
ISOPOGONS & PETROPHILES

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Petrophile serruriae. Dryandra woodland, WA, September 2005.
(See page 8 for more details about this species)

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EDITORIAL

Welcome to edition 8 of the *Isopogon* and *Petrophile* study group newsletter. You'll find that this issue is a little thinner than previous ones, as I have not had a great deal of material sent to me. If anyone is sitting on an article for the newsletter, please send it in. All will be gratefully accepted and who knows, you may (will more likely) find yourself immortalised in print. Thanks to all those who have sent me letters and emails. They all contain valuable information to help our understanding of *Isopogons* and *Petrophiles*.

I can't believe its May already, the year is flying past. It is already a little later than the best time of year to be planting out in southern Australia. Those of you from warmer areas will still have some active growing time left so get out there into those gardens!



Isopogon uncinatus

I managed to get to the APS Geelong plant sale about a month ago, which was fantastic. As usual there were a large number of growers from all over Victoria and interstate with a huge variety of plants for sale. There were a few *Isopogons*, but not many *Petrophiles* available, but I did manage to pick up *Isopogon baxteri* and one labelled as *Isopogon uncinatus*, two species I have not previously seen for sale, and one's I have admired and looked for. They are planted out and I'll let you know how they go. *Isopogon uncinatus* is the rarest *Isopogon* and was thought to be extinct until it was rediscovered in the 1980's near Albany on the WA south coast. It is now known from only 9 populations and last year I was lucky enough to be taken to one of the sites by CALM officer Sarah Barrett. The plants there are isolated and vulnerable. Hopefully I will be able to grow on my plant to a stage that I can propagate it, although the experts at King's Park have had real difficulty keeping this species alive in cultivation.

The featured species this issue is *Petrophile serruriae*, one of the hardier and more widespread of the western species. It is one of the few that has two distinct colour variations and is a fine spectacle when in flower.

There is also a smorgasbord of member's letters, but I would like to draw your attention to the unorthodox but ultimately extremely successful germination methods of Jan Howard. It's great to hear about the different techniques that people have developed.

All the best, and I hope you are in for some lovely winter rain ahead of a floriferous spring.

David Lightfoot ☺

Members' letters and emails

From Adrian Lamande Melbourne, Vic.
September 2005

[Adrian sent a couple of emails in reply to Dan K's from Newsletter 6 page 8. Dan had noted that his grafted *Isopogon latifolius* had grown much slower than ungrafted specimen of this taxon.]

Would it be possible to get a photo of your plant paying particular attention to the graft union and the habit of the plant? I graft many Australian plants in Melbourne and have a fantastic form of this one with flowers bigger than your fist (really and truly they are at least 6cm across in every direction.) I am interested in your comment about not growing as quickly as to me this sounds like a mild compatibility issue and would like to see the plant to assess the position of this particular graft.

Also from September 2005

Does anyone have any information about successful graft combinations? I do a bit of grafting as previously mentioned and may try some this year. Thanks.

If anyone has any info for Adrian, could they please forward it to me by email or regular mail and I will forward it on? It would be great info for study group members in general. I have heard of *Isopogon anethifolius* and *Isopogon dawsonii* being used as the rootstock for *Isopogon latifolius*. I have not heard of other species being grafted at this stage. Ed

November 2005

I have recently seen and acquired a form of this plant [*I. latifolius*] with flowers as big as your fist (at least). I have never seen a flower on this or any other *Isopogon* this large. Has any one else seen flowers this big on an *Isopogon*? I have a cutting grown plant off the large flowered parent and can't wait until

this flowers in my garden and ideas how long this will take? I presume (given my experience with *I. cuneatus*) about 1.5-2 years.

That is the usual inflorescence size for a good *I. latifolius*. The flowerheads can be up to 10cm in diameter and are the largest of the genus. Because of this and because of their terminal position they are sometimes grown for cut flowers. I would expect flowering after 1.5-2 years for a cutting from a plant that has already flowered, but am no expert. Good luck and let us all know how it goes. Ed.

The following is an email thread from the *Isopogon* and *Petrophile* yahoo groups site (http://groups.yahoo.com/group/Isopogon_s_Petrophiles)

From Jan Howard, Lue, NSW.
November 2005

Regarding *Isopogon* "Stuckey's Hybrid". Having 2 of these prolifically flowering plants I was curious to know what the results could be if I planted their seed. Would anybody be able to tell me the parents of this plant?
Regards Jan

From David Lightfoot

[The parents are] *I. cuneatus* and *I. buxifolius*. I'd be surprised if you get seed though. *Isopogons* rarely set seed at the best of times (perhaps one viable seed per couple of flower heads). On many occasions most of the flower head is chaff, just bracts and nonviable seeds. Let me know if any come up. I would be very interested
Cheers David

From Jan Howard

David, 8 October 2005 planting, one punnet each:

I. dawsonii - 2 flowerheads - 5 seedlings
(previous years - 2-3 heads - nothing)

I. dubius - 1 flowerhead - 7 seedlings

I. formosus - 1 flowerhead - 65!!!

Just for the fun of it & hoping it's not too late in the season I'll plant a couple of Stuckey's hybrid flowerheads.

On another note, my first *Petrophile* (*P. biloba*) seedlings have just emerged! So exciting! Have never seen a *Petrophile* at a nursery so decided I would have to grow them from seed.

Regards Jan

From David Lightfoot

Great work Jan,

Tell us how you plant your seeds? Do you just put the whole thing in the ground or break it up or sort the seeds or something else?

Let us all know how you go with the Stuckey's?

Cheers, David

From Jan Howard

David, I cut a few old seed heads off, no particular time of year, preferably those that are starting to open up.

I place them in a large envelope, seal it, and put them in a plastic box (containing mothballs), which I keep in the kitchen.

In spring, it could be up to one or two years later (I often forget about them), on opening the envelope, I find they have come apart. I put seed raising mix - 2 parts bush sand, 1 part sieved old, dry compost (grass clippings and kitchen waste) - in a punnet, cover with chaff (and seeds, hopefully), and cover with more mix. Keep punnet well watered until pricking out.

I won't be waiting so long with Stuckey's hybrid because the seed heads start coming apart not long after they finish flowering.

Regards, Jan

This is really amazing stuff from Jan. I'd really like to know the difference in germination rates for heads kept one year versus two, as freshness does seem to matter anecdotally. Thanks for the information. If anyone has managed to germinate seed from Stuckey's hybrid could they please write to me about it? Ed

From Paul Kennedy, Strathmerton, Vic.
November 2005.

Paul wrote to us in reply to the newsletter 7 article about I. dubius germinating in the cone, and the bag method of germination.

The comment on germination was most interesting. I find green freezer bags better [than bread bags] as they seem to "breathe" better and the chance of fungus forming is less likely. The bags should not be reused. I think all the *Proteaceae* would respond to this method with far less germination failures and much quicker germination time.

From Barbara Buchanan. Myrree, Vic
December 2005

Thanks for the NL. I'm sorry I don't have much growing news to contribute. I agree heartily with your suspicion that fresh seed is best for germination, but then how did all those English gardeners manage? I do have a big *I. dawsonii* and will check it for seed-lots of seed heads always but I'm not sure about fat viable seed. This is the other problem, there always seems to be so much "chaff".

I have had *Dryandra praemorsa* germinating in the cone on the bush but never succeeded in growing it on.

Back to the *I. dawsonii*, it was one of my earliest plantings so is now 15 years old. It always looks good in flower or not, but I do need to keep it pruned. It certainly grows in dry shade as my huge *Casuarina torulosa* is swallowing it up, but Alan is threatening to remove *Grev. robusta* which will expose the

other side of it. So much of my garden is now dry shade that I obviously need more "Petropogons", and I am sure this is one of the common garden needs, not as big as *I. dawsonei*, but small shady dry plants.

We have had a wonderful spring and have already had a few inches over our average 42" rainfall. However, the garden has suffered from mildew in the warm wet weather- you just can't win completely. Borers continue to plague a lot of my older plants, but overall I have been deriving immense pleasure from the garden. Flowering has never been as intense, which I put down to a combination of the rain and a scattering of K₂SO₄. My daughter had to put it out on the grapes on similar soil, so I begged a bit and have just scattered very lightly. It may just have been the rain but I feel there is more to it.

Happy Xmas and New Year.

I love Barbara's term "Petropogons" for these genera. I hope it takes off. I also hope the rain is continuing to fall through autumn, and that this spring's flowering is as good as the last. I am reminded though of Hanrahan lamenting "We'll all be rooned" no matter what the weather, in John O'Brien's "Said Hanrahan"- Ed.

From Phil Trickett, Canberra, ACT
January 2006

Hi David,

Happy New Year to you. I hope it's raining down your way. In Canberra, we have had 40mm this month so far (the garden really needed it after a very dry, hot December), and it's raining nicely today – good soaking stuff.

I have a question about an *Isopogon latifolius* that I gave my parents last year. They live at South West Rocks on the north coast of NSW and the plant is in deep sand. The plant grew vigorously throughout the year

and set about a dozen good buds. However, much to everyone's disappointment no flowers eventuated. The swollen buds just sat there until we cut them off at Xmas. Do you have any idea why the flowers didn't develop?

By the way do you know what stocks are traditionally used for grafted *Isopogons* – is it *I. anemonifolius* or *I. anethifolius*? I have played around with a couple on *Banksia integrifolia*, but those that take seem to be growing pretty slowly so far.

Regards, Phil

My reply from January, 2006.

Unfortunately no rain to speak of here in Melbourne and another 40 degree forecast for tomorrow yuck. Haven't lost all that much though, a few things in pots only.

*I'm not sure about the non-flowering. They do take a long time to develop in *I. latifolius*. I seem to remember they took about 8-9 months from being visible. It may have been that the conditions weren't right e.g. Not enough consistent rain/or too much. I think things have to be just right before they go into flower, as it is so energy expensive and the soil in the Stirlings is so poor that they cannot afford to waste the flowering in the wild. But I really don't know.*

*Re the grafting. Most people I have asked about this use *I. anethifolius* or *I. dawsonei* as the rootstock, even for *Petrophiles* (although I haven't seen a grafted *Petrophile* for sale anywhere) I don't know which is better. In terms of Canberra, both of those species do really well, so you could try either.*

*You know you gave me the fruiting cone of *P. shirleyae* a while back. I tried the paper towel germination method and had pretty good success. I now have about 6 seedlings up to 4-5cm high in the shade house and all bar one have done well. The germination rate was about 40%, which is good for *Petrophiles* in my experience so far. I'll let you know how they go. [Still hanging in there, in May 2006]*

All the best, David

From Jan and Julie Aamodt, Sevenhill, SA
January 2006

Dear David,

Julie and I have now been at Sevenhill (5 km south of Clare) in SA for 4 months. We were formerly in Turner, ACT. We relocated as retirees to a climate we hoped would be more conducive to growing natives (Canberra being too cold) and have bought 17 acres. We have removed the roses and conifers, which formerly frequented this property and replaced them exclusively with natives, including quite a few *Isopogons* and *Petrophiles*. We were surprised at the amount of clay over limestone here, which has forced us to buy in coarse sand and crushed quartz for planting. So far this seems successful as it provides good drainage with adequate moisture retention. We have mounded all plantings, and mulched. It is hotter here than we had anticipated and a number of the *Isopogons* have not responded with the enthusiasm we had hoped. A number of *I. formosus*, *dubius*, *cuneatus* and *latifolius* have decided to meet their maker sooner rather than later. Very disappointing.

I must shoulder most of the blame because in endeavouring to provide the maximum drainage, (there are a number of exiting stone walls which have been built and provide very deep drainage where they have been back filled) I have used these but they are in full sun. I am keeping the water up to them but it has been a prolonged hot spell. The source of most of our plants has been Geelong Propagation at Mount Duneed where John provides a wonderful assortment of natives, very reasonably priced (in the smallest pots imaginable) and Brenton Tucker from Taillem Bend. I buy the smallest pots and progressively pot them up until I feel they can face the new world. The plants, which I have had for 18 - 24 months, seem to be thriving here. The

larger pots, which I have recently bought, and planted out immediately, are not so happy.

One of our 'neighbours' is Ian Roberts from Blyth, who has the most extraordinary 40 acres of exotic (to SA) natives at Armagh. If you have not seen it, as Molly Meldrum would say "Do yourself a favour". This place has more of everything except *I* and *P* than I could believe. He has not had any luck with *I* and *P* as they require too much water in their early stages.

I mentioned to you a while back that my *P. longifolia* blessed me with 10 flowers. Here is a photo. It is easy to see my prowess is with a shovel, not a camera.



I have planted out some seeds from my *P. pulchella* and *P. longifolia* and now I shall wait for 2 months and hope for results.

Cheers

Thanks for your email. Great photo. Your P. longifolia is magnificent, and confirms my thoughts that it is one of the best Petrophiles. In my opinion it should be in every garden with suitable climate and soils

I agree that some of these plants need a bit of water over their first summer. The problem is getting the mix right, as too much water will kill them, and waiting for them to show signs of water stress is invariably too late. Maybe planting a "canary down the mine" plant near them, like a Prostanthera may give a signal that its getting a bit dry. They [Petrophiles] seem to be pretty tolerant past the first

year or so. Mind you having said that they are not found naturally in the very low rainfall areas. Good luck with the new place and thanks for your news.

Yours, David

From Tony Cavanagh, Ocean Grove, Vic
February 2006

Hello David,
Many thanks for N/L 7, lots of good information and pictures. I was especially interested in your article on *Isopogon dawsonii*. Like you, I think that it is a great plant, tough and reliable and flowers prolifically, and is much under rated. If my memory serves me correctly, it was one of the "old" plants from early SGAP days, which probably explains why it is no longer readily available - it has fallen out of favour. My main plant is more than 20 years old and about three metres by two. It is in a slightly raised bed on the south side of the house, which means that it doesn't see direct sunlight for most of the winter months. This doesn't stop it flowering prolifically in spring and the attached picture was taken in September.



I have now planted three or four other plants around the garden, generally in semi shade situations, which are not too dry. Even though *Isopogon dawsonii* is pretty tough, I wouldn't risk it in a very dry or hot dry position - it needs some moisture. Certainly with watering, it grows very quickly and I

will be interested to see how long my seedling plants take to flower.

All my plants have been grown from seed but in the easiest possible way. *Isopogon dawsonii* sheds seeds readily and I find dozens of seedlings in my gravel drive and even in nearby hanging baskets. I simply dig them up and pot them into 5 inch cups. The plants go into the garden about 6 months later. I have never had the need to grow them from cuttings, but if they are as easy as *Isopogon formosus*, then it shouldn't be a problem. Mindful of David's request for seed, I checked my plant today but I think that all seed has fallen so I will need to check earlier next year. I did notice however, that that there seem to be two different types of seed "cones". One is smooth and hard and when I cut it open with secateurs, there appears to be no seed of any sort. The second behaves like the cones I have seen on *Isopogon formosus* and begin to disintegrate a few months after flowering. These presumably are fertile and the seeds are mixed with the white, cotton wool-like material inside the head. All the heads I collected were nearly all broken down and I didn't find any seeds but will look more closely at them next year after flowering.

I've had a few requests for seed of I. dawsonii and my supply has run out so I'm looking forward to next years crop, Tony. (Thanks!) I have grown it from cuttings, which I found relatively easy but slow to root. My Dad, in the warmer climate in Newcastle, had much quicker rooting times from cuttings taken at the same time.

PETROPHILE SERRURIAE R.Br.

William Baxter¹ first collected *Petrophile serruriae* at King George Sound (near Albany) in 1829. Robert Brown² then described it botanically in 1830. It is a medium sized shrub growing 0.6-1.5m wide and 1-2m high. There are two colour forms: yellow, (the commonest) and mauve-pink. This



striking plant has been brought into cultivation only on a limited scale.

The specific name *serruriae* means like *Serruria*, a genus of the South African *Proteaceae*, that it is said to resemble in leaf and floral characteristics. *Serruria* is, in turn, named for J Serrurier, Professor of botany at Utrecht University in the early Eighteenth century. *P. serruriae* is thought to be synonymous with *P. axillaris* Meisn. and *P. glanduligera* Lindl., two names no longer recognised as distinct taxa.

P. serruriae has an interesting habit, with long often arching branches arising from a relatively short stem. This gives it a slender, graceful appearance. The flowers tend to occur towards the ends of the branches, giving the impression that they are weighing the branches down.

The branches are usually hairy but may

¹ William Baxter d 1836. Gardener and plant collector. Visited southern WA in 1823-25 & 1828-29.

² Robert Brown 1773-1858, the "Father of Australian Botany". See issue 1 page 4

become glabrous.

The leaves are a real feature and were described by D. Lewis of Bindoon WA³ as "like starched lace". They are 1.5-3.5cm long often intricately divided (bipinnate or even tripinnate) and can be crowded around the stem. They are terete, superiorly grooved and end in a pungent point. New foliage is soft and pinky red (see the front cover photo) but hardens as it ages and becomes a



P. serruriae in open woodland. The semi-shaded position leads to more open growth and less abundant flowers.

deep green.

The flowers can be yellow or pink to mauve (sometimes deep pink in bud) and are 12-16mm long and arranged in inflorescences of 3cm diameter. They may be axillary (but

³ *Australian Plants* 1970, Vol 5 page 360.

occurring towards the ends of the branches) or terminal. The flowers are conspicuous and make a truly spectacular display. They appear from July to December, with the pink form tending to flower later than the yellow. The pollen presenter is yellow ageing to orangey-red and is covered in short hairs.

The fruiting cones are about 12mm long, and spherical to ovoid in shape. They can be single or grouped and may sometimes have a short stalk.

Foreman in the *Flora of Australia* remarks that the species is “somewhat variable” and “in need of further study”. It may end up being split into a number of taxa.



Distribution map for *P. serruriae*

As can be seen from the distribution map this is a common species from just east of Geraldton down to Albany, and is found growing in a range of habitats. These include heath, shrubland and woodland, on well-drained sandy to gravelly soils, including laterite and limestone based.

This plant was cultivated in Britain in 1840 but is only really found in enthusiast's gardens today. It seems to tolerate a range of soil types and soil pH but requires excellent drainage. For a compact habit with maximum flowering, a full sun aspect is best, with judicious pruning from an early age. It will grow in a semi-shade position, and

appears to be at least moderately frost tolerant. It does not do well in humid summer-wet climates, and is very sensitive to *Phytophthora cinnamomi*, being used as an indicator species for its presence. On the other hand it does require some watering in extended dry periods. Rodger Elliot has observed that in country Victoria, where the plant was trialled for cut flowers, it self seeded prodigiously and so may have some weed potential in bushland areas.

Propagation is from seed (fresh seed is best, germinating in 25-60 days) or firm new growth cuttings. I have not seen this plant grafted, although this is more likely because no one has tried, rather than because of any difficulties.



A pink flowered form

Please let me know if you are growing this excellent garden species, and whether you have the yellow or pink form. I would love some cuttings from a pink flowered plant.

(Map reproduced from *Flora of Australia* Vol. 16 with permission of ABRS.)

GLOSSARY

Axillary- from the side of a branch, replacing a shoot

Bipinnate- a compound leaf where the initial division of the leaves is divided a further time.

Glabrous- without hairs, smooth

Inflorescence- a group of flowers arranged as a distinct entity

Laterite- a reddish clay like mixture of iron and aluminium oxides and hydroxides formed from the weathering of basalt.

Ovoid- elliptical in shape with the base broadest

Pungent- a stiff, sharp point

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

Tripinnate- compound leaves where the initial division is divided again and then divided a further time (compare with bipinnate above)

Villous- covered in long hairs

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