s botanic gardens, the fence was doubled in size. The Tasmanian Arboretum was given a specimen. Then Wollemi Pines went on public sale.

The Tasmanian Arboretum bought about twenty and, along with the donated specimen, were planted in a grove on a slope running down from other Aracauriaceae conifers such as Norfolk Island Pine and Bunya Pine. Members were invited to be part of the planting. Because the grove did well, the collection was enlarged in later years. The Arboretum has a system where you can sponsor a tree for a fee and dedicate that tree. I decided to sponsor a Wollemi Pine and dedicate the specimen to my late parents. We, the remaining family, took to calling it ‘the family tree’. Each time the Coffs Harbour niece and her family visit me, we try to see how the family tree is going. This year (2022) it was doing well; Marty is close to six feet tall (see photo p. 27). That was the first event to prompt this article.

In recent years all of Australia has been ravaged by extreme bushfires. In summer 2019-20, one of the mega-fires was destroying Wollemi National Park. Bombers dropped fire retardant around the canyon with the Wollemi Pines and national park staff went into the canyon and installed sprinklers, helping save the conifers. The same was done the previous summer when Tasmanian bushfires burning in the South West National Park threatened to envelope the even-more-precious-and-rare *Lomatia tasmanica*, but that saving did not rate the reporting of the protection of the grove of *Wollemia nobilis*.



S. Johnson



S. Johnson



D. Burns



D. Burns

Above Left:
Wollemi Pine seedlings.

Above Centre:
Seeds collected by Shaks Johnson

Above Right:
A caged Wollemi Pine in Kew 2009.

Right:
A Wollemi Pine in the garden of Jann Ingliss showing both male and female cones



Left:
Dick and niece Debbie with the recently planted Wollemi Pine in 2009.

Below:
Debbie's husband Marty with the grown Wollemi Pine in 2022.

The message from NSW that the prop-

agation of Wollemi Pine by tissue culture in my mind had become 'that is the only method' over the years. So when long-standing member Shaks Johnson said a few years ago that she was propagating Wollemi Pine from seed I thought the seeds must be hybrid. This was the second thing that promoted this article. However I'd forgotten the section in James Woodford's book where he discusses raising the species from seed. As well, *Flora of Australia* mentions the seed. And a tray of seedlings shows no variation that you would expect from hybrid seed. One of the websites from the English Wakehurst boasts that staff has succeeded in growing seedlings.

Shaks reasoned that there would be seeds present in the cones when she noticed parrots breaking in to them. She gathers her seeds from underneath trees that have had fertile cones.

Many people, including non-gardeners, have bought into the Wollemi Pine fever, some keeping their plants in pots. But considering the reported extensive root-run, I would expect lots of re-potting to keep the plant healthy and alive. ☺



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Membership Information

Margaret Killen
Membership Officer



Subscriptions are paid annually and fall due on the anniversary of the month of joining.

Australian Plants Journal (APJ) subscription to members is \$25 per year.

If members want to opt to pay their subscription via the bank, EFT or cheque please contact the Membership Officer, details below.

New members can join online via the website <https://www.apstas.org.au>

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- A. Individual, Organisation or overseas - \$40
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Members receive each year:

- Four issues of the APST journal *Eucryphia* (electronic).
- Group newsletters.
- An invitation to the annual Members' Get-together hosted by Groups on a rotational basis (usually held in November).
- An invitation to attend the biennial (every two years) Australian Native Plants Society, Australia (ANPSA) national conference, hosted by Member Societies on a rotational basis.

Members enjoy:

- New members receive a plant token to choose a free plant from their group's nursery.
- Meetings featuring knowledgeable speakers.
- Excursions to places of botanical interest, including private properties.
- Visits to public and private native gardens for inspection and enjoyment.
- Opportunities to work together on projects which protect and showcase Australian plants and promote biodiversity.
- Free exchange of information.
- Access to APST group libraries.
- Access to society publications at a discounted rate.
- Australian plants flower shows and exhibitions.
- Access to rarer plants, made available at some monthly meetings or propagation sessions.
- Propagation sessions at Group nurseries for furthering knowledge on growing plants including rarer species.
- Social interactions at Group events.

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