ISOPOGONS & PETROPHILES

The Association of Societies for Growing Australian Plants Isopogon & Petrophile Study Group Newsletter

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Petrophile fastigiata. Near Esperance, WA, October 2003.
(See page 10 for more details about this species)

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EDITORIAL

Welcome to the fifth edition of Isopogons and Petrophiles. It is about three months late and my only excuse is that I seem to always be running out of time. Has anyone got a solution to this problem?!

Well, spring has passed and summer is almost over. In October-November, for the first time, *Isopogon latifolius* flowered in my garden, with 13 fantastic large pink inflorescences. What a sight! I also had excellent displays from *Isopogon formosus, mnoraifolius*

Isopogon mnoraifolius, Sept 2003

and *trilobus*, as well as my dwarf *Isopogon anemonifolius*. *Petrophiles biloba, longifolia* and *cyanthiforma* were also excellent, and I had a single inflorescence on *I. sphaerocephalus*.

Unfortunately the long dry has lead to the deaths of a number of my favourites including *Isopogon dubius*, the above-mentioned *I. mnoraifolius* and *Petrophile teretifolius*. We have had the hottest December on record, followed thankfully by a mild January and February. Even so, it is bone dry even a centimetre or so beneath the surface and apart from a spectacular storm or two there has been no meaningful rain for some time.

I know that those of you further up the east coast have had some good rain recently and I'd like to request you send some of it down here please. It's only fair and reasonable to share!

I have my fingers crossed for autumn rains and have lots of small plants and seedlings ready to go in.

In January my family and I visited Tasmania for the ASGAP biennial conference in Launceston. This is my second ASGAP conference and I would thoroughly recommend them to everyone. The Tassie conference was particularly well organised with superb scenery on tap for outings, amazing gardens to visit and a most impressive, interesting range of speakers. I learnt heaps about the island state, and its flora. We always knew that it was different over there and I found out why! Tasmania is actually part of Antarctica, rather than Aus, which helps to explain the unique geology and numerous endemic flora species. Of course, I also had a chance to catch up with and meet heaps of people including members of the study group and this fellowship is the main reason people keep going again and again to the conferences. The Isopogon and Petrophile study group, along with a number of others, had a display. I took along a computer and had a repeating slide show of some of the best examples from the genera, as well as some laminated enlargements and general info on Isopogons and Petrophiles. There was a lot of interest and a few new members have joined. (Welcome to you all.) Congratulations and thanks go to the organising committee for making it a great event. The next conference is in Perth in October 2005, so start planning now. The pre and post conference tours will be heading right into coneflower heaven, and so I hope to see a number of you there!

As leader of the group I have been asked by a number of the Victorian APS groups to talk about the genera and have thoroughly enjoyed doing so. I have even been able to go to the regional centres of Warrnambool and Shepparton, which was excellent. I have been given an invite to talk in Newcastle and am hoping to be able to fit that in later in the year. Thanks to the members who have donated photos and slides, as I use a number of them in these talks. It surprises me that many APS/SGAP members have really not heard of these plants and so I am glad to be able to promote them to more native enthusiasts.

This issue contains heaps of info from the members of the group. Thanks to all those who have written. Please keep it up. Let us all know how you are going with Isopogons and Petrophiles, any propagation or study results, or any tips and hints. I have described my visit to the Royal Botanic Gardens at Cranbourne, near Melbourne, where there is an extensive collection of *Proteaceae*. The featured species is *Petrophile fastigiata*, a plant well worth growing, and I report on the study group's first scientific study. I hope you enjoy it.

David Lightfoot ☺

Members' letters and emails

From Barbara Buchanan. Myrrhee, Vic. Jan 2003

My list of I and P's has been somewhat shortened. The *I speciosus [? I. formosus Ed],* a young plant was chewed back to wood, presumably rabbit, maybe wombat and we have now acquired deer to help destroy the garden. I had hoped it might resprout but no such luck. I had thought it safe to remove the guard because a big old *I.* [*formosus*] or *I. dubius* is never touched. My remaining *P. biloba* also died, diseased where the bark had been split by snow some years earlier. Fortunately I have been able to replace it with a plant that was discounted-overgrown in its pot which seems to be doing very well. The same batch of plants included *P. serruriae* (pink form), and a Hakea and they all seem to have settled in well. I know there were other losses but can't remember what right now.

I don't think that I included *P. sessilis* in the list I sent you when last seen still a slight, straggly foot or so high, now in its second drought summer without additional water. Not a very exciting garden subject to date but it lives.

It's not just the drought hitting the garden but the heat. A cool change means low 30's instead of high 30s to 40. My garden water source has dried up, so I turn to my patchwork to shut off till better times return.

This was written a year ago now and I'm hoping that things are looking up for those in the country. There has certainly been more rain this last twelve months but not enough to be drought breaking. Let us know how things are going Barbara. Ed.

From Joke Meyer, Tamworth NSW August 2003

My Isopogons have not done well. I had an *Isopogon formosus*; it stood about 60cm tall, and had 20+ buds. It looked healthy and promising. Then it was pruned by hungry Kangaroos during the big dry and 4 buds remained. Although I gave it TLC it went downhill from then on.

I recently (about 6 months ago) bought an *Isopogon anethifolius*. It is showing bronze coloured tips. Is this normal colour or if not, is there something I can do? The plant is about 0.5m high, is getting early morning and early afternoon sun.

The bronze coloured tips are normal for new growth. This is common in both Isopogons and Petrophiles. In some species the new growth is deep red and an extremely attractive feature of the plant. Below is a picture of Petrophile fastigiata with red new growth. Ed

From John Nevin, Armidale NSW August 2003

I did have *Isopogon mnoraifolius* for many years but it died this winter after 10 years- hardy to frost and drought and flowered well.

I have many other species in pots that I hope to put in when spring arrives and the frosts are clear so as to give them a chance to establish before next winter. I bought these from Phillip Vaughan.

Phillip has a nursery near Geelong and stocks a wide range of interesting natives, including many WA species and grafted plants. His number is 03 5250 5592. Ed

From Margaret Pieroni, Attadale, WA June 2003

The Isopogons that I hoped would flower in the pots and one or two that I planted out at the back of the house all with buds when I bought them, failed to flower. I moved those in pots into a more open spot to get more sun but it must have been too late. It seems that *I. formosus* and its forms and *I. dubius* need full sun to flower. I have these in pots to take down to Denmark. *[Margaret is moving down South]* I will plant them in my planned rockery on a north-facing slope.

Back in April I sowed some *P. filifolia* seeds in exactly the same way as I had done so successfully with *P. helicophylla.* Germination-ZERO! I wonder whether the seed has to be years old as well as needing smoke? I haven't tried it without burning

the leaves on top. Do you think if I leave the tray the seeds might germinate next year? We've had so much rain lately that they may well have rotted. *[I have a feeling that years old seed doesn't do very well with Petrophiles- just a gut feeling not based on any science. I agree they may have rotted- see my germination of P. drummondii article. Ed]*

…try and drive up Cascades Rd [South WA] More than half is completely burnt out but near the Lake King-Norseman Rd end there are some patches of Verticordia left. When I went with the Cavanaghs to Lake King from Hyden we looked for *P. helicophylla* on the Magdaba track between Newdegate-Ravensthorpe Rd and Old Newdegate Rd. It isn't on the road atlas but is signposted. It's one or two Km's west on Old Newdegate and goes NE to join the main road ±20km South of Lake King. We didn't find the Petrophile but I have seen it there growing among low growing heath. I'm pretty sure my seeds came from there.

I see in the "Flora" [Flora of Australia] that your *I. alcicornis* has been collected at Mt Baring in Cape Arid National Park. We haven't been there but it is on the border so there's probably a firebreak track going near it. There are a lot of collections from there in the herbarium but very few from elsewhere in the Park.

… Stop Press! I was showing Elizabeth my potted plants the other day and we noticed two *P. filifolia* seedlings! They are so tiny I had overlooked them.

This shows it pays to leave your seed trays for a good while- you never know when you'll get a nice surprise.

Margaret has sent me some seed of P. filifolia for the seed bank as well as more superb photos and slides. Thanks very much Margaret. Ed.

From Hugh Seeds, Beverley WA
June 2003

I have planted 2 *Isopogon dubius* and one *Isopogon divergens* this year in 1 foot of sand over clay. They are growing well in spite of a very hard summer.

From Bob O'Neill. Wandin North, Vic.
May 2003

So far here nothing new except that I've struck a few cuttings off last season's planting. All is going well with the Isopogons before we enter the winter period. Perhaps the wet conditions may adversely affect some of our plantings in the lower area, we can only wait and see. Trust that your neck of the woods is a flower and flourishing.

June 2003

I noticed that a number of Petrophiles have been grafted. Obviously they are more touchy and need excellent drainage. I wonder if some of those would be okay in deep sand in our climate. I will certainly be searching for additional species. Thanks for the action to be taken re people positive to plant material exchange. If that leads to members communicating directly or even arranging visits that will be most beneficial to the cause.

I. trilobus is making fresh growth. It is interesting that some shoots have made continued slow growth or have remained dormant, while others are some 100mm in length of fresh growth. Why have some shoots grown in this manner, others have not? I guess it is a protective mechanism that all eggs are not in the same basket. No Isopogons are in flower at this stage but they are budding up. Otherwise all is progressing as usual for us. I am taking a few more cuttings hopefully to be ready for spring planting. Trust all is well at home and your little treasures are doing the right thing.

From Lynne Bilston, Ashfield NSW.
May 2003

I have no living Isopogons at the moment, and more than one drowned WA plants of other types. Will it ever stop raining in Sydney?

Want to send some of that rain down south, Lynne? Ed.

From Phil Trickett, Canberra, ACT
June 2003

One of the local nurseries in Canberra has an *Isopogon cuneatus* X *buxifolius*. It looks a lot like a Stucky's hybrid. Are they the same?

I emailed Phil to let him know they have the same parents Ed.

They certainly are a great plant. I have had one for about 4 years. It flowers profusely in spring, and seems to require zero water. Last year, the one I have received no water throughout the Canberra drought, and actually seemed to thrive. It's now fully budded up ready to cut loose again in spring.

[I emailed Phil in Feb 2004 to find out whether the hybrid had flowered. Here's his reply and the photo he sent. Ed]

The 4 year old one had masses of flowers again. I've attached a photo of the flower. Beautiful isn't it? I've planted another two of them around the garden, one of which is planted in a really dry spot

under a large eucalypt. It's thriving at the moment, supporting my theory that they don't require much water.

It certainly is a great plant Phil and I find it relatively hardy in Melbourne. I have been able to strike a number of cuttings from mine, and I generally have trouble getting good cutting strike rates, so to me this plant is easy from cuttings. Ed

Interestingly at the Botanic gardens in Canberra, a great specimen of *I. cuneatus* in the main rockery is in full flower. It has been in flower for at least 3-4 weeks. Lots of plants seem to be flowering out of season at the moment. I have two grafted Qualup Bell plants (*Pimelea physodes*) in full flower at present.

I asked Phil if the plant was grafted or on its own roots. Ed.

I checked on the *I. cuneatus* at the Botanic Gardens on the weekend, David. It seems to be on its own roots. It is a good 2 metres high at present, which surprises me. I didn't think they grew that high. It has masses of new buds. It looks like it will be flowering for months to come.

October 2003

I have uploaded a couple of photos from our garden of *I dawsonii*, surely one of our most under-rated Aussie plants. I can't understand why it's not more widely available. I have only ever seen it in a nursery near Bellingen in northern NSW.
This one is about 4 years old on our north facing wall, where it seems to thrive. It receives protection from Canberra's frosts, being under the eaves.
Does anyone know where it is found in the wild? I have read that it occurs in the Goulburn River area, presumably in the Goulburn River National Park. Its common name of Nepean Coneflower indicates that it was/is in the Nepean River area near Sydney.

I can't agree more (Nice photo BTW). It's a spectacular plant, pretty hardy, frost tolerant and adaptable to many soil types. Its natural distribution is "Central-western slopes of the Great Dividing Range, and the central tablelands and central coast of NSW." (from Flora of Australia). My Dad went up to Mudgee on the October long weekend and said it was common near Sandy Hollow. He sent me some cuttings by express post (Thanks Dad!!!) that were really healthy, and most are still going fine. I think he's had a good strike rate in Newcastle. It has been planted at the RBG Cranbourne research garden and there are lots of seedlings. That's in deep sand.

Phil also sent me a seed cone from P. shirleyae. This is the most northerly of the Eastern Petrophiles. Thanks Phil and I'll let you know of any success. Ed

From Marina Tyndale-Biscoe, Braidwood, NSW
June 2003

Last year I collected seed of what I thought was *I. anemonifolius, I. anethifolius* and *P. pedunculata.* The seedlings of all three look identical- all with needle like leaves. Is this usual?

The way to separate Isopogon form Petrophile early on is by looking at the seed and cotyledons. The seed of Isopogons looks like a drop shape covered in hair (picture on left), whereas the Petrophile looks like a little heart shape (picture right).

The Isopogons all have linear-type simple cotyledons, whereas the Petrophiles have cotyledons that look like heart shapes with the points of the "hearts" touching at the stem. In terms of the true leaves, the I. anethifolius and P. pedunculata will have terete leaves, whilst the anemonifolius should have flattened leaves. I hope that helps. Ed.

From Mark Ross, Windsor, NSW
Jan 2004

I have done a little bit of grafting in October but as

this clashed with the arrival of fresh Banksia seed for grafting and the grevillea grafting season, I won't be doing any more Isopogon or Petrophile grafts until march or so. I did a couple of *I. latifolius* grafts and a couple of *I. dubius*. These are just coming through the tape now and hopefully will be growing on.

Mark has a wholesale nursery and is grafting many unusual genera including Banksias. Hopefully we'll see some of his grafted plants available soon in our local nurseries. Ed

From Hilary Merritt, Canberra, ACT June 2003

I must say I enjoy your newsletter. I was particularly interested this time in the article on *I. fletcheri*. Last spring a Canberra nursery was selling this and I grabbed one without knowing anything about it. When I looked up my reference books I didn't think we could provide anything like its natural environment so I put it in a pot (square terracotta, about 60 cm x 60 cm x 60 cm) in commercial native potting mix and with some *Brachyscome rigidula* that I'd grown from seed. The plant faces more or less northeast and has dappled shade in the afternoon. It has done very well despite the harsh conditions over the summer and my very erratic watering regimen and has shown no signs of flagging or stress. It has probably quadrupled in size over the 9 months I've had it, from about 15 cm to about 60 cm tall. It does have a slight tendency to grow out into the light so I rotate the pot from time to time. No sign of flowering yet but I am hopeful.
You might also be interested to know that as well as *I. anemonifolius* and *I. anethifolius* and a prostrate Isopogon (unidentified). I have had an *I. dubius* growing in my garden for about seven or eight years. It's on a north-facing slope with light overhead cover and is in an area that doesn't get watered, (although in the drought we've just gone through it did get an occasional half bucket just in case). It flowers well each year around October/November and is about 90 cm tall x 90 cm wide.

Thanks for the update Hilary. I too have I. fletcheri and it is growing slowly but is healthy. It is in the garden in shallow soil over clay in full sun- very different from its moist sandstone cliff home of the Upper Blue Mountains. Ed.

From Cas Liber, St Pauls, NSW June 2003

I have my Woorikee 2000 with a couple of flowers on it (and a few buds), the *I. fletcheri* has a couple of buds, as does the I. Stuckey's hybrid. Last time I looked I thought my *I. anethifolius* (still to flower 3 years after being bought in a 6" pot!!) may be developing buds - will have to double check.

Can't remember if I already asked this - do you feel *I. trilobus* has a more showy bloom than the eastern yellow spp.?

Glad to hear! Re I trilobus- I'd say it's as spectacular as the Eastern species but is a little less showy than I. anemonifolius when that's at its best. However, I. trilobus has a different look from the Eastern species. As the individual flowers tend to point up or down on the flower head, rather than straight out, it has a barrel shape rather than the more usual globular

shape (Thus the common name of barrel coneflower). I must say that it is one of my favourites and I have three specimens in my garden as well as a number of seedlings in pots. One flowered this spring with about 20 heads. I pruned it back pretty hard last year and it has bushed out well. The possums seem to like the new growth and tip prune it a bit. Ed

Feb 2004

I was talking to Phil Keane at the NSW group meeting in Ermington and he had a *I. latifolius* grafted onto *I. anethifolius* (I think) and said he was doing a few of these yearly now, but that they didn't sell in native nurseries but sold well in general nurseries. He wondered whether it was because people in a native nursery looked at the leaves and thought 'South African protea' but wasn't sure. Anyway, it was good to see them anyway.

This is such a great plant; everyone should have it in a pot or in their garden. Re the lack of sales in native nurseries, I would suggest a couple of other reasons may be that native enthusiasts are unwilling to spend the extra money on a grafted plant or are wary of WA species in Sydney, and haven't become used to the hardiness of grafts (whereas non-native enthusiasts wouldn't know to be wary). Ed.

From Stephen Selden, NSW
September 2003

I used to like seeing the Isopogons at Barren Grounds Nature Reserve (*Isopogon anemonifolius, Isopogon anethifolius*), which is on the top of the escarpment on the South Coast (Kiama) of NSW. This area is described as "suspended swamp" as water accumulates on a plateau making things very often extremely wet. The level of diversity in the heathland community there is quite spectacular. This type of area as people would know, can be quite harsh. I think it is great that nothing seems to get a foothold enough to dominate the community and as they all try to evolve a competitive edge so that they can dominate they explode into a profusion of species. Anyway here is a [website address to a] list of the species that occur there, http://www.iroc.nsw.gov.au/html/vegetation/p225.html

From Margaret Moir, Margaret River, WA
September 2003

There was mention of the local Isopogon, *formosus*, I think...by Cas? and how it does well in wet conditions. Thought some might like to see the species and the rare subspecies [from the Margaret River swamps that way *points east*], taken from my plant census of local flora. Very adaptable plants, all of them. Notice that both forms of *formosus* grow in swamps, very wet swamps in winter, too.

Thanks for the info Margaret. I have reproduced the table below. I too have heard this about I. formosus. Neil Marriott tells me he has seen them almost under water during the winter wet in some parts of the SW. This may explain the relative hardiness of this species in the Eastern States. From Margaret's table, it would seem that P. squamata would also be hardy. Indeed, it is doing so well at Cranbourne, near Melbourne, in the deep sand there that it is showing weed potential. Ed

Isopogons and Petrophiles from the Margaret River area of Western Australia- Margaret Moir.

Name	Common Name	Notes	Flowers	Soil	Propagation
Isopogon formosus	Rose Coneflower	Small-medium. Ornamental (O) Adaptable (A)	Pink, purple, red. Jun-Dec	Sand, laterite, granite. Swamps	Seed, cutting
Isopogon formosus subsp. dasylepis		Small-medium. O A	Pink, purple, red. Jun-Dec	Sand, sandy clay, gravely sandy soils over laterite. Often swampy	Seed, cutting
Isopogon sphaerocephalus	Drumstick Isopogon	Small-medium. O A	Cream, yellow Jul-Jan	Laterite, sand, often gravel	Seed, cutting
Petrophile acicularis		Small O	Cream, yellow white. Sept-Nov	Sand, sandy gravel	Seed
Petrophile diversifolia		Tall, slender O	Cream, white, pink. Sept-Dec	Gravely sand, clay	Seed
Petrophile linearis	Pixie Mops	Small O	Pink, grey, white. Aug-Dec	Sand, often over laterite	Seed
Petrophile serruriae		Medium O	Yellow, cream, grey/pink. Jul-Dec	Sandy and/or gravely soils, laterite, clay.	Seed
Petrophile squamata		Medium-tall O	Yellow, cream, white. Jun-Dec	Sand, clay, gravel Swamps, Winter-wet	Seed
Petrophile squamata subsp. squamata		Medium O	Yellow, cream, white. Jul-Dec	Swamps, Winter-wet	Seed

A visit to the Royal Botanic Gardens, Cranbourne

In September I had the opportunity to visit the Research Garden at the Royal Botanic Gardens Cranbourne. The Cranbourne Gardens are an annex of the Melbourne Royal Botanic Gardens, and are located about one hour southeast of the city centre. They were established in 1970 and feature large areas of natural Bushland stretching over about 360 hectares, located on the sandy soils that are a major feature of the eastern side of Port Phillip Bay. In the past, the land had been used for grazing and sand mining. Most of the Gardens were opened to the public for passive recreation in 1989. There is a picnic area and walking trails, with interpretive signs, have been developed through the heathland vegetation.

A major development at the Gardens is the new "Australian Garden", which will feature a large planted area designed to showcase the breadth and diversity of the Australian flora. This Garden is in its planning stages with some of the infrastructure completed and initial plantings scheduled for May 2004.

One of the "hidden treasures" at Cranbourne is the Research Garden. This is an area planted out with mainly Proteaceae from around the country on the site of an old sand mine, (the mining activity having cleared the natural bushland from the site). It is on open sloping ground with a soil that is essentially deep sand. It is very nutrient poor and although well drained, does retain moisture, especially below the surface layer. The first plantings were in May 1980 when the ASGAP Dryandra Study group started its Dryandra collection (See the ASGAP Dryandra Study Group newsletters 4-12, 19, 25, 36 & 37). The Isopogon, Petrophile and other Proteaceae plantings commenced in 1984. Plants were planted, watered in by bucket and then left to their own devices, there being no "gardeners" in the research garden. There has been no active planting for the last two to three years.

I. formosus

The area has become infected with Phytophthora in the past and there were extensive losses of some species. Better prevention of spread by people entering the area, combined with the recent drought years seem to have overcome the problem to some extent. Recently there have been less losses and a return of some of the sensitive local indicator species such as *Epacris impressa* in large numbers.

Warren Worboys, the Horticultural Development Officer at Cranbourne, took me to the garden. It is in the centre of the annexe and is not marked on the tourist maps of the area. We cleaned our shoes in disinfectant before leaving (and after returning to,) the admin centre and then I was dropped off and set loose, as Warren had to return to the admin centre for meetings. I was in my element!

The day was cool but clear and there had been a little recent rain. It was still a bit cool for snakes, which was nice as they are fairly common in the area. I had a copy of the master plant map to use. Bob Cross and a number of volunteers developed this map around 1998, with every plant identified and a GPS location marked. It was a great starting point in looking for Isopogon and Petrophile, but I soon determined that it was already out of date. Many plants were no longer present, and heaps of new seedlings and shrubs that were not listed had sprung up. In addition, some of the plants were incorrectly identified, or have had name changes. I hope that study group members will be able to update this map.

The Isopogons and Petrophiles are planted in a crescent shaped area on the northwest slope of the

central high area of the Research Garden. The eastern species are, in general, on the southern part of these plantings separated from the Western Species by a clear area of about three metres. The smaller and prostrate species are on the eastern edge of the plantings. There are up to ten individuals of each taxa, planted in labelled rows. Some of the labels were missing, and conversely there were a number of labels with no corresponding plants representing losses of that species. This was especially true for the smaller Isopogons such as *I. petiolaris, I. mnoraifolius*, *I. asper, I. linearis, I. adenanthoides* and *I. alcicornis* (one unhealthy plant was left of this species). These losses may well have been due to the extended drought in Victoria.

P. rigida in bud

There were a number of species spectacularly is flower. These included *I. baxteri, I. dawsonii, I. dubius, I. formosus, I. scabriusculus, I. buxifolius, P. longifolia* (prostrate form), *P. squamata, P. plumosa, P. biloba, P. brevifolia, P. media, P. heterophylla, P. glauca* and *P. divergens*

I. scabriusculus

I was a little early for all taxa, and there were buds galore on *I. anethifolius, I. anemonifolius, I. sphaerocephalus, P. pulchella, P. shuttleworthiana, P. sessilis, P. shirleyae, P. ericifolia, P. rigida, P. striata, P. seminuda, P. teretifolia,* and *P. incurvata*

Some species didn't look like they were going to flower this year, perhaps due to the harsh conditions, and these included *I. teretifolius, I. trilobus, P. multisecta, P. diversifolia, P. carduacea*, and *P. fastigiata*

A few species were obviously doing very well and had become locally weedy. They had not, as yet, escaped into the surrounding bush. The staff are concerned about these species and some control measures will need to occur in the future. The worst offenders were *P. squamata, P. fastigiata*, and *P. sessilis*. To a lesser extent *P. ericifolia* and *I. formosus* had moved a little away from their plantings. Most other healthy plants had some seedlings close to them.

Although I was not actively looking for them, I did not notice any hybrid plants, but did notice a number of different colour varieties. This was most noticeable with *P. biloba* with white, grey, pink and pink-grey plants.

I thoroughly enjoyed my day in the garden and am looking forward to heading back there again. I plan to in more detail key out some of the more difficult species as well as bring the master map up to date. I am sure some of the species in this garden will be brought to the "Australian Garden" when it is opened and will certainly grow well for the visiting public.

P. squamata

P. glauca

PETROPHILE FASTIGIATA R. Br.

This is another of the spectacular yellow, terminally flowering, western Petrophiles. It has the added feature of having bronze, to deep red, coloured new growth that is often on the plant at the same time as the flowers, giving fabulous contrasts (see pages 1 & 3). It is found in the eastern part of the south western botanical zone, from the eastern end of Fitzgerald River National Park to just north east of Esperance. Robert Brown, the father of Australian Botany, described it in 1810, as part of his great summary of the *Proteaceae* known up to that time (see Issue 1, page 4). The species name comes from the adjective fastigiate, which means having erect branches that grow parallel to the stem, giving a plant a columnar, or pyramidal growth habit. This growth habit is very uncommon for *P. fastigiata*, implying that, like a number of early descriptions for other plant taxa, the specimen that Brown used as the basis of this description was certainly not representative of the species as a whole. (But see leaves below.)

It is a small-medium shrub 60cm to 1.5 m tall and up to 1.2m wide. The mid green leaves are up to 11 cm long. They are terete, glabrous and pinnate with the petiole being half the total length of the leaf. The divisions are deep and they may be further divided 2-3 times, ending in soft points. The leaves tend to curve upwards giving individual branches a columnar habit and this may in fact be the reason Brown chose *fastigiata* for the taxa (my observation only).

The 1 cm long flowers are creamy yellow to yellow and appear from September to November. They are held in ovoid terminal inflorescences that are up to 4.5cm long. The inflorescences are very conspicuously held and may be clumped together or solitary. When in flower they are stunning. The cone has a base of hairy bracts and in bud can be very sticky.

As mentioned above *P. fastigiata* is found in the central part of the coastal region of southern WA. It is found in a variety of vegetation and soil types, from open mallee and denser scrub to low heath. It can be found in soils ranging from gravel and laterite to sand, even with some clay component. These features would suggest that it should be relatively hardy on cultivation.

It can be grown from seed or cuttings from firm young growth. I have not heard of anyone grafting this species, but have seen it for sale occasionally in specialist nurseries. *P. fastigiata* does better in full sun, getting a bit leggy in shaded positions, (although it does respond well to light pruning), and seems to be moderately frost hardy. Well-drained acidic soils are preferred although not essential.

The plant is represented in National Parks and Nature Reserves, although much of its former range is now farmland.

I think this is an outstanding Petrophile that has great horticultural and cut flower potential. Once again only one member of the study group is growing it. I have seed available if anyone is interested, drop me a line.

(Map reproduced from Flora of Australia Vol. 16 with permission of ABRS. Photos courtesy of D.)

GLOSSARY

Bracts- A modified leaf at the base of the flower. They can be the showy part of the inflorescence, e.g. in Flannel Flowers (*Actinotus helianthi*) and Qualup Bells (*Pimelea physodes*).

Cotyledon- a simple embryonic leaf, often the first leaf after germination.

Fastigiate- having erect branches held close together, thus giving a columnar shape

Glabrous- without hairs, smooth

Globose- ball or globe shaped

Inflorescence- a group of flowers arranged as a distinct entity

Linear- edges parallel and length at least ten times width

Ovoid- elliptical in shape with the base broadest

Pinnate- has an appearance like a feather. The description of compound leaves where the leaflets arise from a spine and give this appearance.

Petiole- the stalk by which a leaf is attached to the rest of the plant

Taxa- (plural of taxon) comes from taxonomy, which is the science of classifying organisms into groups. A taxon is a group of plants sharing a relationship and so are categorised together. It is a unit of taxonomy.

Terete- circular in cross section.

Terminal- at the end of a shoot

Tomentose- covered in a felt like downy hairs. The covering being called the tomentum.

GERMINATION TRIAL OF *PETROPHILE DRUMMONDII*

In June 2003 I began the study group's first formal trial. I wanted to determine if any pre-treatment would alter germination rates for Petrophiles. I decided to trial *P. drummondii* as it is one of my favourites, I had lots of fresh seed available and it is not often available for sale in nurseries.

On June 8, I prepared 60 seeds that had been collected in WA in August 2002 (I have a CALM collectors licence). They were divided into 6 groups of ten seed.

- No pre-treatment- directly sown.
- Soaked in room temperature water only.
- Soaked in initially close to boiling temperature water.
- Soaked in Smoked water- 1 in 10 diluted "Friends of Kings Park" smoked water.
- Initially nicked with a "Stanley" knife then soaked in room temperature water.
- Initially nicked with a "Stanley" knife then soaked in the dilute smoked water.

The seeds were soaked for 72 hours before being sown onto a mix of 2/3 commercial Australian Native potting mix and 1/3 washed sand. Each group was in a single pot. They were covered with a thin layer of washed sand and then put into a tray with water to 1 cm depth to allow capillary action watering from below. The pots were outside in a sunny spot (given it was winter) and were not watered from above apart from when it rained.

RESULTS

The results have been disappointing to say the least. To date I have not had a single seed in any group germinate. I have had greater success with other Petrophiles I have tried in the past. There are a number of reasons why this may have occurred. The seed I collected may not have been viable, or perhaps was not mature when the fruit was picked. I think soaking for 72 hours is too long (although one group was not soaked). In addition I think the seed may have rotted in the pots, as the potting mix was kept moist at all times. This is a difficult to overcome problem, as I don't have the time to be as diligent as I should and so seed can dry out or be too wet very easily.

The experiment was fairly easy to run though, and I would like to hear if anyone has any ideas or tips. I spoke with some people at the conference in Tasmania and they don't pre-soak their seed, rather they spray from overhead with either plain or smoked water once the seed has been sown and covered.

SEED BANK

The following seeds are available for members. Please send me a stamped self-addressed envelope, containing your requests and a small seed-type envelope for each species. I have purchased seed from Nindethana seeds. (Nindethana have the largest range of Australian plant seed that I have seen. You can find them on the web at http://members.iinet.net.au/~nindseed/ or order a catalogue by writing to PO Box 2121, Albany, WA, 6331.) In addition, I have added a couple of new species this issue. Thanks to Margaret Pieroni, Paddy Lightfoot and Phil Trickett for their donations to the seed bank. Please let me know which species you would most like to see in the bank. Donations of seed from any taxa will be gratefully added to the bank

Isopogon adenanthoides
Isopogon anethifolius
Isopogon buxifolius
Isopogon ceratophyllus
Isopogon cuneatus
Isopogon dawsonii
Isopogon formosus
Isopogon trilobus

Petrophile antecedens
Petrophile biloba
Petrophile carduacea
Petrophile canescens
Petrophile diversifolia
Petrophile drummondii
Petrophile ericifolia
Petrophile fastigiata
Petrophile filifolia
Petrophile glauca
Petrophile heterophylla
Petrophile incurvata
Petrophile linearis
Petrophile longifolia
Petrophile macrostachya
Petrophile media
Petrophile pedunculate
Petrophile pulchella
Petrophile rigida
Petrophile scabriuscula
Petrophile semifurcata
Petrophile serruriae yellow & pink
Petrophile shirleyae
Petrophile shuttleworthiana
Petrophile striata
Petrophile teretifolia

REFERENCES

The following references were used, with the permission of the copyright owners where appropriate, in the preparation of this newsletter. (Thanks)

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