

Eucryphia



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Archeria comberi. Photo taken by Catherine Shields (see p.22)

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Society postal address:

P.O. Box 1205

**GRAVELLY BEACH
 TASMANIA 7276**

Editor: Mary Slattery
eucryphiaeditor@gmail.com

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From The President

President Louise Skabo



Congratulations to our new APST Life Members, Jenny and David Boyer from Hobart Group. These awards were presented at a surprise lunch during the Ross Council meeting in September. Christine Howells ensured many members of the Boyer's family were present making it a very happy occasion. Their citation and photos can be seen in this issue of *Eucryphia*.

Our national body, the Australian Native Plants Society Australia (ANPSA) held a very successful conference in beautiful coastal Kiama, NSW, in September. Congratulations to APSNSW for excellent organisation for over 200 members including the pre- and post- conference tours and bus trips during the conference. There were some brilliant speakers - Roy and my favourites were Professor David Lindenmayer AO on 'Fire, Forests, Plantations and Biodiversity', Distinguished Professor Michelle Leishman on 'Building Resilience – from species to landscapes' and Dr Kevin Mills who led a discussion on 'Rainforests: impacts of climate change'. These presentations plus several excellent Study Group presenters are now available on their website: go to ANPSA Conference 2022 You Tube site: <https://www.youtube.com/watch?v=809szV-QZ9M> and enjoy.

Congratulations to the winners of the 2022 Australian Plants Awards. These were announced at the Kiama conference and, this year, conferred upon two Western Australians, Judith Harvey (Professional award) and David Pike (Amateur award). The citations accompanying the awards can be read at <https://anpsa.org.au/australian-plants-awards-2022>. APST will again send Tasmanian submissions for these awards to the 2024 biennial conference to be held in Victoria.

Following on from my last report, APST Inc is now a member of Landcare and so partnerships can be arranged with this organisation for conservation activities which your Group might like to initiate. It covers insurance for all participating volunteers in 'Friends of..' and similar groups helping to restore/keep community bushland in good condition. Our Society Conservation Officer is suggesting a possible liaison with APST and the Mt Rumney Landcare Group Inc (MRLCGroup) re a monitoring program 'to follow the regeneration process after a cultural burn which will contrast with regeneration after hot fuel reduction burns that are often carried out by agencies.' It sounds an interesting research project. APST Northern group has started the 'Friends of Cambridge Street Reserve' under this Landcare umbrella and has a Memorandum of Understanding with Landcare, City of Launceston and Tamar NRM. APST would encourage Groups to consider the advantages of this Landcare membership in advancing the Society's objectives including 'to promote recognition of the society for educationalists and the government'.

Amanda Walker's impressive compilation of members' photographs in the 2023 calendar quickly sold. If you missed out, some outlets like QVMAG and TMAG still have some (albeit not at the members' price). Thanks to all members who contributed to this successful marketing venture.

Wishing you all a joyous Christmas and we look forward to seeing many of you at the Members' Get-together on remarkable Ben Lomond in mid January 2023. ☺

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

Ryan Philbey; Steve Charter; James Heard; Bruce and Jennifer Barker;
Penny Doughty; Karin, Amelia and Larissa Fiedler; Fran Lennard; Marilyn Honybun;
Andrea Honrigan; Anna Reddington; Mark and Sarah Pearce; Jing Yu; Gabrielle Stannus.

Our Newest Life Members, Jenny and David Boyer

The following citation, prepared by life-member Christine Howells, was the prompt for this award to two well-deserving members:

David and Jenny Boyer have been members of the Australian Plants Society Tasmania for 22 years and over that period have consistently contributed to the running of the Society and furthering its aims both within the Society and in the wider community.

Six months after joining, Jenny became Treasurer of the Hobart Group, a position she held for five years from 2001 – 2006, when she moved into the position of President for two years, and for one of those years she was also the Society President. She had two further terms as Hobart Group Treasurer (2010 – 2013 and 2016 – 2019) totalling a further eight years.

She was again APST President for two years (2019 – 2020), during which time she oversaw the major task of updating the Constitution.

Most recently Jenny has volunteered to become President of Hobart Group, filling a position which has been vacant for a year.

David joined the Hobart Group Committee in 2005 remaining on committee for at least ten years during which time he became Publications Officer for the Society, negotiating discounted prices for a wide range of texts for members around the state. He also had three terms as APST Treasurer, totalling five years.

Both Jenny and David have been Hobart Group delegates to the APST Council. They were enthusiastic members of Hobart Group Flower Show committees in the first ten years of their membership, also providing storage space for the many items required for staging these substantial displays in the City Hall.

Jenny and David were very involved with the committee organising the ANPSA Biennial Conference in Hobart in 2018 as well as in the organising of the sale and distribution of the popular APST calendars for five years.

They have participated in many of the annual Member Get-togethers and were principal organisers of the Bruny Island Members' Get-together. Jenny and David regularly participate in the monthly walks organised by Hobart Group, taking great joy in the plants, bush and varied locations and have translated this into their bush garden on Bruny Island.

David and Jenny have consistently supported each other in their varying positions and their thoughtfulness and experience is a great asset to the Society. They are both well deserving of life membership.



Family and friends gathered in Ross to congratulate Jenny and David

Study Group Highlights

*Riitta Boevink,
Study Group Liaison*



Garden Design Study Group Newsletter No 1211 November 2022

Leader: Lawrie Smith

The theme for the next newsletter, due March 2023, is 'Diversity or Uniformity'. Lawrie outlines what these concepts can mean in garden design. In a section called 'Members' stories' you can read interesting stories of creation of individual gardens, all well illustrated with photographs. AS always the GDSG newsletter is best viewed online. It is available to anyone on the website <http://anpsa.org.au/design/>

Australian Plants For Containers Study Group Newsletter No 40 October 2022

Leaders: Ben and Ros Walcott

The leaders speak about problems with excess wetness in their garden, even in their pots, due to the high rainfall in recent times. The newsletter contains many brief illustrated contributions by members. More contributions are sought.

<https://anpsa.org.au/container-plantsSG>

Eremophila Study Group Newsletter No 136 September 2022

Leader: Lyndal Thorburn

This 27-page newsletter is packed full of information on Eremophilas. It includes a printed copy of the presentation that Lyndal gave at the ANPSA conference in Kiama as a Study Group Leader. The speech is an excellent cover of the history, current situation and proposals for the future for the Study Group.

The SG offers merchandise to raise funds for various projects. The merchandise includes Christmas cards, wrapping paper and colouring books.

General comments: There has been discussion on the possibility of Study Groups having 'face to face' meetings using Zoom. Some Study groups, like Garden Design and Grevillea, have local chapters in major cities. Members meet and do garden visits and other excursions. We do not have any Study group leaders in Tasmania and probably do not have enough members of any particular Study group to form a chapter, but Zoom meetings would give Tasmanian members the opportunity to link with others more actively. .⊙

Letter to The Editor

We were embarrassed but honoured by the presentation of Life Memberships of the Australian Plants Society Tasmania Inc. in September. Such acknowledgement doesn't feel deserved when so many other members also contribute so much to the Society.

A thank you to Christine Howells who initiated the nomination and researched our involvement over the 20 years that we have been members. Thank you also to the subcommittee who must have approved the award and all those who travelled to Ross for the presentation. It was a huge surprise and a very enjoyable event, also attended by many of our family members.

Thank you,

Jenny and David Boyer.

Australian Plants Society Tasmania Inc. Annual General Meeting Agenda

Date: **Saturday 25th March 2023**
 Time: **11:00 am**
 Place: **The Tasmanian Arboretum, Euganana**

Item	Description	Responsible Person
1	Welcome: Introductions; Reading of Objectives.	President
2	Apologies	Secretary
3	Review of actions from 2022 Annual General Meeting	President
4	Acceptance of Minutes of 2022 Annual General Meeting	President
5	President's Annual Report	President
6	Treasurer's Report including Financial Statements	Treasurer
7	Auditor's report	Treasurer
8	Opportunity for questions to Council	President
9	Special resolution: Constitution amendment That the Constitution reflect that the Membership Officer shall be a member of Council Moved by L. Read Seconded: D. Thomas	President
10	Appointment of the Auditor	President
11	Election of Council Officers: President; Vice President; Secretary; Treasurer; Public Officer; Group Councillors	President
12	Next Annual General Meeting: 23 March 2024	Secretary
13	Meeting close	President

At the meeting, members will have the opportunity to:

- find out about APST operations and finances
- speak about any items on the agenda
- vote on any resolutions proposed.
- appoint an auditor
- elect councillors

At the meeting, members will be asked to vote to:

- accept the minutes of the last Annual General Meeting
- accept the annual report
- accept the auditor's report
- accept the annual financial statements

Past, Present, Future.

Snapshots from the ANPSA 2022 National Conference

Drew Thomas



For me, the theme of the national conference was explored in a diverse number of engaging ways. A program of excellent speakers, ranging from deep data driven analyses of geological and botanical time, to more specific foci on species, study groups, and initiatives both group and individual.

The Wednesday and Friday of the conference week were devoted to a variety of excursions, a handy pace change from sitting and listening.

The good news- you can still “go” to a lot of the conference on YouTube – organisers had arranged for a very skilled videographer to attend sessions, so there are now 10+ sessions available.

You can peruse the program at <https://austplants.com.au/Conference-program-and-speakers>

Clarence Slookee (Gardening Australia) introduced us in a very personable way to a day in the life of an indigenous person thousands of years ago.

Clarence at <https://www.youtube.com/watch?v=0fIMmOfnaTYandt=19s>

Other presentations were titled

Weather forecast for Kiama, September 40,000 years ago

Fire, humans and climate as drivers of environmental change in eastern Australia

We then moved to workshops for the afternoon, you can pick those up from the program link above. The conference dinner provided opportunity for award presentations, and a lively plant based quiz night.

Wednesday was a day of excursions. Mine included the Joseph Banks Native Plants Reserve, Kareela. This is a joint project between Sutherland Council and the Sutherland APS group. 2.2 ha of carefully developed plantings and pathways with many plants labelled. Well worth including if you are in the area. Details of all excursions at <https://austplants.com.au/Conference-excursions>



Thursday commenced with the AJ Swaby lecture, presented by Costa Georgiadis, who, after a few minutes at the lectern, came down from the stage and wandered around the hall to present. Certainly lively, and a challenge to the videographer. Her capture of the event is at <https://www.youtube.com/watch?v=fXMA74Wygga>

Costa enthusiastically explored his theme “What the future holds for Australian native plants” and challenged us to actions. Clearly Gardening Australia is a current ally worth further developing.

Costa then facilitated a panel of six young people, mostly school age, with a passion for the plant world. Watch them if you need a cheer up about enthusiasm among the young.

One last web reference – the panel is at https://www.youtube.com/watch?v=w3O6UPD_ko0andt=60s

To me, as we survey our aging selves, a challenge to think about connecting with those in the education systems. I’ll stop there - I’ve included some, and missed much in the interests of brevity.

Please take some time to explore the web resources. A potentially rich resource of program ideas, possibly resources if we can bring the YouTube clips live into our meetings.

ANPSA plant awards 2022

At the dinner on Tuesday September 14th, Margaret Matthews, ANPSA President 2019-2022 presented the Australian Plant Awards, to honour people who have made an outstanding contribution to the knowledge of Australian plants, whether members of the Society or not. For those members who were not present, we share with you her speech and information on the worthy recipients.

It is my very great pleasure to announce the recipients of the Australian Plants Awards. Each member State and Territory is invited to nominate individuals who have made a substantial contribution to our knowledge of Australian plants.

The Awards are judged on several criteria including involvement in research, field work and study group involvement, publications, community involvement and conservation activities. I'm really pleased that each member of the judging panel independently gave the highest score to the same person for both the Amateur Award and the Professional Award.

The Amateur Award was presented to David Pike from Western Australia.



As a non-scientist, David Pike has developed a remarkable knowledge of Western Australian native flora and fauna (including invertebrates) and habitat over 40 years. Many scientists call on his local knowledge when undertaking surveys and publications. David has been involved since the 1997 beginning of the Northern Suburbs Branch Nursery at Landsdale Farm which propagates rare and unusual WA native flora for public sale into home gardens. Around 20,000 plants are sold each year, with expert advice willingly provided by nursery volunteers on locations, species and growing. He is a key propagator and organiser, oversees the propagation of the Eremophila collection and takes a leading role in managing the Wildflower Society Northern Suburbs gardens. At the Farm David organises and participates in rescue and recovery activities, collecting species from development sites for nursery propagation or transplanting to non-threatened locations.

David was active in establishing a botanical native garden at Yanchep National Park, located 50km north of Perth and as a member of the Friends of Star Swamp Bushland, a 96-hectare Class-A Reserve in Perth's northern suburbs. David has also done critical work to preserve and enhance Koondoola Regional Bushland and Lake Gwelup Reserve.

In conjunction with WSWA, he leads a monthly guided walk and annual nocturnal and wildflower

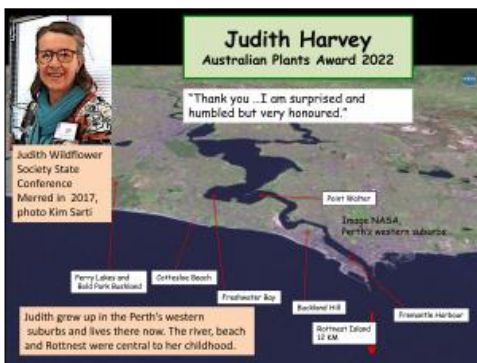
The Professional Award recipient is Judith Harvey, also from Western Australia.

Judith completed her Bachelor of Science at Murdoch University (Environmental Science, Murdoch University 1975 – 1977) and followed this with a Masters of Philosophy (Vegetation Science Curtin University 2011 – 2014).

Judith joined the Wildflower Society of WA (Inc) in 1980 when she was in her 20s. Almost immediately she became the Society representative on the WA Conservation Council, the peak group of environmental groups in WA and from 1985-8 she was Society Vice President.

In 1981 Judith began work with the then Department of Fisheries and in keeping with her conservation ethos she worked on native plant science including: vegetation description and mapping, fire ecology, conservation planning, and plant identification. She has been responsible for the completion of several important projects including WA’s Vegetation Map.

Another focus of Judith’s work was long-term ecological studies (>30 years) at three principal locations: Eneabba, Tutanning Nature Reserve, and Two People’s Bay. Long term studies are rare in ecology.



Left:
Part of Judith’s acceptance speech.



Right:
Receiving the Wildflower Society award in 2021

After returning to WA in 2007 Judith again became active in the Society. As well as Committee roles and helping to organise the ANPSA Conference in Albany, Judith joined the Bushland Plant Survey Programme (PSP) which is a citizen science programme running since 1988. Judith accepted the position of Volunteer Coordinator of the PSP in 2011. However, like most employed positions in the Society much of the time spent on the programme is in a voluntary capacity including as a leader in the field and the botanist support work.

Judith is a member of the Rottneest Island Volunteer Guides, focusing on botanical activities such as conducting plant surveys, monitoring populations, seed collecting and propagation of island plants, undertaking scientific studies, and revegetation. In the late 2010’s the RVGA members worked on a comprehensive collection of the island’s native and naturalised plants. Judith organized the PSP participation in this project, which has resulted in a book on the Island’s flora and field herbarium plant identification surveys are carried out in the Reference Herbarium at the Perth Herbarium on Wednesdays for about 45 weeks each year. These sessions involve sorting and identification of quadrat vouchers, field herbarium specimen selection, data entry and field herbarium specimen labelling. Thousands of specimens have been handled over the period. Judith focused on using these sessions to train new PSP volunteers in these tasks.

Judith is also an artist, creating lino prints and watercolour paintings inspired by WA wildflowers. .☉



ANPSA Conference Lord Howe Island Tour

Margaret Killen

I have attended many ANPSA (Australian Native Plant Society, Australia) conferences over the years and this year's did not disappoint. Every two years we are given the chance to visit different states and territories through the ANPSA biennial conference and their associated pre and post tours. This year it was NSW's turn, it was held in the beautiful south coast town of Kiama, 120kms south of Sydney.

I was lucky enough to get onto the very popular pre-conference tour to Lord Howe Island (LHI). This Island is a municipality of NSW and 780kms north-east of Sydney.

Travel from Sydney via Qantas came with the following guide:

QANTAS BAGGAGE ALLOWANCE: 2 pieces not exceeding a total of 23kg* per person, each piece not exceeding: 1st piece up to 14kg (30lb) and 2nd piece 9kg (20lb) - total linear dimensions of each piece not exceeding 140cm.***NOTE:** Lord Howe Island flights have weight restrictions. The second piece (9kg/20lb) may need to travel on a separate flight or day, so please pack accordingly.



What they don't tell you is that you are weighed holding your carry-on luggage before the return flight. The other flight issue is the wind. If it is too windy or the wind is coming from the wrong direction the flights are cancelled. There were 19 of us who were booked to fly out on Sunday but most of us did not arrive until the Tuesday, losing 2 days of our trip.

Lord Howe Island is a crescent-shaped volcanic remnant which has many natural, cultural and historical attractions and most of the island is virtually untouched forest. Much of its flora and fauna are not found anywhere else in the world. It has the world's most southern barrier coral reef and about 70% of the island is reserved as a 'Permanent Park Preserve'. The LHI Group, made up of 28 islands, islets and rocks, is recorded by



Somerset Lodge – our accommodation nestled among the palms which gave it a tropical feel.

The tourist map on the previous page shows, in green, the tracks, walks and rides I went on. The arranged tours were led by plant ecologist and climatologist Ian Hutton. Ian is the curator of the LHI Museum, he has written many books and field guides and was recognized for his contribution conservation and tourism by being awarded an AOM in 2006. The Islands greatest achievement has been to return the Island to its original inhabitants. This involved years of conservation work by removing feral animals such as goats, pigs, cats and rats (*Rattus rattus*) and this continues. The methodology was borrowed from the New Zealanders who have been very successful in eradicating feral animals from their smaller islands. Eradication of exotic plants is an ongoing and exacting mission with much of the work being carried out by volunteers.

The first day's walk was to Transit Hill, the site of the observation of the transit of Venus in 1882 which was, by accounts, difficult due to the heavy cloud cover.



One of the most significant trees is the Banyan, *Ficus macrophylla* subsp. *columnaris*, pictured on the right with Ian in the foreground.

Many of the plants, including orchids and ferns were familiar to us, it was the species that differed. Our organized forays were run to a strict timetable without the opportunity for regular stops to take photos which is the usual pattern for most plant enthusiast expeditions.



Left: Ferns are found across the island, but the Mount Gower cloud forest, shown in this image, is where they are most abundant. The image also shows Kentia Palms *Howea forsteriana* and the introduced Norfolk Island Pine.

Right: the Grey Saltbush *Atriplex cinerea*





A morale fungus (left) was found on the first day along with the Swamp Lily (right), *Crinum asiaticum* var. *pedunculatum*.



Left: *Pandanus forsteri* (Forked tree) has distinctive supportive prop roots and grows to 13 meters. The seeds are pictured on the right.



Ian delivered a couple of evening lectures on General Introduction to Lord Howe Island—geology, flora, fauna history and conservation and Birds of Lord Howe Island.

As part of his research Ian uses a drone to monitor birds on the island. The drone is seen with the sooty terns in the image on the right.





This view, from North Bay, looks towards the highest mountains Mt Lidgbird (777m) on the left and Mt Gower (875m) on the right. Our troupe are waiting on the beach for the boat to take us back 'home'. You can just see the waves breaking under the water horizon, they are on the reef at the outer edge of the lagoon.



A great spot for lunch overlooking Mt Eliza near New Gulch.



The migratory birds were just starting to arrive during our visit. These Sooty Terns circle for a couple of days before landing and nesting. The activity in the air is constant and the noise deafening. LHI is the only known breeding location in NSW, they are found over tropical to sub-tropical seas. These birds can stay at sea for 3 to 10 years spending the entire time on the wing due to the lack of oil in their feathers and only go to land to breed.



On the last day I took a break from the tours and hired a push-bike to tour other flatter parts of the island.



A

view of the settlement in the flatter middle part of the island.

parting

MEMORIES OF MARGARET ALLAN

Made a Life Member of SGAP Tasmania (APST) in 1981

Dick Burns

I met Margaret long before the NW Group of our Tasmanian Society was formed, through her children Peter and Fiona Allan. I have no photo of Margaret because I rarely photographed people. At right is Peter Allan on Mt Anne summit in 1970.



When I came to Tasmania to do teacher training at the Tasmanian University in 1970, I joined the Tasmanian University Mountaineering Club (TUMC) – I'd put my name down for several clubs but TUMC was the only one that responded. Since my course was not over-taxing, I went bushwalking most weekends and sometimes through the week. As I had a VW Microbus (from running a Scout troop in Sydney), I was very popular with the other car-less members of TUMC. Peter and Fiona were both at the university at the time and both were members of the bushwalking club. Peter and Fiona, along with other TUMC members, spoke of going out into the bush seeking floral specimens for Dr Winifred Curtis to describe and Margaret Stones to paint for the Endemic Flora books project that was proceeding at the time.



TUMC
Devonport,
Easter 1971

Since my flat was just around the corner from the Allan home in Mt Stuart, I got to know their parents Margaret and Cree. I can remember Margaret's plant nursery out the back. She became my prime Tasmanian tutor for plants that I saw on bushwalks, in that quiet way she had of speaking, graciously answering what, to born-and-bred Tasmanians must have been trivial questions. I thought I would add to Margaret's nursery when I gave her a seedling of what I thought as a learner was a King Billy Pine and what I realised later was actually a club moss. Margaret accepted it with the same grace. I must have improved because some time after, she did ask me to look out for a perennial daisy on the way to Frenchmans Cap that is now known as *Xerochrysum collieranum*.



Peter is a good photographer and helped me with my photographing the many new wonders on walks. He already had one of his photos published, I thought in Dora Burton's *Rock Gardening in Australia* but I can only see reference to Cree Allan when I look now. I went on many bushwalks with Fiona, only ceasing with her fatal trip to the Himalayas; Cree and Margaret fought to implement searches for Fiona and sought to understand the events leading up to her disappearance: Cree gave me copies of many of the letters. Margaret still smiled as she talked to you, but the loss must have been terrible for her. There were theories as to what happened to Fiona in the snow of the Himalayas but no trace of her was found – a few sightings were no help. For Fiona, her parents set up an annual prize at Tasmanian University.

Among the bushwalks I did with Fiona was a circular Easter walk from Cynthia Bay to the natural gardens of Cheyne Range then over Mt Gell to the upper Franklin River and back to the Lyell highway. I thought so much of the Cheyne Range that I organised one of my bush Christmases there (other places for chicken-on-a-spit and veggies roasted in the coals were Schouten Island, Lake Myrtle, along the Penguin-Cradle Trail and approaching the Pelion Plains).



Cheyne Range

The Education Department, wise as ever, sent me to Burnie in 1971 and whenever I'd go down to Hobart for the weekend, I'd stay with the Allans in their smaller new home. And when the North West Group started I'd go on many Hobart trips. Margaret used to keep plant lists coming out of SGAP outings and she gave me some – they formed the basis for the lists that Bruce Champion published on the APST website. Cree used to come on plant trips and he was one of the group of husbands along with Dudley Geeves and Don Closs as a core, who came along to support their flora-interested wives.

Margaret occasionally brought her friend, Dr Winifred Curtis along – the day outing to Twelvetrees Range and a weekend get-together centred on Mt Field come to mind.

After Cree died, I lost touch with Margaret. Did she stop doing anything with the Society? Some years later, I met her at a luncheon with the Hobart Group. Margaret Allan passed away soon after.

If I read the Life Members list properly, Margaret Allan was the second active member in 1981 to be honoured with Life Membership, after Kay Geeves. I feel privileged to have known her and the Allan family..☺

Wizardry of Wasps: Part 1

Phil Watson

The good and the bad!

Stinging yellow jacket wasps or hornets, buzzing aggressively around barbecues, dominating ripened fruit trees or harrowing innocent picnickers enjoying their luncheon baskets have become an undesirable sign of summer. With a menacing sting poised in their tails, wasps are unanimously detested, sworn at, whacked, trapped or poisoned. Ignoring the warnings can be perilous both for us and their potential predators such as birds and insect-feeding mammals. In fact, the Schmidt Sting Pain Index gives the highest ranking of all insect bites to the excruciating sting of the large tarantula hawk wasp, *Pepsis sp.* This menacing wasp delivers a crippling electric punch which mercifully subsides after three minutes or so!

Given these bad points, it is inspiring to know that wasps in general are irreplaceable ecological contributors. As nectar and pollen feeders, the adult pollen wasps rely on carbohydrates and protein-based fast-foods to power their frantically active lifestyle. This insatiable appetite inadvertently delivers pollination services to a multitude of wildflowers. More importantly however is their role as exclusive pollinators to a spectrum of orchids that have evolved a 1:1 relationship with wasps.



Stinging yellow jacket wasps can be serious pests. Image courtesy [Medicinenet.com](https://www.medicinenet.com)

At the top of the insect food chain, their ecological contributions do not stop at pollination as they perform predatory and parasitic roles as well. Both the adults and their caterpillars act as biological control agents voraciously preying and parasitizing pests such as spiders, caterpillars, mites, centipedes and even other wasps.

Given the wasp life cycle is dominated by the larval stage, which progresses through a series of moulting stages called instars, the developing larva become eating machines, equivalent to rapidly growing teenager boys. This voracious larval appetite keeps pests such as spiders, aphids, mites, caterpillars, centipedes etc., in check. Along with the predatory and parasitic behaviour of the wasps they also protect both horticultural crops and native plants, as well as other beneficial insects.

Where do wasps come from?

Wasps, bees and ants are all close relatives from the *Hymenoptera* family. Like bees, most wasps are solitary (80,000 species). However, there is a small group of specialised social species (850) which dwell in paper palaces with queens and workers just the same as honeybees and 'honeybags' native bees. Way back in the Middle Triassic period (235 million years ago) sawfly wasps evolved into stinging wasps or wasps that are parasitic on other insects.

By the Cretaceous period (125 million years ago) bees and ants evolved from these early wasp species. At this stage, the blossoming of floral diversity occurred in parallel when wasps and bees (akin to hairy wasps) started feeding on nectar inside flowers. Curiously, the outcome, often considered as a by-product, was the evolution of the pollination process! In fact, flowers continued to encourage this behaviour by developing flamboyant colours, alluring scents and copious quantities of nectar.

Orchid's irresistible sexual trickery to attract wasp pollinators

Undeniably wasps do play an indispensable pollination role when it comes to being exclusive (1:1) pollinators of hundreds of orchids species. However, in most cases, it is not the nutritious pollen or nectar that attracts them!

Millions of years of evolutionary change has allowed orchid flowers to develop a 1:1 or symbiotic (interdependent) relationship between wasp and orchid species. Today the orchid flowers' sexual trickery never fails to attract male wasps which are frantically searching for their virgin females. So good is this deception that a male wasp wastes a load of sperm (pseudocopulation) on the bogus female as he is undeniably convinced that the flower feels like a wasp, looks like a wasp and smells like a wasp.



Hammer Orchids *Drakaea* sp. are pollinated by males of a single species of *thynnine* wasp. Image credit: Esther Beaton/Australian Geographic

Of the hundreds of orchid species from eleven Australian genera that have evolved this mutually beneficial relationship, the large and small tongued orchids (*Cryptostylis leptochila* and *C. subulata*) are excellent examples involving an *ichneumon* wasp species.

Other outstanding examples involve male species of the *thynnine* wasp and both the hammer orchids *Drakaea* sp. (see image above) as well as the elbow and myrtle elbow orchids (*Arthrochilus huntianus* and *Arthrochilus huntianus* ssp. *nothofagicola*), many species of spider orchids (*Caladenia* sp.) and one species of flying duck orchids (*Caleana* sp.). These orchids all possess a wasp shaped labellum supported on a hinged stalk and an alluring scent resembling that of the flightless, *thynnine* wasp's female. This provokes the male to attempt to carry off the female wasp-like labellum for mating. This audacious stimulus initiates the labellum to pivot on its hinged stalk swinging the unsuspecting wasp into the column where it collects or deposits pollen.

Some of the better known orchids found in southern Australia that are also reliant on this symbiotic relationship include the large duck orchid (*Caleana major*) as well as the following spider orchids: tailed spider orchid, clubbed spider orchid, green-combed spider orchid, dusky spider orchid, summer spider orchid, Paterson's spider orchid and the rosy spider orchid, (*C. caudata*, *C. clavigera*, *C. dilatata*, *C. echidnachila*, *C. fuscata*, *C. helvina*, *C. patersonia*, and *C. pallida*)

As well as the *ichneumon* and *thynnine* wasps, the sawflies also deliver this specialised pollination service. They are also subject to the same deception resulting in orchids such as the small duck orchid (*Paracaleana minor*) being pollinated.



The weight of the sawfly landing on a large duck orchid's (*Calceana major*) column forces the labellum to spring down and trap sawfly. The bewildered sawfly exits covered in pollen. Image courtesy of www.kuriositas.com

Wasps are irresistibly lured by pollen and nectar

Flower visitations by wasps are primarily driven by their search for nectar and insect prey. Although a few wasp species such as the western yellowjacket (*Vespula* sp.) are known to be the best pollinator of some exotic flowers (*Scrophularia* sp.), in general compared to bees, wasps are less efficient pollinators. This is due to their lack of body hair and their disinterest in pollen as a primary food source.

Most flowers that attract wasps feature specific characteristics such as strongly scented orchids, shallow flowers with exposed and concentrated nectar supplies as well as flowers with dull colours. As most wasps see well into the UV light spectrum, they tend to visit white- or yellow-coloured flowers as seen in the parsley family (*Apiaceae*) family.

Many plants do not restrict their nectar output to flowers. Extra floral nectaries have evolved on many plants' components including stems, leaf petioles, fruits, bracts, and even pods. Hence even when there are no flowers, plants can still lure wasps. But what's in it for the plant one may ask? Simple, wasps are the ultimate ally in their war against herbivorous pests.

Not all wasps are parasitic or predatory!

Most wasps are parasitic (eg. yellow jackets, paper wasps, jewel wasps, etc) or predatory (cuckoo wasps, spider wasps, velvet wasps) all of which as meat eaters gruesomely provision their cells with insects. Surprisingly, however there are 300 species of 'vegetarian' wasps which exclusively provision their nests with pollen and nectar. These vegetarian wasps are often provided with exclusive private access to pollen to allow flower wasps to provision their brood. For example, a *Marsinae* species exhibits the bee-like habit of provisioning each larva brood cell with pollen and nectar. Females of these *Vespidae* wasps use their mouth parts to gather pollen and nectar from flowers such as *Goodenia* sp. and *Penstemon* sp. to provision their brood cells and for nest construction.

Continued next page



Vegetarian wasps (*Marsinae* sp.) carry pollen and nectar in their crop and regurgitate to provision their nest cells. Eggs are laid in a soupy mass before sealing the cell. Image courtesy of Simon Oliver

Aromatic trickery attracts wasp pollinators

Although sexual attraction is the main enticement for pollinating wasps, a few highly adapted European orchids (*Epipactis helleborine* and *E. purpurata*) use the green-leaf volatile scents emitted by the orchids to lure vespid wasp pollinators. When caterpillars and other herbivores feed on plants they react by releasing green-leaf volatiles. The *vespid* wasps use this signal to find their caterpillar prey. Cleverly the orchids have manipulated this signal and evolved the capability to create these volatile scents to attract wasps to pollinate their flowers.

Tiny wasps are the heroines of fig pollination

Fig fruits provide not only major economic and nutritional benefits to humans, but also more than half of rainforest animals are totally reliant on figs for food and energy. The tiny wasp heroines *Agaonids* will probably never be seen, nor will the fig's internal flowers that they pollinate. Each fig is formed by a multitude of tiny flowers inside the fruit. Being only two millimetres in size the female wasp forces herself into the fig via a small opening at the end of the fig. The wasps are driven by the enticing scents wafting from the minute flowers inside the immature fig.

Fig pollination is achieved once the tiny wasp inside the vast unripened fig fruit lays individual eggs in developing seeds of many female flowers enabling her to collect and spread pollen. Since her limited sized ovipositor does not reach the ovary inside every flower, these 'taller' flowers, free of wasp eggs will grow normally to produce copious seeds available for fig feeding forest dwelling creatures to disperse far and wide. These seeds are the crunchy grains in figs that you eat. Sadly, after laying her eggs the female wasps die inside the fig. These eggs hatch into females and worm-like newborn males. Notably the males are wingless and have grotesque appendages due to their need to fight other competing males. They emerge earlier than the females from their tiny gall-like flower nurseries in readiness to fight all other males for mating rights with the emerging virgin females. As their final act of courtesy, these doomed males bore holes through the walls of the ripened fig fruit that serves to allow the newly mated females to escape their entombment in the fig. Alas the males never see the light of day, but the mated females go on to pollinate new figs of the same species.



The tiny flowers inside this Moreton Bay Fig (*Ficus macrophylla*) fruit are being pollinated by minute Agaonid wasps (*Pleistodontes froggatti*) both being dependent on each other (mutualism). Image courtesy of Mike Schneider and Mike Brown

Fig wasp cheaters

Rather than entering inside the fig, there are *Agaonids* wasps that are known as fig-cheating wasps. These use their ovipositors and acute sense of smell to inject their eggs directly into the fig's female flowers, by piercing the fig's skin. Critically this thwarts the pollination process of all other fig wasps. If this disruption is not successful some of these fig-cheating parasites will attack and kill many fig wasp pollinators inside the fig and then follow up by devouring their larvae or their food supplies

Summary Part I

Although overshadowed by their bee cousins, wasps deserve recognition as important pollinators. Wasps crucially deliver a unique role as specialist orchid pollinators derived out of a highly evolved mutualism relationship between orchid and wasp. Additionally, whilst competing with many other insects seeking floral rewards, they act as generalist pollinators by unintentionally transferring pollen while feeding on nectar.

Pollination aside, as predators and parasites, their reputation for controlling insect pests is inimitable across the insect world. Further to these activities are lesser-known services such as those provided by wood boring larva of horntail wasps and their kin (*Siricidae*). These wasps rejuvenate forests by decomposing dead wood. This process starts with the female wasp depositing fungal spores with their eggs. This fungus develops and advances ahead of their hatched offspring, predigesting the cellulose making it easy feed for the larva. Unsurprisingly they are in turn food for their unyielding enemies, the giant ichneumon wasps.

Unfortunately, one species of siren wood wasps (*Sirex noctilio*) has a notorious reputation for destroying radiata pine forests as a result of their symbiotic fungal relationship.

As a follow on from this article, Part 2 of Wizardry of Wasps, will reveal their role as models for mimics. This poorly recognised role enables myriads of daytime insects to provide their essential pollination services. .⊙

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Archeria comberi

A new occurrence of this rare alpine shrub has been found on Hartz Mountain

Mark Geeves

On Saturday the 12th of November a small group of friends and plant enthusiasts Sally Johannsohn, Lindy Campbell, Catherine Shields and Mark Geeves, took a day walk towards Mt Snowy at Hartz Mountain Park. Those who remember my mother Kay Geeves, will know that Hartz has been our family stomping ground and Mum led many APST field trips to the area. It has a rich alpine and sub-alpine flora. In our family, we were taught from a young age to be observant of our surroundings and the associated flora. We came upon a wet lead containing bolster heath with a small stream down the middle and here were a number of woody shrubs with rose madder flowers. I knew instantly that it was something different and we photographed it. Hartz was like a garden with so many plant species in flower

After the trip we exchanged photos and I contacted Matthew Baker at the Herbarium and sent a picture of our discovery to confirm my suspicion that the plant was *Archeria comberi*.

Here is Matt's response 'I have had a look into the photo and your observation of the *Archeria* at Hartz. It is really interesting because it looks like you are right in the identification as *A. comberi*. I have had a chat with John Davies and showed him the photo and he is pretty sure that you are right too. The 'thick' leaves of this species are quite characteristic and it looks like they are right from the photo you had sent through.

The interesting thing is that this would be the most easterly observation for the species. It hasn't been recorded from the Hartz area before and not even any NVA (Natural Values Atlas) records. The closest observations are from the Snowy Range. So it seems to be a minor range extension'

It just goes to show that we still have a lot to learn about our wonderful flora and its distribution. Mum would have been so proud and so excited! ☺



'Australian Plants' Journal

The *Australian Plants* Journal (APJ) is a quarterly journal produced and published by the Australian Plants Society NSW. Each issue has a theme relevant to Australian native plants and articles are provided by authors from around Australia. The current public cost of subscribing is \$30pa.

From January 2023 the cost to APST members will be \$25. The increase is needed to cover all the cost of subscription and mailing. At present there is no digital version and subscriptions to the journal are purchased as an additional cost to your APST membership.

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Margaret Killen
Membership Officer



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From January this year membership subscriptions can be paid online. During 2022 members will receive an email at the beginning of their anniversary month inviting them to resubscribe online.

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- I. Overseas Individual and Overseas Organisation with APJ (electronic) - \$71/year

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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 states and territories 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.

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Access to APST group libraries.

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Propagation sessions at Group nurseries for furthering knowledge on growing plants including rarer species.

Opportunities to work together on projects which showcase Australian plants and promote biodiversity.

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Hobart Group News

Jenny Boyer

The Hobart Group has had some very interesting speakers who have given up their time to talk to the Group at our monthly meetings. We certainly appreciate them sharing their time and enthusiasm.

In September Rebecca Jones (UTas) spoke of the gene studies in two main populations of *Eucalyptus morrisbyii* to help prioritise the conservation of this threatened species. The Risdon Nature Reserve has had no seed production since the 1980s so the species is effectively extinct there, while the Calvert Hill population has severely declined. Both the DNA and plant appearance of the two sites are quite different.

At the October meeting Will Fletcher gave us a potted history of the Plants of Tasmania nursery which he established at Ridgeway in 1990 and ran it for 19 years. Highlights included seed collecting in the wild especially colour variations, success in propagation of *Richea pandanifolia* and growing for regeneration projects such as at UTas and Saffire Lodge. He also included photos of his other interest, creating bonsai with Tasmanian plants. This was followed by a visit to his home garden in November.

Chauncy Vale was the subject of our November talk by Graham Green, a preliminary to a visit coming up on the program. Graham, who heads the Management Committee, included the history of this private reserve, created by the Chauncy family in 1940. The reserve totals 450 hectares of mostly dry sclerophyll forest with a riparian strip, is surrounded by other reserved land and is jointly managed with 500 hectares of TLC reserve. After years of drought the bush is recovering and revegetation within large cages is proving successful. Regeneration burns have been used. Graham also showed us photos of some of his favourite rare orchids from Statewide hunting expeditions.

Eastern shore spring flowering was enjoyed with a walk to Cape Deslacs at the end of September, then on the Silver Peppermint Trail which is part of the Tangara Trail network. This was followed at the end of October with a floriferous walk to Crescent Bay on Tasman Peninsula, always one of the favourites.

Meanwhile nursery work has continued, culminating in another successful plant sale in October. Bruce and a couple of helpers are assisting students at the Kingston Primary School to plant natives in their landscaping project. .☉



Part of the Grevillea display in the Pavilion during the ANPSA conference hosted by NSW

Northern Group News

Kay Pallett

As expected spring has been a very busy season especially in the garden where there has been vigorous growth in response to a wetter than usual season. Propagation sessions while sometimes a little cool have been well supported. Janet Hallam provided clear guides on monthly tasks and approximately twenty regular members ensured that the nursery flourishes. On sale day plants were almost all sold within two hours. For November the challenge was to begin again to propagate a diverse range of new plants. Part of this year's profits from the sales were donated to the Seed Bank at Royal Tasmanian Botanical Gardens.

Members who regularly attend the Tasmanian Native Garden working bees have reported on the spring flush and rapidly growing plants that were added to the garden in autumn. Hawthorn seedlings from a surrounding hedge are a concern so another request has gone to the Council to have it removed. Below is a view at the garden with *Bulbine bulbosa*, *Chrysocephalum apiculatum* surrounding *Stylidium graminifolium* plus *Clematis gentianoides* (left)



© K. Pallett



© K. Pallett

At our the September meeting guest speaker, Jenny Powell, outlined the NSW Biodiversity Offset Scheme. A valuable presentation which gave an insight into a scheme that places biodiversity needs as the main focus. Jenny described a framework devised for offsetting unavoidable impacts on diversity - those caused by development. Any impact on biodiversity is offset through landholder stewardship agreements which are organised to ensure biodiversity gains. The presentation was very informative, giving members an understanding of the scheme's complexities and Jenny readily answered the many questions that arose.

September 24th was a busy day because NG councillors attended the State Council meeting at Ross. There was a special presentation so a few NG members made the trip to witness Jenny and David Boyer's pleasant surprise at being awarded life membership of our Society.

On the same weekend other members had set up a native plant display at the Launceston Horticultural Society Show. It was an explosion of colour, dazzling in its diversity.



© K. Pallett



© K. Pallett

There were no excursions in September but a few members managed to attend the ANSPA Biennial Conference, returning with interesting experiences to share.

Early October saw Northern Group members organise the Blooming Tasmania display at Woolmers Estate. Despite threatening weather the day was a success with people impressed with the flowers on display. Again the spring richness ensured that there was much to see. Children enjoyed the opportunity to create their own native plant posy and the newly made posters informed the public about APST Inc.

Botanists' was the theme for the October meeting. First speaker, Peter Stackhouse chose John Stackhouse who had a particular interest in seaweed. Peter, a descendent, shared some interesting family details and has two very old publications, one of which gives the Stackhouse family history between 1086 - 1935. John Stackhouse studied the propagation of algae from spores. He was a founding member of the Linnean Society. The genus, *Stackhousia*, was named in his honour by the first president of this Society, Sir James Edward Smith.

Robert Brown, the Scottish botanist chosen by member Ian Thomas, was also a fellow of the Linnean Society. Brown came to Australia with Flinders on the Investigator, collecting close to five thousand plants. Not just a collector of plants, however, Brown pioneered the use of the microscope in botany and was the first to identify the significance of nuclei in cells. He was able to explain the difference between conifers and flowering plants. His influence extended to other fields where his knowledge influenced Darwin and Einstein.

Catherine Pearce outlined the achievements of one of Australia's most distinguished botanists, Winifred Curtis. Her list of achievements is long and began with early university successes which failed to get her an academic position 'in a man's world!' It would be years later, after she had emigrated to Tasmania, that she would gain an academic appointment to a university. But we are the beneficiaries of her lifelong dedication and interest in plants - evident in *The Student's Flora of Tasmania* compiled over 40 years. Winifred Curtis wrote the descriptive and ecological notes in *The Endemic Flora of Tasmania*. This was a decade's undertaking and today the books are collectors' items. She was awarded in 1968 a doctorate of Science by the University of London for her published work. In her retirement years she continued to work as an Honorary Research Fellow in Botany at the University of Tasmania. Curtis also maintained a lifelong association with the Tasmanian Herbarium, still based there in her nineties!

It was a good night enjoyed by members appreciative of the well researched presentations and the expertise of fellow members.

This month's excursion was to Tom Gibson Reserve led by Dr. Peter McQuillan who was accompanied by Sarah Fayed. Sarah is compiling a pollen database which will be used to identify the plants visited by insects. She is doing this without the need to actually see the insect on the plant because pollen scraped from an insect and examined under a microscope will provide a record of which plants the insect has visited. Peter gave tips about observing insects on plants and that white is the colour most visible to pollinators. Seventy percent of Tasmania's native flowers are white. A most interesting day in the field with so much information about plants and their pollinators. Another bonus was the many flowers e.g. *Comesperma volubile*, *Crassula decumbens*, *Wurmbia dioica*, *Pultenaea triangulare* and several eye-catching orchids all gaining attention of not just the insects but also the avid photographers.

Leptorhynchus squamatus



Glossodia major



Caladenia fuscata



The last activity in October was a flower walk in Cambridge Reserve. Surrounding houses were letter-boxed by members of the Reserves Conservation Committee. The hope was that people might participate in a friends group aimed at improving the condition of the reserve. It was a successful morning and several people have shown an interest in this project.

October Plant of the Month presented by Roy Skabo is listed as a threatened species in Tasmania and is known in only a few spots in the highlands. This Rhamnaceae species is *Discaria pubescens*. It is a rigid, much branched, spreading shrub. Roy suggests it would be a good garden plant because it is attractive and its thorns make it a sanctuary for birds. The RTBG has offered cuttings and seeds to interested members.



*Discaria
pubescens*

© R. Skabo



Pterostylis furcata

© J. Campbell

For November Plant of the Month, Jeff Campbell chose to describe a genus, *Pterostylis* (greenhoods). There are fourteen species endemic to Tasmania. The genus has two distinct forms with the main difference being whether the lateral sepals are erect or deflexed. It was most interesting to be shown ways in which to identify species in this fascinating genus.

The November meeting which began with a full agenda was held in a different venue to see if the venue would better suit our needs. Decisions were made about donations and also money to buy printed labels for the Tasmanian Native Garden. Member, Leon Lange, has generously paid for the Cor-ten label stakes. It is hoped that more substantial labels will better inform visitors to the garden. It was agreed to contribute part payment for a previous guest speaker to allay some of the cost of her presentation in September. Nursery succession positions were touched upon with members requested to consider ways in which the nursery management can be divided, possibly into three roles to spread the responsibility and work load. This needs to be done for the next meeting in February. In addition the Programme Committee is seeking ideas for 2023 speakers and excursions to fill in gaps in next year's programme.

Following a speaker cancellation we were fortunate to have Ian Thomas enlighten us on South African vegetation, in particular the Cape Floristic and Karoo Regions. These biodiversity hotspots exist in an array of habitats e.g. rugged mountains, fertile lowlands, semi-arid shrublands. Ian noted that there are 'some 6000+ species in the Karoo Deserts with 70%+ endemic'. He showed many examples of diverse vegetation such as these striking displays of Aizoaceae (Mesembryanthemaceae) and Asteraceae.



Roy Pallett finished the evening with a presentation through which he shared his interest in plant intelligences. Roy provided examples of situations in which plants react to sights, sounds, touch and the changing environment. He posed questions such as 'Do plants react to pheromones that are always there or does the plant emit pheromones when it hears an insect?' How do parasitic plants choose the right host? He then discussed Mycorrhizal fungi, its importance for carbon storage and its function enabling communication between plants. There was much for members to ponder as technology uncovers more.

November's excursion was a return to the Blue Dog Hill property at Beauty Point. Eighteen members enjoyed the walk around the edge of the 17 ha property which is mainly well preserved bushland containing Eucalyptus, Acacia and Allocasuarina. Many wildflowers such as *Thysanotus patersonii*, *Diplarrena moraea*, *Patersonia fragilis* and orchids such as *Caladenia carnea* delighted the photographers. After lunch members visited a Greens Beach 12 ha property of heath and wetland. There was an amazing array of plants such as *Hibbertia*, *Thelymitra*, *Cassia parviflora*, *Calochilus pallidosus*, *C. platybilus*, *Patersonia fragilis* and *P. occidentalis*.

Following a request from Tamar NRM, member Helen Tait put on a small display of native plants for the Ravenswood Plant Out — Another opportunity to spread the word about native plants in the community.

Members look forward to the Christmas dinner and the time to relax and reminisce with fellow members on the past, not to forget the State Get-together which is being hosted by our Northern Group and is occurring in January when the plants are at their best on Ben Lomond. NG members look forward to seeing members from all parts of this diverse island on which we are privileged to live. ☺

Northern Group Programme

Dec 3 Saturday Propagation APST Nursery, WPC Riverside

Dec TBA Christmas Dinner 6.30 pm Windsor Community Precinct

January 13-15/2023 APST Members' Get-together at Ben Lomond

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North West Group News

Riitta Boevink

September meeting: As always those who provided the plants talked about them and their experiences, creating conversation.

Ian carefully noted also the common names given to our native plants. How many Australians would know the plants in the bush by these names?

Indigofera australis Native indigo; *Coronidium scorpioides* Curling everlasting; *Tasmannia lanceolata* Mountain pepper; *Acacia myrtifolia* Red stemmed wattle; *Boronia anemonifolia* Stinky Boronia; *Olearia phlogopappa* Dusty daisybush; *Olearia homolepis* Mauve daisybush; *Conostylis aculeata* Prickly conostylis .

Plant of the month was presented by Riitta: *Hakea cinerea* (Ashy Hakea)

It is in the family Proteaceae, named after Baron Christian von Hake (18th-19th century), a German patron of botany.

Hakea cinerea is not commonly grown. It is a medium size, dense shrub 2 to 3 m high. The leaves are stiff, bluish green, up to 16 cm long. Flowers occur in showy heads in the leaf axils. They start greenish yellow, then age to golden yellow and orange. Flowering time is August-October and lasts 3 to 4 weeks. It grows mainly in sandy soils but is adaptable. It can withstand frosts and long dry periods. Our shrub has taken many years to reach 1.5 m. This year it has flowered well and is a highly attractive shrub with the silvery stiff foliage.

Hakea cinerea



Also in September two members of our group attended the ANPSA conference in Kiama, NSW. The conference had many good speakers, on diverse topics. This led to Mary and Drew acting as guest speakers at our October meeting, giving their thoughts on some of the topics. The most thought-provoking topics were on how we could better manage fires in Australia, and an eye-opening exposé of how climate change could look for us. The conference also had a segment on youth and how they can be involved (featuring actual young people!)

In October the group participated in the Port Sorell Spring Fair. Many members came in the morning to help carry necessities up the hill and set up the site. In spite of the forecast rain (which did not materialise) the people came in a steady stream, and our plant sales were good.

In November our guest speaker Sarah Lloyd, of *Beneath the Surface - Fungi, Slime Moulds and the Wood Wide Web* fame, gave a talk on her favourite subject, the slime moulds. This has been her main subject of research since 2010. She has published a book on the subject, the third edition of which is available for sale from her. Her presentation was illustrated with numerous photographs taken by Sarah of these magic looking miniature things that are neither clearly classified as plants or animals. With modern technology, in particular genetic analysis, species origin and classification is much more accurate than was possible for Linnaeus when he began the classification of the plant kingdom.

There are possibly 10 times more fungal species than plant species. The International Union of Conservation of Nature (IUCN) called for due recognition of fungi in 2021. Sarah also mentioned the Wood Wide Web. That refers to the underground network of microbes that connect trees. 95 percent of species have a symbiotic association with mycorrhizal fungi.

Slime mould, Sarah's main subject of research is actually an amoeba. Amoeba is a stage in the life cycle of slime moulds. One can see You Tube videos of amoebas moving. There are approximately 1000 known species of slime moulds worldwide. Australia has more than 330 species. They are interesting subjects for photography. However, not everyone's cup of tea as they are ephemeral, mostly minuscule and occur in wet dark places. Sarah Lloyd has been able to research her subject matter in the forest surrounding her home in Northern Tasmania.

Our next event will be the annual festive gathering at a member's home in Sheffield.

APST Directory

COUNCIL

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GROUPS

Hobart Group

President	Jenny Boyer	6293 1113	Meeting place/time: General meetings: <u>Kingston Primary School Library</u> Second Wednesday of the month 7.30pm except January, June, July and August. For winter meetings, www.apstas.org.au/calendar Kingborough Day Meetings
Secretary	Christine Corbett	6239 1904	
Treasurer	Anthony Salt	0412 673 632	
Contact Officer	Bruce Champion	6294 6970	

Northern Group

Postal address:	45 Osborne Avenue, Trevallyn, Tas. 7250		Meeting place /time: <u>Max Fry Hall, Gorge Rd, Trevallyn</u> 7.30 pm Third Tuesday of the month (except January). Website: www.apstasnorth.org
President	Roy Pallett	0438 392 041	
Secretary	Anna McGrane	0419 347 743	
Treasurer	Rosemary Verbeeten	0458 812 850	
Eucryphia Liaison	Kay Pallett	0400 097 025	

North West Group

President	John Tabor	6428 6512	Postal address: PO Box 68, Port Sorell, Tas 7307 Email: apstnorthwest@gmail.com Meeting place: St Pauls Church Hall, Cnr Thomas and Church Sts,
Vice-President	Joy McIntosh	6426 2657	
Secretary	Drew Thomas	6437 1802	
Treasurer	John Boevink	6428 6909	
Eucryphia Liaison	Mary Slattery	0402 784 086	
