

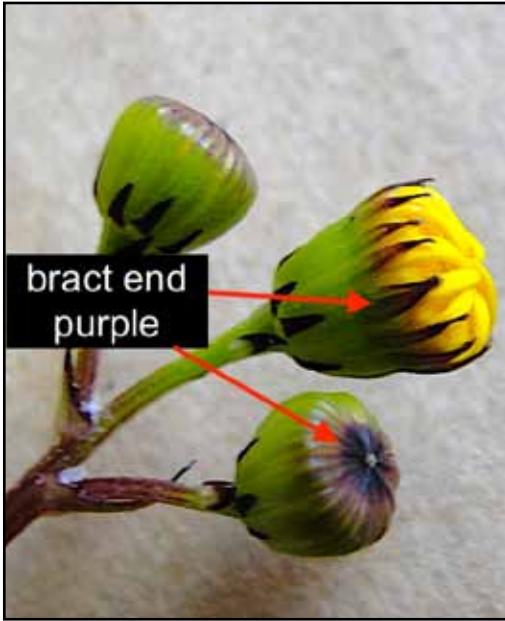
# Wildflower Society of Western Australia Newsletter

Australian Native Plants Society (Australia), W. A. Region ISSN 2207- 6204

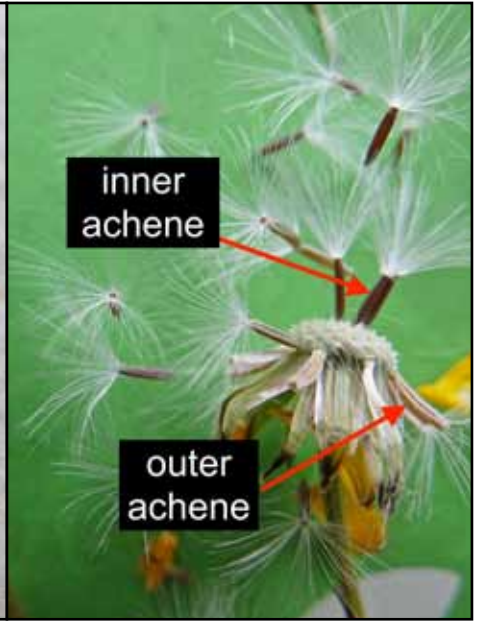


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# WILDFLOWER SOCIETY OF WESTERN AUSTRALIA

The newsletter is published quarterly in February, May, August and November by the Wildflower Society of WA (Inc).

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This Newsletter is available online to all members.

## Contents

From the President	3
Management AGM 2019 Announcements	4
New and rejoining Members	6
Events 2019	7
Northern Suburbs – Annual Plant Sale	7
Landsdale Farm	7
Branch Contacts and Meeting Details	7
Armadale Branch	9
Eastern Hill Branch	10
Unusual branching in <i>Xanthorrhoea</i>	12
These People Really Care!!!!	12
On death - and resurrection	16
<i>Senecio</i> One More One Less	23
Who can explain it?	28
Northern Suburbs Branch	28
Facebook Page Membership	29
ANPSA Blooming Biodiversity Pre and Post Conference Tour Information	30
Perth Branch	33
Australian Native Plant Society	35
Art Exhibition	37
Summer wildflowers	38

**Front cover.** Depot Hill Nature Reserve Mingenew. A location on ANPSA Conference 2019 Tour 1. Photo Jolanda Keeble.

**Inside front cover.** Distinguishing features of the weed *Senecio condylus*. LHS Purple bract ends on the buds. RHS Two achene (seed) types. Photos Bronwen Keighery.

**Back cover,** Top, top right and middle right the weed *Senecio condylus*. Bottom right native *Senecio pinnatifolius* var. *latilobus* with dissected leaves. Bottom left, Morrison with native bee. Photos Bronwen Keighery.

**Layout for this issue:** Bronwen Keighery and Ray Forma. Proof reading: Jim Barrow, Alex George, Ray Forma, Jolanda Keeble, Marta Rossignoli and Kerry Smith.

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**Honor Venning Library** at Perry House is open on the first Saturday of the month (except January) from 1 – 3 pm

**Website:** [www.wildflowersocietywa.org.au/](http://www.wildflowersocietywa.org.au/)

## Membership subscriptions

Category	Newsletter	
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Please advise the WSWA Office separately if you have changed your details (e.g. address).



## From the President

### Conference, Remembrance, Carnivores and Roadsides

By the time you read this bookings will be open for the ANPSA 2019 Conference: Blooming Biodiversity in Albany later this year. There is more about the programme elsewhere in this newsletter and on the dedicated website [www.bloomingbiodiversity.com.au](http://www.bloomingbiodiversity.com.au). We hope that many of you will take the opportunity to begin or renew friendships with fellow native plant enthusiasts from across Australia while taking part in stimulating conference activities.

In Albany at present is the art installation “Field of Light: Avenue of Honour” set amongst the commemorative trees on the road up Mt Clarence. Best seen at dusk, the installation consists of 16,000 small glass spheres with an internal light and set on short stalks giving the impression of a field of native daisies. The lights change in colour gradually between green, white and yellow. The installation reminds us that Albany was the departure point for ANZAC soldiers setting out in 1914 for service in Europe in World War 1. Wildflowers were an important part of the departure, for many of the soldiers wore a sprig of wattle attached to their tunics as a memento of their last sight of Australia. Is it too much to say that this was a high point in the appreciation of our wildflowers as a symbol of our country that has never been reached in the following 100 years? The installation is in place until Anzac Day this year. A visit is recommended - very thought provoking.

There seemed to be more time to listen to ABC Radio National over the Christmas - New Year period, often replays of selected highlights of 2018. The programme “Off Track” with Ann Jones is always entertaining and instructive for nature lovers. Maybe you heard the story about carnivorous plants, *Drosera* in particular. *Drosera* (Sundews) rely for much of their sustenance on trapping insects in their sticky leaves. The insects are then digested with enzymes. Most *Drosera* species have their flowers on long peduncles (stalks) to separate them from the sticky leaves. This is so that the insects providing pollination for the plants have less chance of being trapped and becoming food. This thought, that a plant might have evolved to separate the insects into friend or food, had not occurred to me before. I guess the *Drosera* will also be using colour and scent to direct the subsets of insects in the right direction. A further wonder of nature is that there are some insects, larger beetles, that seem unaffected by the sticky leaves and steal trapped insects before the plant has digested them. Charles Darwin was fascinated by *Drosera* and spent many years studying them. In 1860 he wrote: “I care more about *Drosera* than the origin of all the species.” He is said to have delayed publication of his treatise on *Drosera* because he expected controversy from the notion that plants could be carnivores.

Loss of roadside vegetation has continued to be of concern for our members and Facebook friends. Our Roadside Vegetation Sub-committee (RVSC) has collected reports of unnecessary or possibly illegal roadside clearing across 29 local government areas (LGAs) in the last half of 2018, quite a few with multiple transgressions. I signed a letter on behalf of our Society to the Minister for Local Government David Templeman in early

January asking him to have all LGAs: implement a roadside vegetation policy; form a community consultation group about roadside vegetation; and train councillors and relevant staff in environmentally sound roadside vegetation management.

Suitable training has been offered for about 20 years by the Minister for the Environment's Roadside Conservation Committee in conjunction with WALGA, but has been little used in recent years.

At the same time as this letter went out, the ever ebullient Eddy Wajon, Chair of our RVSC, organised a meeting with the Minister for Tourism Paul Papalia. Eddy was accompanied by a delegation of eight concerned community members, including most of our RVSC. This was a very positive meeting. The Minister well understood the role and value of wildflowers, and in particular those on roadsides, to the travel experience for tourists to WA. Tourism WA has a strategy at the moment to brand WA as a road-trip mecca. Oh that we have some roadside flora left to show them!

One of the suggestions from the meeting is a 5-star rating system to highlight 'Wildflower Friendly Shires'. Tourism WA would then promote those Shires with a high rating as road-trip destinations. Eddy has already prepared a set of draft criteria for a score sheet for determining the rating. It is possible our Society, by marshalling help from local members and friends, will play a role in determining these ratings. Continued designation and monitoring of Flora Roads would be part of this role too.

Finally just a reminder that my three year term as President finishes at the AGM in June. Time to start thinking about whether you will be next. During my term I have been surrounded by a willing band of enthusiastic people who have brought their skills to bear on a diverse mix of decisions and actions. I am sure you can expect similar contributions in the future. We all want to see our Society succeed in our efforts to know, grow, conserve and enjoy our wildflowers.

**Geoff Corrick**

## **Management AGM 2019 Announcements**



### **Notice of Motions to be presented to the 2019 Society Annual General Meeting**

The Notice Convening the 2019 Annual General Meeting (AGM) will be included in the May 2019 edition of the Society's Newsletter. Please note that any motions to be dealt with at the AGM need to be included with the Notice Convening the AGM and should, therefore, be forwarded to the Honorary General Secretary, Wildflower Society of WA (Inc.), PO Box 519, Floreat 6014 or [enquiry@wildflowersocietywa.org.au](mailto:enquiry@wildflowersocietywa.org.au) to arrive **no later than March 21, 2019.**

**Kerry Smith, Honorary General Secretary**

## Call for Nominations for Society Awards 2019

There are three categories of Awards presented at the Society's AGM, which will be held on Saturday 29th June 2019 and hosted by the South West Capes Branch at Cowaramup. The **closing date for nominations is Tuesday 7th May 2019**. Please mark your nominations CONFIDENTIAL and forward them to the Honorary General Secretary, Wildflower Society of WA (Inc.), PO Box 519, Floreat, WA 6014. Members should consider resubmitting a previous nomination if it was unsuccessful.

### Wildflower Society Award

The criterion for this award is that the person or group should have advanced the aims of the Society. The recipient does not necessarily have to be a member of the Society but most are. Nominations should be no more than two pages long. A nomination may be made by an individual or by a Branch Committee. A sub-committee of the Management Committee is established specifically for this award after the deadline for nominations. None of this sub-committee's members can be nominators or potential recipients.

### Honorary Life Membership

This award is not restricted to one member per year nor is it necessarily made annually. A member nominated for this award should have rendered special or meritorious service to the Society and must be nominated by a member of the Society. The nomination is approved by the Management Committee. Honorary Life Members do not pay the annual fee but are entitled to the benefits and privileges of an Individual Member. Nominations should not be more than one page in length.

### Meritorious Award

Nominations for this award are made by Branches and are for services to the Society at a Branch level. The nomination is approved by the Management Committee. There is no restriction on the number of Meritorious Awards given each year, and Branches may nominate more than one member.

**Kerry Smith, Honorary General Secretary**



## New and rejoining Members

Christine Altermann	California USA	J McMahon	Rockingham
Makayla Barber	Yangebup	Natasha Mikich	Hillarys
Christine Bazen	Lesmurdie	Alison Paterson	Fremantle
Justin Blackburne	Gwelup	Danae Plowman	Dunsborough
Diana Blacklock	Mundijong	Sophie Qiu	Atwell
Peter Bothwell	Yallingup	Nicola Ridsdill-Smith	Bicton
Don Bradshaw	Shenton Park	Janine Rosser	Roleystone
Laura Cheetham	Embleton	Lillian Ryan	Carine
Susan Davis	Daglish	Tim, Smith	Devon, GB
John Devaney	East Victoria Park	Guat Soh	North Beach
Peter Fleming	Auckland, NZ	Lynne Strudwicke	Safety Bay
Bree, Howard	Lathlain	Bilal Syed	Lahore, PK
Mark Jones	Gwelup	Gwyn Williams	Noranda
Colma & Grecian, Keating & Sandwell	Shelley	Trevor Williams	Yakamia
Peter Llewellyn, Frodsham	Cheshire, GB	Callan Wood	Nedlands
Kate Lown	Albany		
Jane McCrea	Woodlands		



### Summer wildflowers

The Slipper Orchid (*Cryptostylis ovata*) is the first orchid to flower each year and is pollinated by the Ichneumon Wasp (*Lissopimpla excelsa*). The male wasps are deceived by the pheromone produced by the plant and are tricked into copulating with the flower. Photo: Mark Brundrett.

## Staeri Cottage

Cosy 2 bedroom self-contained cottage between Albany and Denmark

- Sleeps 4 with queen bed, 2 single beds, reverse cycle air-conditioner, wood fire and fully equipped kitchen.
- 19ha (47 acres) of mostly natural bushland with an abundance of wildflowers and birds.
- Close to West Cape Howe N.P., Torbay/Cosy Corner, Wilson Inlet, beaches and wineries.

\*Wildflower Society of WA member discount

Alan and Anne Pilgrim  
 M: 0437 696 862  
 E: staeri3172@iinet.net.au



## Events 2019

7 Feb	Kate Brown: Restoring Greater Brixton St Wetlands	Murdoch
12 Feb	Jeni Alford: Enjoying wildflowers at Tozer's Bush Camp	Perth
14 Feb	Erica Shedley: Fire & Biodiversity - a complex conundrum	Armadale
22 Feb	Tony Start: Mistletoes	Eastern Hills
23 Feb#	Eleanor Bennett: A life in botany and our AGM	Capes
26 Feb	Malcolm French: Eucalypts of WA's Wheatbelt	Nthn Suburbs
7 Mar	Jolanda Keeble: Hi Vallee Farm and Tarin Rock	Murdoch
12 Mar	Bronwen Keighery: Where and when to go to enjoy Wildflowers	Perth
14 Mar	AGM & Quiz Night	Armadale
16 Mar#	Eddy Wajon: Roadside remnants and reserves: rarities and realities	Capes
22 Mar	Arpad Kalotas: Puffballs	Eastern Hills
26 Mar	Mark Tucek: Bush Tucker	Nthn Suburbs
9 Apr	Anne Newman: Enjoying wildflowers with tourists	Perth
14 Apr	Adam Cross: Carnivorous Heritage Armadale Area	Armadale
23 Apr	Terry Houston: What's So Interesting About Native Bees? # 2.00 pm People Place, Busselton	Nthn Suburbs

### Special Events 2019

23, 24 Apr	Garden Clubs and Societies Fair	
17 Mar	Blue Sky Festival Mundaring	Eastern Hills



### Northern Suburbs – Annual Plant Sale

**27 April 9 am - 2 pm,**

**Landsdale Farm**

**Evandale Rd Darch**

### Branch Contacts and Meeting Details

**Albany** Albany Regional Herbarium

3<sup>rd</sup> Tuesday 7.30 pm (Entry off corner Moir and Hymus Streets)

President: Lynda Strahan 0438 127 534

Secretary: Wendy Minchin 9845 1220 ([albanyherb@dbca.wa.gov.au](mailto:albanyherb@dbca.wa.gov.au))

PO Box 937, Albany, WA 6331

**Armadale** Environmental Centre Armadale Settlers Common Triton Crescent  
 2<sup>nd</sup> Thursday 7.15 pm for 7.30 pm,  
 President: Roger Harington ([rharington@bigpond.com](mailto:rharington@bigpond.com))  
 Secretary: Steve Aldersea 9399 3649 ([stevealdersea@hotmail.com](mailto:stevealdersea@hotmail.com))  
 PO Box 859, Armadale WA 6992

**Darling Range** Old Guide Hall (Paxhill), 5 Sanderson Rd, Lesmurdie  
 President: Lynda Tomlinson 9291 8753 ([lktom555@gmail.com](mailto:lktom555@gmail.com))

**Eastern Hills** Octagonal Hall, 52 McGlew Rd, Glen Forrest  
 4<sup>th</sup> Friday 7.30 pm for 8 pm  
 President: Alisdair Adam ([eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au))  
 Secretary: Sandy Stone ([eastern.hills.branch@wildflowersocietywa.org.au](mailto:eastern.hills.branch@wildflowersocietywa.org.au))

**Kulin** Herbarium, Resource Centre, Johnston St, Kulin  
 1<sup>st</sup> Tuesday 12 noon  
 Contact and Secretary: Robin Campbell ([robin.campbell@westnet.com.au](mailto:robin.campbell@westnet.com.au))  
 PO Box 56, Kulin WA 6365

**Merredin** Vice-president: Mal Harper 9041 1421 ([malhtharper@gmail.com](mailto:malhtharper@gmail.com))  
 Secretary/Treasurer: Tracy Scott  
 PO Box 95 Nungarin WA 6490

**Murdoch Branch** Cockburn Wetlands Education Centre, Hope Rd, Bibra Lake 6163  
 1<sup>st</sup> Thursday 7.30 pm for 7.45 pm  
 President: Christine Allen ([christineallen85@gmail.com](mailto:christineallen85@gmail.com))  
 Secretary: Sheree Walters ([murdoch.secretary@wildflowersocietywa.org.au](mailto:murdoch.secretary@wildflowersocietywa.org.au))

**Northern Suburbs** Henderson Centre, Groat St, North Beach  
 4<sup>th</sup> Tuesday 7.30 pm  
 Vice-president: Richard Curry 9447 2983 ([randccurry@gmail.com](mailto:randccurry@gmail.com))  
 Secretary: Christine Curry 9447 2983([randccurry@gmail.com](mailto:randccurry@gmail.com))  
 PO Box 25, Greenwood WA 6024

**Perth** Subiaco Community Centre, Bagot Rd, Subiaco (just east of Rokeby Rd)  
 2<sup>nd</sup> Tuesday 7.30 pm for 8 pm  
 President: Greg Keighery 9381 4062  
 Secretary: Nina McLaren 9448 5419 ([perth.branch@wildflowersocietywa.org.au](mailto:perth.branch@wildflowersocietywa.org.au))  
 PO Box 34, Melville WA 6956

**South West Capes** President: Margaret Moir 0406 292 141 ([moir@internode.on.net](mailto:moir@internode.on.net))  
 Secretary: Richard Clark 0427 385 551 ([rnc@swisp.net.au](mailto:rnc@swisp.net.au))  
 PO Box 784, Dunsborough WA 6281

**York** President: Pat McGregor ([mcgregory@iinet.net.au](mailto:mcgregory@iinet.net.au))  
 Secretary: Kathy Boladeras PO Box 60, York WA 6302 ([wonganoo@activ8.net.au](mailto:wonganoo@activ8.net.au))

## Armadale Branch

As always spring was an extremely busy time for Armadale members beginning with our walk in Bungendore Park, Bedforddale on 7 October. We had a combined walk with members of the Bungendore Park Environmental Group and were treated to a walk on a path that had just been opened to the public by the City of Armadale with beautiful views over the Swan Coastal Plain. We saw so many wildflowers in full bloom including many species of *Hibbertia* and especially *Hibbertia hypericoides*, *Trymalium odoratissimum*, *Verticordia acerosa* and *Pimelea ciliata*, *P. rosea* and *P. spectabilis* that were flowering everywhere.

On 19 and 20 October, the branch once again created a wonderful wildflower display at the Kelmscott Agricultural Show. I think we all secretly wonder if we will have enough wildflowers to display at this time of year but as always, the combined efforts of our group put together a wonderful display. This year Rosie Brooks had great success and secured 1<sup>st</sup> and 2<sup>nd</sup> placings in the wildflower painting section as well as the 'Best in Show'. Rosie also took out 1<sup>st</sup> and 2<sup>nd</sup> in the wildflower photography section. Helen Wildsmith took out the top award in her category for her knitted teddies, scarecrow and nurse and not to be outdone Kim Fletcher won a 1<sup>st</sup> for his bowl of nasturtiums – oops, should I have made that public to the Wildflower Society!! Nancy Scade also won two 1<sup>st</sup> and a 2<sup>nd</sup> for her wildflower specimens so all-in-all a successful result for those who took the time and effort to enter the categories that interested them.

Our members have been extremely busy this year planting and weeding the gardens around the Environmental Centre which has been something we have been doing for many years to enhance this area and attract more wildlife. Ironically the bed we planted this year that is the huge oval bed in the carpark now looks as if we planted it a couple of years ago and the bed that we planted about four years ago looks like we just did it this year!! Apparently, there was a lot of builder's rubble dumped in the first bed, and the plants are still trying to find their roots – poor things. The City of Armadale installed a water trough last year into this garden and the Red-tailed Black Cockatoos are taking advantage of it so it's nice to see something positive happening in this very challenging area of the gardens.

Our members are also actively involved in seed collecting in Bungendore Park and this year has been no exception. We have had four trips into the park so far collecting seeds from a wide range of plant genera such as *Acacia*, *Beaufortia*, *Corymbia*, *Daviesia*, *Eucalyptus*, *Gompholobium*, *Grevillea*, *Hibbertia*, *Hovea*, *Isopogon*, *Kennedia*, *Leucopogon*, *Melaleuca*, *Pimelea*, *Tripterococcus*, *Trymalium* and *Xanthorrhoea*. We have also done some cuttings from more amenable species such as *Lechenaultia biloba* and *Scaevola platyphylla*. Our forays into the park have highlighted species currently in flower (December) and we plan to collect seed from some of these in late summer – if we can find them of course!

The Bungendore Bush Breakfast on 11 November was well attended by members this year and is hosted by the Bungendore Park Environmental Group as their yearly fundraiser. We had a lovely breakfast on a beautiful sunny morning in the park with lots of people who are passionate about our environment.

Our final event for the year is called the Great *Nuytsia* Hunt that was initiated by Sue Radford some years ago to bring up-to-date a similar counting of *Nuytsia* in the

Armadale area back in the 1970s. This is largely to see whether they are in decline, which in suburbia of course is a reality, although some areas of Armadale and Kelmscott do retain quite a number. In the reserves of course, there are lots more and this year we concentrated on an area of bush in Gibbs Road/Taylor Road in Forrestdale. This was one of our more challenging counts as the Spearwood (*Kunzea glabrescens*) was extremely dense and very difficult to get through in areas and of course the *Jacksonia* didn't help either. However, we did see lots and lots of *Nuytsia* as well as fields of *Calytrix angulata* that made the exercise that much more interesting.

We finished off the count by having our end-of-year lunch at the Environmental Centre that as always with the Armadale members, had a great turnout. Everyone did their bit whether it was cooking, baking or cleaning up after the event and everyone had a wonderful time being able to talk to one another which has proved quite a challenge in previous years where you are in a restaurant and have limited space to move around.

The Armadale Branch members hope that you all had a very Merry Christmas and that 2019 will be a great year for the Society and the environment.

**Linda Mason**

## Eastern Hill Branch

The highlight for our branch during spring was the plant identification workshops run by Janet Atkins and Penny Hussey. Twelve people of varying experience and knowledge, some Society members, some not, spent two Saturdays learning how to identify our



wildflowers (photo below). The sessions began with the basics of flower anatomy and leaves, followed by sessions on different families and their characteristics. There were tons of specimens to examine and dissect. The use of keys and FloraBase was also covered. During the week between the two workshops, Janet and Penny whipped up a very useful manual with many of the families and their characteristics. They had it printed and distributed to all the participants. It's a great resource, simplified for those beginning their journey into the world of wildflowers. In 2019 we look forward to specialized workshops on particular families.



Like everywhere else in spring 2018, the hills were alive with flowers. We had some fabulous walks. On a trip to Mokine Reserve, we saw the newly named Priority Two species *Drosera albonotata* (photo below) as well as some beautiful specimens of *Diuris ostrina* (photo left). A walk at Statham's Quarry yielded many flowers typical of the scarp.

Our talks on the fourth Friday of the month continue; we have had Todd Buters talk about the use of drones in vegetation surveys, Neville Marchant about *Rafflesia*, Sean Tomlinson discuss pollination on the Gngangara mound, Alex George surprised us with the many species of *Calothamnus* and Ken Atkins informed us about the new Biodiversity Act. For our finale for the year, at our AGM, Penny took us on a fascinating journey around the Mediterranean. We are very grateful to Fran Kininmonth for constantly finding us speakers.

Our regular Seed Cleaning Group and Propagation groups continue and we have added a "Plant Learners' Group". This is intended for anyone who is happy to meet in a "self-learning" environment. People are invited to bring along specimens for identification. As part of their learning, this group undertook to redo all the plant labels in the Octagonal Hall Garden. That became quite a challenge; there are more than 100 specimens in the garden!

On 17<sup>th</sup> March, the branch will once again have a presence at the Blue Sky Festival in Mundaring. This festival focuses on sustainability and this year the branch intends to have a theme of plants for wildlife, in particular cockatoos.

Our AGM saw the election of Alastair Adam as president, Pam Riordan as Vice-President, Robert Atkins as Treasurer, Sandy Stone as Secretary and Penny Hussey as Minutes Secretary. Fran Kininmonth, John Bates and Lee Roberts are committee members.

**Article and photos Pam Riordan**





## Unusual branching in *Xanthorrhoea*

A dozen or so Balgas, *Xanthorrhoea preissii*, have survived from the original bush in the park next door to me in Kardinya. When we moved here in 1955 they were quite small, none with a trunk more than two metres tall. Since then they have grown well and now some have trunks up to 4 m tall. Several have branched at the crown, in the manner typical of the genus. Last May I trimmed the lower leaves from a plant with a trunk about 1.7 m tall, growing close to my fence, to reduce the risk of fire (one evening about 15 years ago someone lit about ten plants but by the time the fire brigade arrived we locals had them under control). On this plant I was surprised to find what appear to be two branches that have arisen on the trunk, at about 50 cm above the ground (photo left). The main trunk otherwise

is unbranched at this point, and the crown has not branched. While I have not examined every Balga I've seen I have not seen one branching like this before. It's possible that these are not true branches but seedlings that germinated when seed lodged among the leaves, but I think that is unlikely. Have other members noticed *Xanthorrhoea* plants branching this way?

**Alex George, Kardinya.**

## These People Really Care!!!!

Through our team of experienced volunteer propagators, plant growers and plant hunters work, at the Northern Suburbs Branch of the Wildflower Society Nursery (NSWS Nursery) at the Landsdale Farm in Darch, and the Facebook page of the Society, opportunities arise to meet some remarkable people who love our WA flora. These people do all they can to make sure that special plants in their own very small patch are kept safe, mostly without any official support services involved, guaranteeing their very survival. In the months before Christmas 2018, a few of our volunteer workers had the opportunity to take up invitations to visit some of these important and remarkable areas.

### Geraldton

In November, a propagation workshop featuring our Nursery's vegetative cutting procedures was conducted in Geraldton. We were there in response to an invitation from Wendy who is in charge of the Council Revegetation Nursery (in the area Geraldton Outer Region Nursery) and a very keen lover of our flora. Wendy had been working on revegetating many of the rare and priority species in the region and found that seed

growing was not yet an option to provide the success of many of these species. She participated in our Northern Suburbs Branch nursery propagation workshop in August 2018 and decide that her volunteer workers would benefit in seeing our procedures and learn how to grow the difficult plants from cuttings.

Sally, Shaun and I, all experienced propagators, travelled to Geraldton to conduct the workshop. Wendy did the organising and had 20 very keen volunteers registered. Most participants admitted that they were unaware of the possibilities of growing our flora from cuttings, division and the other vegetative methods we demonstrated. They are now preparing to put the methods into practice in the coming season. Several priority species from the Region including *Eremophila brevifolia* all collected under license, were trialled on the day.

Recently Wendy had also been involved with DBCA, including the Kings Park Science Unit, on the programme to compliment the remaining few stands of the very threatened subspecies *Verticordia spicata* subsp. *squamosa*. From this venture some 30 micro cuttings were successful at Kings Park and replanted in the natural areas of the plants. Hopefully the group at Geraldton will be able to be more involved in this type of conservation and revegetation.

We now have in place a successful liaison with the Geraldton group and look forward to more visits with them to assist them with their propagation of special and general flora.

Burma Road Nature Reserve (east of Greenough, runs north from Burma Road)

Our next venture was when a chance selection of photos from a burnt area in the Burma Road Reserve appeared on the Society's Facebook. Our volunteer Sally set up an appointment with our newfound Facebook friend Gail, who had kindly offered to meet us there and show us the area within the Burma Road Nature Reserve that had been burnt and to look at the colourful regeneration (photo next page Gail and Sally at Burma Road Reserve). Gail loves her work within the reserve and in other adjoining reserves working with DBCA to keep tabs on the areas and seek out anything she thinks may be new or poorly collected species, checking the habitats and observing any new populations of rare and priority plants.

Gail's little Suzuki took us through beautiful areas of pristine sandplain of Reserve with its myriad of species. Gail stopped on several occasions to point out special species and surveying around for others. A mass display of *Verticordia monadelpha* var. *monadelpha* came into view for a sure stopping place. A close up view of all the fluffy magenta pink flowers had our camera's clicking. Moving on, the burn area came into view with its subtle difference showing masses of new lush green foliage shoots emerging from all-important lignotubers, vital for many of our species to survive the elements. Very healthy spikes of bright red *Verticordia grandis* scattered among pink posies of *Verticordia pennigera* (photo centrefold) and the mauve flowers of starflower *Calytrix strigosa* (photo centrefold), amongst many other newly emerged plant species.

On our way back, Gail pointed out a colony of the suckering threatened *Lechenaultia longiloba* now existing only in a few patches within the reserve. We are familiar with this species having had the opportunity to do a DBCA trial to propagate the species at our nursery. This proved successful after a year or two of adjusting to nursery conditions, it now reproduces itself well from cuttings at the nursery.

### Visiting *Verticordia hughanii*

Very soon after, our next opportunity came up with another invitation to visit to the Dowerin area to look at the very threatened and spectacular red-flowered dwarf *Verticordia hughanii* (photos centrefold). Sally and I knew it well from our propagation programme at the nursery but had never seen it growing in the wild, so jumped at the opportunity to do so.

Elizabeth George during her famous volunteer *Verticordia* Study programme (many members may remember participating in this) tells how this species, seemingly lost, was relocated. One of Elizabeth's associates hired a plane and went on an aerial search where the observers finally spotted the brilliant red of the species flowering in a few places near salt lakes.

We saw *Verticordia hughanii* in Rob and Beth's bush block, where they live. The block is an island, their own precious and unique patch of WA flora encircled by wheat fields. Their love of our flora has saved this little bit 'of what used to be'. Knowing what he has in his private patch of bush Rob says he looks out across the nearby wheat fields and never ceases to wonder as to what has been lost and never recorded under clearing and cropping. Their lifetime ambition has been of living on the block and retaining it in its natural state preserving the numerous threatened species hanging on in it for the future. From their block they generously spread the word around the countryside of importance of our natural habitats in patches no matter how small they may be.

As we walked across Rob's and Beth's bush block flats to discover this coveted species, other interesting and little known species sometimes only one or two plant per species, came to our notice. Then the full display of the *Verticordia hughanii* was before us mostly in full flower in delightful small tight mounds of colour (photo centrefold). We probably saw a few hundred of them with good signs as new seedlings germinating amongst the flowering plants, indicating a healthy colony. How thankful we must be that someone like Rob and Beth dedicate their lives to looking after their patch of bush with its very special *Verticordia* again with little help and support from the official caretakers of our flora.

*Verticordia hughanii* has been proven to grow successfully from cuttings over the years at our nursery and is now established in our volunteer's specialist gardens to provide material to retain its important genetics against unforeseen disasters in the wild.

Many thanks for the opportunity and hospitality offered to view this incredible species in the wild. Yet another amazing opportunity came our way to view another of our iconic and historical flora species.

### Gary's Reserve near Bindoon

Trevor, an elderly but agile gentlemen in his late 80s, came to our nursery very concerned that his favourite WA species of wildflower on his friend's private property was going to end up under a new part of the Great Northern Highway extension and was offering us the opportunity to collect cuttings before the plants were destroyed. With Trevor and nursery volunteers, Jeff and Corrine and myself, off we went to the Bindoon area.

Trevor had been visiting his favourite piece of bush to see the glory of *Hibbertia*



*miniata* since 1957 when he was a wildflower tour leader over many years. *H. miniata* has large glowing orange flowers and black stamens in the centre (photos centrefold) and is a Priority Three species (I am sure it used to be declared as rare). Trevor has great stories to tell of those days and about the flocks of visitors who came to WA to view our spectacular wildflower season each year. Hopefully someone will visit him to record these wonderful stories and view his slide collection.

Fortunately, many years ago Trevor and the owner of the property were able to procure a grant to fence the area of concern off and it is now the only bit of bush left except for the adjacent Udumung Nature Reserve, which doesn't have a recording of the *Hibbertia miniata* on it.

Once at the site, though not in flower, the light greyish green hairy foliage of the plant were soon spotted growing in the lateritic rocky soil. A collection of material for propagation at our nursery was made and Corinne also managed to salvage some seed for her to trial. This species has been propagated in past years and grown in gardens at the time, but has not been seen recently. The adjacent road verge also has a collection of healthy plants. A few plants of the pretty pink *Verticordia bifimbriata* were in full flower in the area with some five or six species of *Banksia*.

A few years ago an acquaintance of Trevor's showed him a map with the proposed Bindoon Bypass Road (a part of all the new Great Northern Highway extensions) going through his patch, with the bush being demolished. Since then Trevor's friend has learnt from the Mains Road contractors that he road will be formed some metres down the road in a farm paddock, away from the fenced off bush area. Still quite close when current road making process is noted but they do have knowledge of the Priority species and others. This small private reserve apparently has no official standing at this time as a reserve, though locally known as Gary's Reserve.

Unfortunately, the adjacent Udumung Nature Reserve will be split in half by the new road. (it is noted that there are two Threatened species and at least two Priority species recorded from this reserve).

Trevor has been very pleased with our endeavours and interest in his 'patch plants' at the nursery and has become a frequent visitor.

### **A role for our Nursery**

What do these wonderful caring people mean to our conservation efforts to save many iconic species of WA flora? How do they keep the gene pool of the plants in their tiny bush patches for generations come? The very experienced and successful propagators the NSW Nursery welcome any opportunity to put their skills to work on such species. They freely give their information on their processes to all who want to be a part of saving our WA Flora by having a backup gene pool. Following on from the successful propagation, the plants are available to be trialled by interested WA flora plant growers. A current worldwide conversation is promoting the growing of such threatened and little-known species, in any enthusiast's private gardens, verges and parks for safe keeping. Vegetative propagation is also proving it has its place supporting and resupplying the genetic value of species back into their natural habitat through revegetation programmes.

Many thanks to the generous people who invited us to share and experience their 'patches' because they really care!

**Hazel E Dempster, Specialist Propagator of WA Flora, Northern Suburbs Branch Nursery, Landsdale Farm.**

## **On death - and resurrection**

We came to Perth in 1961, when the population was about a quarter of the present one. We bought a block in Wembley Downs, which was then considered an outer suburb. The block was well populated with Banksias, sheoaks, blackboys, acacia saplings and even a fairly large Tuart – not that we knew what they were at that time. We kept as many of them as we could. This greatly puzzled our new neighbours all of whom cleared their blocks completely: why would you keep those ugly things when you could grow roses? As you did in those days, we also planted extensive lawns.

Then, in 1978, we had severe water restrictions. We ripped out the front lawn and planted several native shrubs including Verticordias. These thrived without any summer watering, as you might expect on Spearwood sands with their moisture-holding subsoil. About the only problem was cutting them back occasionally. But after 29 years, we decided that the house in which our children grew up was no longer appropriate. That house was subsequently demolished, and the block divided. The native plants were removed and roses planted!

We bought a block of land in Mt Claremont. This time, there was no opportunity to retain existing trees; the block was bare. I thought at the time this was because the land had been cleared to form a buffer zone around what was called in those non-PC times, the lunatic asylum, but I now suspect there was a different reason.

We planted native plants in the front garden and fruit trees and grapevines and a small patch of lawn in the back garden. At first, everything grew well even though we were sited on the back slope of the relatively young dune on which the soil comprised coarse grey sand overlying coarse white sand. The first to go was a woolly bush. I didn't worry too much about that: they tend to have a merry life but a short one. But that was the first of a long list of plants that made short guest appearances in our front garden. Sometimes they died slowly, one branch after another, but more often it was sudden death: the plant looked okay one day but was dead the next. Even Geraldton Wax plants lasted but a few years. The problem wasn't confined to the native plants: a loquat tree did a "Cheshire cat" slowly disappearing limb by limb. After about 15 years of healthy growth, even the grapevines slowly began losing vigour and dying back. What was going on?

In December 2011, I noticed that the leaves of some of the grapevines were showing symptoms I hadn't seen before. They were quite different from powdery mildew, a very common in disease of grapes. They were due to downy mildew, a disease that had caused millions of dollars of loss to the viticultural industry over the centuries but had only fairly recently arrived in Western Australia. It is caused by an organism called *Plasmopara viticola* – and that needs a bit of explanation.

Linnaeus, who wanted to classify everything, said that there are three kingdoms one of which was minerals! There were two kingdoms of life: plants and animals. If you were not an animal you were a plant. It wasn't until the 1980s that this was queried. Fungi are not plants: they didn't evolve from plants and they didn't evolve into plants. They are a separate kingdom. The same argument goes for bacteria. That left a whole grab bag

of very odd organisms that probably represent Nature's less-successful experiments. It includes the water moulds most of which mind their own business but three of which comprise the "terrible Ps": *Plasmopara*, *Pythium*, and *Phytophthora*. *Pythium* causes damping-off of seedlings and *Phytophthora* kills plants.

Until the 1980s, downy mildew was treated as if it were caused by a fungus: copper sprays were used but they were quite ineffective. Extensive research then showed that a simple chemical that, for the moment, I will call sodium phosphite was extraordinarily effective. Imagine the chagrin that must have caused the chemical company. How can you patent a simple well-known chemical and thus recover the considerable research costs. They got around it by patenting the aluminium salt but it turns out that that it is no more effective than the simple sodium salt.

I therefore sprayed the infected grapevine, but, to be sure, also sprayed the uninfected ones. To my surprise, they immediately showed an increase in vigour. So that was a problem! Sodium phosphite is also effective against *Phytophthora*. That must be why things kept dying and also why the block was bare. We tend to think of *Phytophthora* in terms of the introduced *P. cinnamomi* that kills plants quickly, but there are also several "native" species that also kill plants but less quickly. One of these has the frightening name of *P. multivora* that means it eats lots of things. It was first identified in 2009 and is also pathogenic to bark and cambium of Tuart (*E. gomphocephala*) and Jarrah (*E. marginata*). When it girdles the stem, the result is sudden death. It was first discovered in Tuart forest so we may assume it is common in near-coastal areas.

Obviously, I needed to treat the garden. When plants are badly affected, spraying doesn't convey sufficient of the active ingredient: you need to inject it. For this, you drill a 6 mm (quarter inch) hole in the trunk of the plant and screw the nozzle of the tree injector into the hole (see below). There is a Catch-22 of course. The plant has to be big enough to permit such a hole to be drilled so it is difficult to keep small plants alive. Our garden tends to have selected itself down to a few fairly-large plants.

The injector is about 19 cm long and delivers 30 mL. If that is too much, you dilute

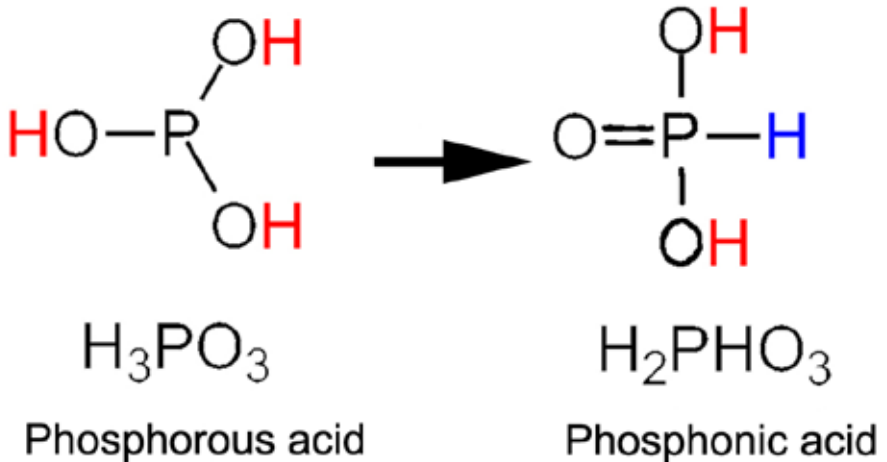


the liquid. Injection is achieved using a powerful spring. You load the injector by pulling back the plunger (against the force of that spring), twist the plunger a little to hold it in position while you screw the nozzle into the hole, then release the plunger. The spring forces the liquid into the tree. This can take several hours. The chemical is fully systemic; it is transferred upward to the leaves via the xylem and downward to the roots in the phloem.

So the message is: if you are having trouble keeping plants alive, consider the

possibility that the problem is *Phytophthora*. The simplest diagnosis is treatment – if treatment cures the problem, then deduce that it was caused by *Phytophthora*.

Finally, a word about terminology. The acids formed from fully-oxidised forms of sulfur and of phosphorus end with “ic”. Thus sulfuric and phosphoric acids. The salts from these acids are called sulfates and phosphates. For the less-oxidised forms, the ending is “ous” and thus sulfurous and phosphorous acids. The salts are called sulfites and phosphites. That sounds very logical but the problem is that phosphorous acid does not exist in solution. The atoms jump around like this (see below).



#### Captions for page 19

Top row. Downy mildew on grape leaves, the top of the leaf shows pale areas and necrotic patches, the underside shows downy patches.

Middle row. *Calothamnus graniticus* subsp. *leptophylla*. The left picture was taken in 2014 when it was almost dead and just before injection, the right picture is recent.

Bottom row. *Eucalyptus erythrocorys*. In the left picture taken in 2014 before injection, the bark is lifting from the affected area, the right picture is current. The tree is healthy but the affected area hasn't quite healed.

#### Captions for centrefold

Top left. Mounds of colour, *Verticordia hughanii* in Rob's and Beth's patch.

Bottom left. A beautiful deep red flowering *Verticordia hughanii*.

Top right. Gail and Sally looking across the pristine bushland of the Burma NR.

Centre left. *Verticordia pennigera* in the Burma Road NR.

Centre right. *Calytrix strigosa* in the Burma Road Nature Reserve. Photos Hazel Dempster.

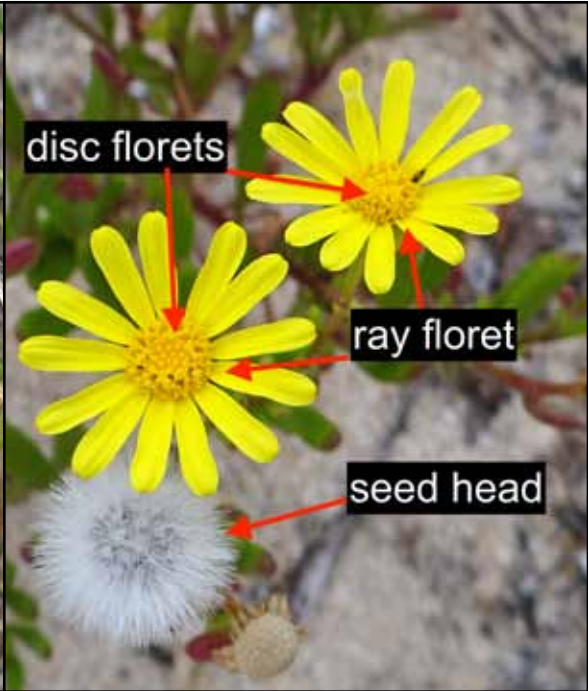
Middle right. Orange *Hibbertia miniata* alongside yellow *Hibbertia hypericoides* in Gary's Reserve.

Bottom right. *Hibbertia miniata* in full flower in Gary's Reserve. Photos Trevor Pollard.











(This is called “tautomerization”, a lovely word. Try it on your friends one day. Bit long for Scrabble.)

The product on the right now has five bonds instead of three and so “phosphorous acid” is not an appropriate name. The correct name is phosphonic acid and its salts are called phosphonates. You can see that this causes some confusion. It probably should be used as the standard name more commonly. More than once I have heard garden gurus confused between phosphoric and phosphorous acids. By the way, the compound on the right should not be all that unfamiliar; replace the hydrogen atom with the simple amino acid called glycine and you have glyphosate, the active ingredient in Roundup. Join two phosphonates together and you have a compound used to treat osteoporosis.

Further reading

Scott P.M. et al. 2009, *Phytophthora multivora* sp. nov., a new species recovered from declining *Eucalyptus*, *Banksia*, *Agonis* and other plant species in Western Australia. *Persoonia* 22: 1–13.

**Jim Barrow**

## ***Senecio* One More One Less - *Senecio diaschides* and *Senecio condylus* in WA**

### **Senecio genus**

*Senecio* is a very large almost cosmopolitan genus of over 1300 species, with the greatest diversity in South America and Africa. Although many segregates of the genus have been made, the genus remains in need of a worldwide revision. Fortunately in Australia the genus has recently been subject to a detailed taxonomic review culminating in a Flora of Australia treatment (Thompson 2015). Currently 87 species (including 10 naturalised species) have been recorded in Australia. In Western Australia 34 species are known (27 native and 7 naturalised).

With the clarification of the taxonomy over the past few years we have been able to unravel the native or weedy status of several species (Keighery and Thiele 2016 and Keighery and Keighery 2017). This article follows the reasoning behind the recommended changes in considering a species native or naturalised.

### **Captions for opposite page - Variation in the *Senecio* genus**

There are two types of daisy heads in the *Senecio* genus.

Top left. Daisy without ray florets only the tiny yellow disc florets. *Senecio diaschides* on inside back cover has this flower type.

Top right. Daisy with ray florets, each with one large showy petal and many tiny yellow disc florets. *Senecio pinnatifolius* var. *latilobus* (back cover, bottom right), *S. condylus* and *S. gregorii* (opposite page, bottom) have daisies with ray florets.

Bottom left. *Senecio gregorii* is a perennial shrub from salt lakes in the Goldfields.

Bottom left. *Senecio gregorii* daisy inflorescences. The tiny yellow disc florets can be seen in the centres. Photos Bronwen Keighery.

## ***Senecio condylus* is a weed in WA**

Thompson (2005a) reviewed *Senecio glossanthus* and described a new species, *S. condylus* (photos inside front cover, back cover). While *S. condylus* was previously considered part of the *S. lautus* complex, Thompson (2005a) considered it more closely related to *S. glossanthus*. In a subsequent paper, Thompson (2005b) placed all Australian collections previously called *S. lautus* into the endemic Australian species *S. pinnatifolius*. He restricted *S. lautus* to New Zealand, following the recommendation of Belcher (1963), an action further supported by phylogenetic studies (Roda et al 2013). Thompson (2005b) re-described the variation in *S. pinnatifolius* into a complex of 10 closely related species and designated the variation of the Australia wide *S. pinnatifolius* under eight subspecies.

*Senecio condylus* differs from other *Senecio* species in having: the outer floral bracts with purple pigmentation in upper third (photo inside front cover); markedly different outer margin achenes (seeds, photo inside front cover); and with persistent coarse hairs on the lower surface of the leaves (photo opposite). The species is confined to the southern Swan Coastal Plain between Perth and Busselton, normally on deep sands.

Previously records of *Senecio condylus* in Western Australia were treated as *S. lautus* subsp. *maritimus* or *S. lautus* subsp. *dissectifolius*. Lander (1987) in Flora of the Perth Region noted that

“Material from the Perth region comprises two easily recognisable variants: subsp. *dissectifolius* has mostly finely dissected or lobed, narrow leaves and subsp. *maritimus* has undivided or rarely coarsely lobed dentate broad leaves.”

That this was the case is demonstrated by the collection of *Senecio condylus* previously determined as *S. lautus* subsp. *maritimus* along the Perth to Mandurah highway at Waikiki by Nicholas Lander in 1983. The leaf character is still the simplest way to separate the two taxa in the field.

The earliest herbarium record of *Senecio condylus* is a collection of J.C. Wiburd from the Cape Naturaliste area in September 1904 and the second record was from Coode Island in Victoria in October 1908 (both specimens in eastern Australian herbaria). Max Koch also collected the species from Busselton in October 1909 but none of these populations appear to have persisted as the species is only beginning to be re-collected



around Bunbury/Busselton at present.

Looking back it appears that *S. condylus* was first recorded as a weed in 1924. This comes from an enquiry in the Western Mail, Plants for Identification (25 September 1924, page 4) from JB (of Group Settlement 39 via Mundijong) about a plant “growing very thickly on his paddocks”. Government Botanist C.A. Gardner identified it as *S. lautus*, but it was most likely *S. condylus*. At this time many plants were restricted to a single specimen, especially if they might be weeds. The first herbarium record of *Senecio condylus* for the Perth area are several collections from the Fremantle area (?Medina) in 1947 made by the Dairy Section of the Western Australian Agriculture Department suggesting it was present in areas used as fodder for dairy cows. At the time Bennetts (1935) suggested that these plants were partially toxic, but this claim was later considered erroneous by Bennetts and Gardner (1956). The next collection retained was from South Perth in 1953, further collections came from Stock Road, Spearwood by 1980, in the camping ground in Leschenault Conservation Park in 2001 and Busselton in 2006.

*Senecio condylus* is currently the most visible and abundant *Senecio* species in the Perth area with very large populations on disturbed dunes at City Beach, Floreat Park, Cottesloe, under pine plantations in South Perth, along the Freeway margins and most coastal roads in the Perth-Fremantle area.

The earliest known records of *Senecio condylus* in bushland areas in WA were in 1992 from the Port Kennedy Bushland, then Lake Richmond where it was recorded as a weed. Records have now appeared from Pagononi Bushland (2000), Lake Cooloongup (2005), Piney Lakes (2008), Anstey-Keane Damplands (2013) and Kensington Bushland (2016). As Perth has expanded north *S. condylus* has also, being found around car parks, road-verges and disturbed dunes up to Ocean Reef (photo backcover), where it was not previously known. In the Bunbury area *S. condylus* has begun to invade coastal bushland sites such as the Preston to Ocean Regional Park and sand rises in the Mangroves around the Leschenault Inlet. All of these records are after fire or alongside tracks or other disturbed areas.

In summary *Senecio condylus* should be considered a weed as it: was relatively recently collected; shows preference for highly disturbed sites; and is a recent record in bushland areas. *Senecio condylus* is likely a recently arrived weed, probably from overseas. This view is supported by the recent comprehensive genetic study of the *S. lautus* complex (Liew *et al* 2018) that showed the affinities of *S. condylus* were not with any members of the Australasian ‘*lautus* group’, but were with African *Senecio* species, again strongly suggesting this species should be regarded as introduced.

However *Senecio condylus* remains listed as a native species endemic to the Perth to Busselton region (AVH, 2015, Council of the Heads of Australian Herbaria, 2006 and Western Australian Herbarium 1998 onwards). This listing is in need of a review.

### ***Senecio diaschides* is a native in WA**

*Senecio diaschides* (photos inside back cover) is a member of the Disciform (these lack petal-like ray florets, see photo page 22) group of 40 species of the genus *Senecio*. All members are native to Australia with 36 endemic and 4 shared with New Zealand. *S. diaschides* was described by Drury (1974) when he revised the group in New Zealand. He

found this was an introduced species from Australia, but did not match any named taxon. It has been subsequently recorded from Western Australia, Victoria, New South Wales and Queensland, but was initially named as a separate species *S. cahillii*, until the collections were compared. The species was listed as naturalised in Western Australia in most checklists and floras (Thompson (2015) and FloraBase (Western Australian Herbarium 1998 onwards).

The reasoning for determining *Senecio diaschides* is a native to Western Australia and not a naturalised plant is outlined below. Here we look at more than the collection history.

**Collection history:** There are only 25 collections of any species of *Senecio* from the period 1880-1925 for Western Australia in an Australian herbarium. Few of these collections are of members of the Disciform group. Two are of the native relative *Senecio multicaulis* from Mundaring in 1917 and 1924. There is a collection of a putative hybrid (*S. multicaulis* x *S. diaschides*) from Manjimup by Max Koch in 1920 (Sydney herbarium). The next record of the species is by C.A. Gardner in 1947 from Bindoon (PERTH). All members of the Disciform group were poorly collected prior to 1960, especially from the Jarrah Forest, so there is no evidence to suggest that the species is a later addition to the flora from the collections.

**Literature Records:** As *Senecio diaschides* is described at a relatively late date, it is not recorded in early checklists of the Western Australian flora. The first record is under the synonym, *S. cahillii* in Green (1981 & 1985) as a native species. Lander in Marchant *et al.* (1987) lists the species under *Senecio diaschides* as a native species. There appear to be no references as to why the status of this species changed.

**Aggressive coloniser of disturbed sites:** *Senecio diaschides* is a component of wetlands and damplands, on the Swan Coastal Plain, often being more common after fires. It behaves as a normal component of such sites. The species is also found in wetlands and open granite sites in the Jarrah forest and is very commonly encountered in sites that have been logged or especially logged and burnt. There is no doubt that the species has benefited from opening up of the forest during timber harvesting, but it does not seem to invade or persist in areas beyond that expected of a post fire species. Several other Disciform *Senecio* species, namely *S. glomeratus*, *S. hispidulus* and *S. minimus* behave in a similar manner.

**Unusual Range Disjunction:** There are several species of the group (*S. hispidulus* and *S. minimus*) that are disjunct from Eastern to Western Australia. The only slightly unusual aspect is that the species is not present in South Australia. The distribution pattern is relatively common in these wind dispersed plants.

**Introduced for commercial reasons or as a contaminant:** There is no reason to consider that this modest-flowered species was introduced to Western Australia for commercial purposes. It is possible it could have appeared as a fodder contaminant, but again this seems unlikely. Plants from New Zealand are now considered as naturally introduced from Australia (New Zealand Plant Conservation Network 2015) via wind and have been listed as an aggressively spreading native.

On balance there seems no reason to assume that *Senecio diaschides* is not native to WA and it is now recognised as a WA native on FloraBase.

Weed versus native

These two *Senecio* species well demonstrate the use of a variety of studies and investigations needed in determining the native or naturalised (weed) status of plant species in taxonomically difficult groups found in a number of countries. These two species came to our attention as we have had enquiries about the need to remove *Senecio diaschides* and *S. condylus* from bushland patches. Our answers are: as *Senecio diaschides* is a native, leave it alone; and do not plant the weed *S. condylus* and remove small populations in bushland as soon as you see them. Use the native *Senecio pinnatifolius* var. *latilobus* (photo back cover) along the coast, islands and rivers.

**Greg and Bronwen Keighery**

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## Who can explain it?



On 9 December last, the Armadale Branch of the Society made its annual Nuytsia Hunt. These have been held for some years, to record the trees in various parts of the Armadale district. Members gather at a chosen spot, break into small groups and walk through designated areas. Besides gathering useful data it's a pleasant social outing and is followed by the Branch's Christmas lunch. It's always interesting to observe other wildflowers, especially some colourful early summer species. This year we visited an area in Jandakot Regional Park just west of Forrestdale Lake. One group returned with photos of a surprising find, a kangaroo paw

with a branching inflorescence of red flowers (photo above). Intrigued by this I went out again two days later with Kim Fletcher to check its identification and to see if we could find more. Just the solitary plant was seen, and it turned out to be *Anigozanthos rufus*. This species occurs along and near the south coast from the Stirling Range to Israelite Bay, so how did this one find its way here? The seed are not known to be distributed by wind and are unlikely to have been carried by a bird. The plant is in an undisturbed spot and has been there for some years – besides two current flowering stems it had several from previous years. The winter-wet clay flat on which it's growing was burnt some five years ago and from the plant's size it's likely that it was there before the fire. We saw no other non-local plants that might have indicated someone scattering seeds.

**Alex George**

## Northern Suburbs Branch

It's business as usual for the Northern Suburbs Branch Nursery at Landsdale Farm, now under the management of Family Support WA. Little seems to have changed so far and we are hopeful of developing a good working relationship with the new lessee. The nursery is still open on Thursdays and Saturdays and propagation efforts are stepping up now that we have more certainty of tenure. Plans are taking place for the 2019 Annual

Plant Sale on Saturday 27 April and we are also looking to attend other events, including the Eastern Hills Plant Sale and open days, throughout the year.

The branch is looking forward to a busy year, with an interesting program of guest speakers and perhaps an excursion or two. We have moved our Annual General Meeting to May to bring our financial year into line with the WSWA financial year and make reporting a little easier on both sides. We had an AGM in November to elect a committee to take us forward to May and we hope that everyone who volunteered will be happy to stay on from May.

We finished off our 2018 speaker program with a very thought provoking talk from Graham Ezzy on the issues facing the Antarctic continent and some of the possible wider consequences. Graham travelled to Antarctica a couple of years ago and noted the impact of human exploitation over time on marine life, animal life and the environment as a whole. Tourist numbers are increasing year by year and research bases also impact the Continent's pristine ecosystem in some ways. But the greatest threat seems to be climate change, with the largest glacier in East Antarctica melting from beneath due to warming ocean waters and huge problems becoming apparent with sea ice coverage. But there have been some positives in conservation and feral eradications on Sub-Antarctic Islands and self-imposed management and regulation of tour groups on the Antarctic continent.

**Christine Curry**

## **Facebook Page Membership Close to 11,000**

By the time this newsletter goes to print the Wildflower Society's Facebook page is quite likely to have a membership of over 11,000. It is currently at 10,925. An excellent flowering year for 2018 seems to have produced a flood of applications for membership. Judging by posted comments most people obtain a lot of enjoyment from looking at photographs of Western Australian flora. The added bonus is that active participants in the page run an identification service. This often involves lots of discussion and linkages to other internet sites such as FloraBase. A recent quote from a participant *I have lived in country WA all my life and before joining this group had no idea the wide variety of wild flowers all around the state and flowering in different places at different times.*

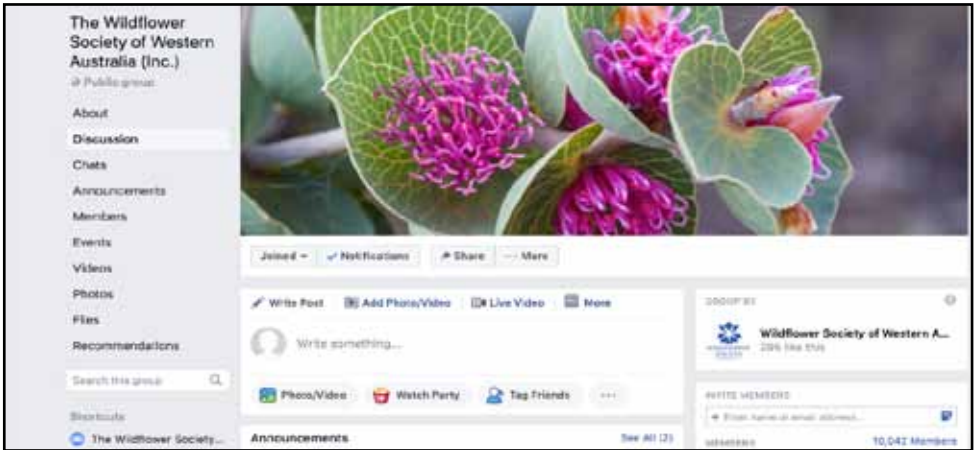
The site is primarily being used for the following.

- Images of WA flora species, in bushland, parks and private gardens. Some limited posting of non-WA species of Australian Plants and weed species is tolerated for educational purposes.
- Publicizing conservation issues regarding WA Flora. The issue of aggressive road verge clearing, particularly in the Wheatbelt, has had a good airing this year and hopefully will have some long-term benefits.
- Advertising branch and general Society activities. For example plant sales, walks, meetings etc.

Promoting the use of WA Flora in gardens by exhibiting examples of what can be achieved. The ability to provide discussion and advice on such things as cultivation, propagation, disease management and seed collection, is fabulous.

*I love this Facebook page because it doesn't matter who you are, or what you look like, or how old you are, or how knowledgeable you are, we are all in the same boat. What*

*could be better than that?* Posted 29<sup>th</sup> Dec 2018.



The Facebook page opens up tremendous opportunity to reach out to sections of the community that might otherwise be difficult to tap into. The ease with which images can be posted is a massive advantage. Postings of really destructive roadside clearings have clearly shocked a lot of people and have probably been seen by previously completely unaware sections of the community.

I urge any of you (i.e. Society members) who have yet to join the Facebook page to do so. Helping with identifications is a great pastime. A side benefit is that you get a good sense of what is flowering and where it is flowering from other peoples' postings. This is very useful if you are planning your own wildflower excursions.

**Janet Atkins**

## **ANPSA Blooming Biodiversity Pre and Post Conference Tour Information**

We now have more information on the wonderful tours before and after the ANPSA 2019 'Blooming Biodiversity' Conference. Tours 1, 2 and 4 are one-way tours, running from Perth to Albany before the Conference, or after the Conference from Albany to Perth. These tours are ideal for those who don't want the hassle of driving to Albany. Tour 3 starts in Albany and explores the rugged south coast before returning to Albany, with tours before and after the Conference.

We're also offering local half-day tours in Albany so you can see some of city's main attractions on the Sunday before the Conference begins. More details about these tours (and our great in-conference excursions) will be on the website soon.

Tour 1 - Kwongan and Woodland Tour

**Ex Perth 21-27 September 2019 OR Ex Albany 5-11 October 2019**

*Experience the natural wonders and history of Western Australia's Wheatbelt and Inland Southern Heaths.*

The areas we visit are part of a global biodiversity hotspot. You'll see inland sandplains



dominated by heath and scrub-heath vegetation (photo front cover); the Wheatbelt region with its wetlands; granite outcrops; remnant woodlands of Wandoo, York Gum, Salmon Gum, Casuarina; and spectacular wildflower displays. You will also visit the southern woodlands with remnant vegetation of Wandoo, Brown Mallet, Jarrah and Marri, and southern Kwongan heathlands.

The habitats you'll travel through provide spectacular, sweeping sceneries and are home to many unique and endemic plant species from genera such as *Grevillea*, *Hakea*, *Eucalyptus*, *Acacia* and *Philotheca*, and the daisies of the Asteraceae family. Many reptiles and invertebrates are also endemic to the Wheatbelt and heath areas, particularly lizards and ground-dwelling spiders.

## **Tour 2 - Granites and Lowlands Tour**

**Ex Perth 26-27 September 2019 OR Ex Albany 5-6 October 2019**

*Discover hidden gems of Western Australia's Darling Scarp forest, Kwongan heathlands and woodlands of the Western Wheatbelt*



This tour is ideal if you have limited time but want to see a range of vegetation and flora. It will get you to Albany in two days (or back to Perth in two days).

The tour includes an overnight stop at Narrogin, a Wheatbelt town that was once one of the largest railway hubs in the southern part of Western Australia.

On this tour you will spend time exploring the majestic granite and dolerite hills of the Darling Scarp (photo above Ellis Brook Valley. Photo Jolanda Keeble). You will then head into the Wheatbelt area to visit remnant woodland and Kwongan vegetation. These destinations will provide stunning sceneries of the Swan Coastal Plain and are awash with

wildflowers (depending on the rain received earlier in the year).

### **Tour 3 - Heathlands and Barrens Tour**

**Ex Albany 22-27 September 2019 OR Ex Albany 5-10 October 2019**

*Take in the natural wonders and flora of the Southern Mallee shrublands and heaths.*



The areas you will visit on this tour are part of global and national biodiversity hotspots. You will see coastal plains, colourful breakaways, rugged peaks and headlands, as well as stunning bays and inlets along WA's wild southern coast.

The habitats you'll travel through are home to many unique and endemic plant species. They are also home to endemic mammals, birds, reptiles and invertebrates. Spectacular sceneries are one of the highlights of this tour, as you travel from Albany along the wild southern coast to Esperance and return (Photo above south coast. Photo Jolanda Keeble).

### **Tour 4 - Coast and Forests**

**Ex Perth 23-27 September 2019 OR Ex Albany 5-9 October 2019**

*Walk among giants and learn the history of the Southwest of Western Australia.*

This global biodiversity hotspot in the southwest includes forests of Jarrah, Karri, Tingle, Wandoo and Tuart, as well as an array of estuarine, coastal and riverine landscapes (photo opposite Mt Frankland granites. Photo Jolanda Keeble) ).

On this tour you will walk among some of WA's tallest trees and may see many unique plant species, some of which have adapted to their specific location. Salt lakes can

also be found in the area, which are home to one of the oldest forms of life on earth.

The forests of the southwest are home to many different species of birds and animals, however many of them are secretive so you will need a keen eye and a bit of luck to spot them!



Tour prices and bookings will be available on the website from 1 February. You can read more about the tours, including detailed itineraries that are available as a download, on the [www.bloomingbiodiversity.com.au](http://www.bloomingbiodiversity.com.au). Bookings for all pre and post Conference tours open from 1 February and can be made through the website, so mark the date in your diary to ensure you don't miss out on a spot, as places are limited. Many thanks to the Conference Committee members for their work on these tours, but especially Jolanda Keeble who has done the lion's share of work, assisted by many individual members of the Society.

**ANPSA 'Blooming Biodiversity' 2019 Conference Committee**

## **Perth Branch**

In 2018 we posed the question-Why do some people just love wildflowers? The basic theme for Perth Branch talks for 2018 is - *'How did you get into working on and/or playing with wildflowers?'*

In June the renowned Botanist Alex George took us on his journey from a

childhood interest in orchids through an English Literature degree and the places and most importantly the people, especially a group of teachers fascinated by wildflowers who aided and influenced his interest in orchids, in particular that culminated in his professional career as a botanist. The society librarian Kerry had a huge table loaded with books and monographs by Alex, a fitting tribute to his influence on Australian botany.

In July Stephen van Leeuwen, now an assistant Director leading the Science Program in the Department of Biodiversity, Conservation and Attractions talked about his journey from the bush to the City, then back to the bush, and finally back to the city. Stephen grew up in rural Western Australia, attending agricultural colleges, before completing a doctorate on the very rare Mount Lesueur Banksia at Curtin University. Based in the Pilbara for more than 20 years Stephen worked in many widely dispersed arid areas. After coordinating the Pilbara Biological Survey Stephen returned to Perth. Stephen has a very strong interest in the wise management of the lands of Western Australia and is on many advisory boards and groups

In August Jiri and Marie Lochman presented their stunning images of Western Australian plants and animals appearing in publications ranging from books to National Geographic and Scientific Monographs (see November 2018 Newsletter).

In September Brian Moyle talked on 'Plants, landscapes and woodlands in the Life of Brian'. Brian trained as an industrial chemist and became an expert in refining sugar. He came to manage the CSR Sugar Refinery in Mosman Park. With an interest in growing plants Brian did a Horticultural Diploma and was introduced to wildflowers. This led to three decades working with the Society and over the last two decades Brian advocating for the landscapes of the Banded Ironstone Ranges of the Goldfields.

In October Lucy Commander presented her journey in a talk titled 'Germinating a passion for plants'. Lucy also has a keen interest in urban ecology, seed traits, threatened species and communities and human–nature connections. Lucy has extensive experience in organising national and international scientific conferences, and in June 2019 is planning to run a 2 day Nature City Seminar. Perth Branch first met Lucy when she spoke to the Branch after she was awarded the Branch's annual botany prize when a student at the University of WA (a prize the branch still funds).

In November three of our Committee presented talks on our theme. Long term Subiaco resident Lyn is an othersider and hails from Tasmania. On mostly retiring from her work as a specialist theatre nurse and sterile techniques expert Lyn became involved in plating techniques for embryo rescue and orchids at Kings Park and volunteering at the WA Herbarium and with Perth Branch. Lyn maintains an extensive Australian plants garden in Subiaco and manages a bush block in Margaret River. Mark hails from Canada, with a short stint in Africa and has since travelled the world. In Canada his family had a huge garden, a mini botanic garden. Mark documented each species mycorrhiza as part of his post graduate studies. He went on to work on growing bigger Eucalypts with fungi from China to Australia. Mark loves all plants but has a focus on WA orchids because of their association with fungi. Mark's fantastic photos are used on the Society's web page and many others can be found on the web. Jolanda from the Netherlands is an environmental consultant and has worked on many projects in WA including pollution control on WA's NW islands. Jolanda is a talented field naturalist and has researched and

published one field guide and is currently working on another. She is also President of the WA Naturalists' Club.

A very short Annual General Meeting preceded the lecture. Our committee members for 2019 are: Greg Keighery (President); Brian Moyle (past President); Jeni Alford (Treasurer); Nina McLaren (Secretary); and Committee members Bronwen Keighery, Mark Brundrett, Jim Barrow, Lin Barrow, Lyn Roberts, Jolanda Keeble and Graham Zemunik. Graham is new on the committee in 2019, we welcome him.

This has proved a great theme as the varied histories of our presenters are little known but of considerable interest to a wide range of people, and our attendances have all been good with around 50-60 people of many ages at the talks. Also no doubt helped by the web, Branch emails and notices in the Subiaco Post. Consistently attendees at the talks felt that the presentations should be videoed as an oral/visual record or at least a potted version done for the newsletter.

The Branch funded the acquisition of new books and newsletters of the 10 study groups for the Honor Venning Library. Kerry Smith, the honorary librarian brings a selection of library books on the monthly talk topic to the monthly meeting. If you are a Society member books can be borrowed at the meeting.

Perth Branch does not run many other activities at present but our members are very busy in Society activities/organisation including – people on the Management Committee; on the Conservation Subcommittee; on the Newsletter Subcommittee; on the Plant Survey Subcommittee; and on the national ANSPA 2019 Conference group. Members are also active in/members of other kindred groups, including: the WA Naturalists' Club, Kimberley Society and Urban Bushland Council. We keep busy!

Our Christmas gathering with Northern Suburbs Perry House on 8 December was a pleasant evening. After a ramble and our biennial quiz we enjoyed our own barbecue and shared salad or desert. As usual this was followed by selected photo presentations.

In closing, I would like to thank all my fellow committee members, our honorary librarian and you for your continuing support.

**Greg Keighery**

## **Australian Native Plant Society (Aust.) (ANPSA)**

On the 27<sup>th</sup> of November the second ANPSA meeting was held as a teleconference preceded by the Annual General Meeting. Except for the Annual meetings, when there are two delegates, each member society is represented by one delegate. The Top End Native Plant Society from the Northern Territory was an apology, but all other member societies were represented by their delegate. With all the elected officers the teleconference included 17 participants. Time differences ranged from 5 pm in WA to 8 pm in the Eastern states with daylight saving time. It brings home what a big country Australia is!

At the AGM the previously discussed changes to Rules and Bylaws were ratified. The main alteration was to simplify the appointment of officers such as “Newsletter Editor” by not specifying their titles. This eliminates the need to formally change the Bylaws every time it is found expedient to change or discontinue a role. One of the motions adopted at the Biennial meeting was the publication of the Rules and Bylaws on the ANPSA website.

What is this national body with the cumbersome acronym ANPSA? It is not a “peak

body” in the usual sense: it does not dictate policies to the member societies in each state and territory, which are independent. It creates an opportunity to present a united front of many members across Australia to promote our aims. Matters can be brought to the attention to of the politicians at the federal level. The four “objects” (should perhaps be objectives?) specific to ANPSA as stated in the Bylaws are:

- To further collaboration between autonomous member societies.
- To promote all aspects of the horticulture of Australian plants.
- To promote the conservation of Australian plants and their habitats.
- To speak with one voice for member societies at a national level.

## CONSERVATION

If you have any questions or concerns re conservation issues that you think would be of interest at the national level, contact your society delegate.

Eddy Wajon as the ANPSA conservation officer has led action on three major conservation issues in the past year. The threat to the bushland reserve surrounding the Jandakot airport in WA, the continuing damage caused by Brumbys (feral horses) in the Kosciuszko National Park and the ever increasing threat to Australian plants by the spread of the Myrtle Rust. A delegation from WA and ACT took the Jandakot airport issue to various federal government representatives in Canberra. They were received favourably but final decisions will take up to 18 months. Alternative solutions continue to



## Quaalup Homestead 1858 Wilderness Retreat Your perfect place to stay in the Fitzgerald River National Park

With over 1800 plant species, including some rare or endemic species like the Qualup Bell and *Hakea victoria*, abundant birdlife, famous Point Ann beach with its Southern Right Whale Nursery and the beautiful scenery of heathland and mountain ranges, this National Park is really worth a visit.

On our 40 acres of native bushland surrounded by the National Park we offer:

- cosy s/c ensuite accommodation (2 pers units, 2 bedroom chalet, 3 bedroom cabin)
- nature camping area (for caravans or tents)
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The Retreat runs its own environmentally friendly solar power system.

Bookings and more information: Ph: 08 9837 4124

Website: [www.whalesandwildflowers.com.au](http://www.whalesandwildflowers.com.au)

be proposed at the local level.

**Riitta Boevink, President, January 2019.**

## Art Exhibition

You are invited to attend “DRAWN FROM NATURE”, presented by the City of South Perth Historical Society Inc. and the City of South Perth program of Cultural Events 2019. Exhibition of works by local artist Kerry Henry who uses watercolour and pencil as her medium and paints in the botanical style. Western Australian flora, and more recently birds, are her subjects.

OPEN DAILY 10 am – 4 pm, 23<sup>rd</sup> – 31<sup>st</sup> MARCH, 2019. At the Gallery and Cultural Centre, History House, 111 Mill Point Road, South Perth (93679243). [www.southperthhistoricalsociety.org](http://www.southperthhistoricalsociety.org)

### CORRECTION Newsletter November 2018

Front Cover referred to this volume as ‘November No. 57 No. 4’, this should have been ‘November 2018 No. 56 No. 4’

**Australian**



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### WILDFLOWER TOURS LESUEUR AREA

Joy and Don Williams  
will be conducting  
wildflower tours in

the Lesueur, Alexander Morrison,  
Coomallo, Badgingarra, Eneabba  
and 'Hi-Vallee' areas again this  
wildflower season.

All size groups; 1 to several days.  
Explore with knowledgeable  
local guides. All interest groups –  
wildflowers, birdwatchers,  
nature lovers, photographers  
and bushwalkers – catered for.

Accommodation and transport can  
be arranged. Camping available.  
Further information and bookings:  
Ring Joy or Don on 08 9652 3035  
Mob 0427 230 345 OR write to  
'Hi-Vallee', Badgingarra WA 6521  
E-mail: [hivallee@westnet.com.au](mailto:hivallee@westnet.com.au)



## Summer wildflowers

*Dryandra mimica* (also known as *Banksia mimica*) is an extremely rare plant growing north of Perth, in Perth and south of Perth in 3 discrete areas.

These have been found to be genetically different enough to be considered 3 species.

These photos were taken by Brian Moyle in the northern area around the Moore River. The whole plant is above, and the flower head to the right.

Other summer flowering species are on pages 6 and 40.

**Bronwen Keighery**







## Coates Wildlife Tours

**Specialists in Nature Tours since 1986 (Small groups 6 - 12 passengers)**

**\*\*\* 14 Days Pilbara Reef & Ranges (Easy camping tour).**

Perth to Broome 4 - 17 May 2019.

Head north of WA for sea birding colonies on coral islands, marine life, coral reefs & Karijini's gorges. Abrolhos Islands, Shark Bay, Ningaloo Reef and Karijini National Park.

**\*\*\* 15 Day Kimberley Discovery (Easy camping tour).**

Broome to Broome 12 - 26 June 2019.

Enjoy a wonderful outback experience as we discover the Kimberley's Flora and fauna, spectacular outback scenery, Aboriginal history and many of the wonderfully refreshing waterholes. We explore Purnululu N.P, the many gorges of the Gibb River Rd, Home Valley and Mornington Stations. Tour also includes Geikie Gorge and Ord River cruises.

**12 Day Tanami camping Expedition.**

Broome to Alice Springs 11 - 22 June 2019.

This trip is packed with highlights including the Southern Kimberley, the Ramsar wetland "Lake Gregory", Wolf Creek Crater, the Tanami Road and Newhaven Sanctuary. Join us and discover the arid zone Flora and Fauna as we travel from the Broome on the Kimberley coast through the remote Tanami Desert to Alice Springs in central Australia.

**14 Day Western Explorer camping Tour.**

Broome to Perth 30th July - 12 August 2019.

Highlights - Karijini N.P, Mt Augustus & Kennedy Ranges.

This trip is designed to coincide with the Pilbara wildflower season and provides the opportunity to explore the wonderful Karijini, Mt Augustus and Kennedy Range National Parks.

**10 Day W.A.'s Mid West Wildflowers accommodated Tour.**

Perth to Perth 7 - 16 Sept. 2019.

See botanical hotspots north of Perth during wildflower season. The trip covers a diverse array of landscapes with the farmlands of the wheat belt before covering the highlights of the Kalbarri National Park and the northern sand plains around.

Eneabba, Badgingarra and the Mt Lesueur National Park.

**\*\*\* Introducing Easy Camping**

A Coates' support crew will travel ahead and have your camp set up when you arrive.

No more erecting tents, stretcher beds or packing and un-packing camping equipment.

This will all be done for you. Just pick up your bag and either spend time exploring the campsite or freshen up and relax before dinner.

**Contact us for our full 2019 tour program:**

**Free Call: 1800 676 016**

**Web: [www.coateswildlifetours.com.au](http://www.coateswildlifetours.com.au) Email: [Coates@iinet.net.au](mailto:Coates@iinet.net.au)**



## Summer Wildflowers

When Morrison (*Verticordia nitens*) flowers we are treated to an astounding and spectacular display (photo above, December, Melaleuca Park). This wonderful feather flower epitomises many aspects of the state's flora - tough spindly shrub with needlike leaves, amazingly coloured gold-orange massed flowers, special delivery of pollen in modified anthers, and a specific pollinator, the native bee *Euryglossa morrisonii* (photo back page). Some Society members will recall the Bob and Barbara Backhouse Morrison Christmas Tree (wire shape covered in Morrison from their bush block) that graced Christmas Society meetings for a number of years.



Interestingly in the last decade Morrison has been recorded in several Perth bushland areas after a summer fire a few years before. The photos by Margaret Owen (left) are from the Underwood Ave Bushland this summer. It was recorded from the Woodvale Nature Reserve after similar events. Both records were new and of a single plant. As these flowers will only set seed if the bee is present it will interesting if this plant sets seed. This will happen if the seed is present and the plant is self compatible. **B Keighery**



*Senecio dioschides*: above flowers with no ray florets; left plants in Karri Forest near Pemberton. Photos B Keighery

## *Experience the Great Southern Outback Wilderness Like Never Before...*

- ▶ Participate in a series of 4WD escorted private day and overnight tours to a variety of outback locations in the Ongerup-Boxwood Hill areas
- ▶ Optional overnight stay and dinner in Ongerup visiting "Gondwana Link" properties and experiencing the local Noongar indigenous meeting place. Next day visiting the Ongerup Museum and Wildflower Centre for morning tea with a visit to a local farming property to view nature at its best followed by lunch at the magnificent Yongergnow Malleefowl Centre in Ongerup to see the Malleefowl sanctuary
- ▶ Includes visiting the Wellstead CRC for morning tea, exploring the amazing Stirling Ranges and Bluff Knoll then proceeding to Ironwood winery in the Porongurup Ranges to meet Mary and Gene for wine tastings and afternoon tea
- ▶ Learn about the natural and cultural aesthetics of country with the diverse array of stunning landscapes and meeting local people
- ▶ Discover a range of amazing locations viewing wildflowers, vegetation restoration and re-establishing local species of wildlife such as malleefowl, tamar wallabies, pygmy possums and many more.

Express your interest or find out more all bookings via Wayne Monks on [wmonks@westnet.com.au](mailto:wmonks@westnet.com.au) 0499 113 193.

(Conditions Apply\*).

Tours depart Albany (Kinjurling) between Monday-Friday.



