ISSN 1445-9493 NUMBER 14 JUNE 2009

Isopogons & Petrophiles

The Australian Native Plant Society's Isopogon & Petrophile Study Group Newsletter

Isopogon asper, Darling Scarp, WA August 2005.
(See page 3 for more information about this species.)

Contents

EDITORIAL

Hello and welcome to the 14th newsletter of the *Isopogon* and *Petrophile* study group. Well the year is almost half over and it has certainly flown by for me. It began with the dreadful hot dry summer and the devastating fires through Victoria. My condolences go to everyone who lost friends or family in those fires. I fear that the extreme weather of that summer will be repeated with increasing frequency as climate change accelerates. I wish that the governments of the world were moving to combat this crisis much faster than they seem to be doing.

In south eastern Australia we are still in the grip of the worst drought since European settlement. Melbourne had its 2nd dryest year start up to May on record. This after 13 straight years of below average rainfall. Our total rainfall in 2008 was around 450mm, compared with a mean of around 650mm.

I lost a number of plants during the summer including some well established shrubs. In general though, my *Isopogons* and *Petrophiles* have done really well. This finding seems to have been echoed by the members who have sent in reports since the last newsletter. In the wild, *Isopogons* and *Petrophiles* are not found in desert or very low rainfall areas, but they seem to be able to cope with temporary hot weather and low rainfall.

We have had a few nice showers in the beginning of June and the cooler weather has certainly perked up the plants in my garden. I have my fingers crossed for a lot more rain coming into spring.

I have buds on *Isopogon anemonifolius, fletcheri, formosus, mnoraifolius, sphaerocephalus, divergens*, and *dubius*. *Isopogon linearis* is flowering for the first time in my garden. This is a cutting grown plant, with the cuttings taken from a plant I grew from seed. The cuttings sat for over a year before finally growing roots and being put into the garden! This is a wonderful small plant from the sandplain areas north of Perth.

Isopogon linearis in the wild near Jurien, WA.

I also have buds on *Petrophile longifolia*, *media*, and *biloba*.

I have had some good success with other cuttings as well. I have had 4 *Petrophile nivea* cuttings survive since September 2007. They had all been just sitting in my green house doing nothing, but over the last few months one of them has finally shot off and two others have roots. I will not be putting them in the garden anytime soon and will be getting off a couple more cuttings when I can. My other exciting cuttings have been *Petrophile fastigiata* (after the garden parent plant was destroyed by the plumber), and *P. latericola,* a rare and endangered species. The "petropogons" seem to be very variable in their ability to be grown from cuttings but I would urge you all to have patience with them, and not throw them out too early.

I must give a huge thanks to all the people who have submitted letters and articles for this issue. It has made it a really good one. Thanks especially to Tony Cavanagh for his excellent photos and Margaret Pieroni for her drawings.

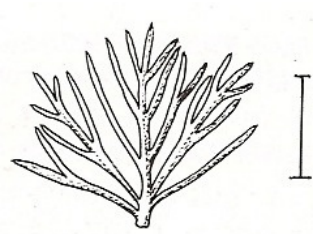
All the best and I hope spring is wonderful for you all.

David Lightfoot ☺

ISOPOGON ASPER R. BR.

Isopogon asper is a small shrub with a lignotuber that was first described by Robert Brown in 1830. It can grow up to 1.5m high and wide but is usually less than a metre. It is found from south of Perth, on the Darling Scarp, to the northern sand plain areas just north of Jurien Bay. It can be locally common and grows mainly in lateritic and granitic soils, amongst the open heath flora.

This species has an interesting growth habit with erect branches emerging from the base and rarely has smaller branchlets, apart from those bearing inflorescences (see below). These hairy branches are reddish in colour. It has rough slightly hairy to glabrous leaves that can be simple to pinnate in form. They are usually about 1-2.5 cm in length. "Asper" is the Latin word for rough and it is the leaves that give the plant its specific name.



Leaf diagram of *I. asper*. The scale shows 1 cm.

The inflorescences are terminal and born on small branchlets. They are often grouped up the branch and are most attractive. The flattened cones are deep red in colour, and up to 1.5-2 cm in diameter. From the cones, pale pink, glabrous flowers appear from June to November. They are about 15-18 mm long, and have bright yellow pollen presenters that age to orange. The flowering can be profuse and the mix of pink flowers with yellow to orange pollen presenters, up and down the branches gives an excellent rainbow like display.

This species would make an outstanding rockery or container specimen, but unfortunately is not well known in cultivation. It can be grown easily from cuttings of semi-firm growth. In addition, it can also be grown from fresh seed, which usually germinates in one to two months. When growing this plant in the garden excellent drainage is a must, and some watering may be required until it is established. It does seem to be frost hardy, but has been difficult to maintain in areas with high summer rainfall and/or humidity. *Isopogon asper* prefers a full sun position but will tolerate some shade. (In the wild it is often found growing up through neighbouring plants that are shading it). It responds very well to pruning with many new branches appearing from the lignotuber. Indeed plants with dead branches or older straggly specimens can be rejuvenated by being cut back hard.

I am very keen to try to get this plant into cultivation, as it is most attractive and its size is suited to the home garden. Please let me know if you are growing it successfully. I have had good success with both cuttings and seed in Melbourne, although I have not been able to establish the plant in the garden. This lack of success is probably due to the current drought and recent hot summers in southern Australia, with small plants dying during the extended dry. I have a number of cutting grown individuals that I intend to grow up in 15 cm pots to a relatively large size prior to planting out in early autumn.

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

MEMBERS' LETTERS AND EMAILS

From Paddy Lightfoot, New Lambton, NSW
October 2008

Dear David. On a recent trip to SW WA our group came across a population of *Petrophile acicularis*. "*Acicularis*" refers to the needle like terete leaves. The shrub is found growing near Albany on sandy soils. It is generally poorly known and rarely found in gardens. The flowers are cream, often clustered and can be profuse and very conspicuous. Perhaps we should try this one?

We were travelling from Albany to Cheynes Bay along Cheyne Road near Waychinicup NP, when we came across many specimens of this plant in a road cutting. The cutting was through pure sand. The cutting had left a two metre bank on each side of the gravel based road.

When examining the plants at the base of the cutting -i.e. at the level of the gravel - we discovered that the older plants had browned off dead leaves and branches. Below the flower heads were clumps of new green growth – almost like epicormic shoots seen on *Eucalypts* following fire. The smaller new plants seemed to be unaffected if they stood less than twenty five centimetres tall. However old plants at the top of the cutting growing on deep sand also seemed unaffected. I am interested to know what has happened in the cutting.

Petrophile acicularis showing the effects noted by Paddy.

Are the diseased plants occurring because of poorer drainage low down, as opposed to the bank top? Perhaps the nutrients from top layers of sand have been removed in the road making - as two metres of sand had been removed? Are the lower plants affected by leachate from the gravel, oil from vehicles etc? Are they affected by being in a moister environment promoting attack by a *Phytophthora* like organism?

Have members any experience with this phenomenon or any ideas on the cause?

A healthier looking, younger plant of *P. acicularis*

Keep up your good work with the Group,
Paddy Lightfoot.

I can't really shed any light on this mystery Paddy. If any members have any ideas, could you drop me an email please. P. acicularis is an attractive species that I do not know of in cultivation. It only gets to about 70cm high, has lovely lemon terminal flowerheads and would be great in a rockery. Ed.

From Tony Cavanagh, Ocean Grove, Vic
October 2008

Hello David,

Attached is some information which you may be able to use for the next newsletter on *Petrophile plumosa* which you identified for me and some pictures of it and a few others including *Isopogon ceratophyllus*. I have never grown this but would like to as it is a local plant - never found any for sale. We saw quite a number in the Little Desert area when we went on a trip from the *Eremophila* weekend but they are often difficult to photograph as the flower heads are usually hidden behind a tangle of leaves. I found one in cultivation in the

Isopogon ceratophyllus

gardens outside the shop in Pomonal and it showed its flowers clearly and was a nice healthy plant to boot.

Petrophile plumosa

This is a small plant to around 1 m from the gravely soils of the northern Darling district of WA. According to Rodger Elliot, it is regarded as vulnerable in its natural habitat and is very rare in cultivation. I bought my plant from Phillip Vaughan's nursery on the Bellarine Peninsula and I believe that it was grown from seed; it is not grafted. I must admit that I bought it because the leaves looked very much like another of my favourite plants, *Dryandra carlinoides*, being short and linear-spathulate. The whole plant is quite hairy but apparently, the name '*plumosa*' comes not from this hairiness but from the long hairs on the perianth of the flowers. My plant is about 3 years old and while it hasn't been a vigorous grower, it is quite healthy, multi-stemmed and had about 10 flowerheads this year in September-October. They are a dull yellow, almost cream, and form singly at the ends of stems where they are quite conspicuous. It is in well drained soil in near full sun and seems to be relatively tolerant of drought. I am not sure how to propagate it as it probably won't set seed and the hairy stems might make cuttings problematic but will try it either after it finishes flowering or in late summer.

Petrophile plumosa

All the best, Tony.

February 2009

Isopogon trilobus in the garden

This species was featured in N/L No 12 (page 3) and David made the comment that while it is one of his favourites, he has never managed to keep it going for more than a year or so. I guess that I must have been lucky with my only plant which must be more than 20 years old and came unscathed through the recent heatwave in late January when we reached 43, 46 and 43 degrees on three successive days. I cannot remember whether I bought it or grew it from seed but it is not grafted. It is in semi-shade, surrounded by other shrubs and receives overhead shading from a large *Banksia spinulosa* var. *collina*. The soil is some of the best on my block, moderately deep clay loam over clay, but is well drained and the plant has always been healthy and flowers prolifically in October and November, sometimes into December. It has not been watered for many years as I believe that it should be able to survive on its own roots. It is a shrub to about one metre by about 1.5 m spread, a bit straggly but with very interesting foliage and of course delightful flowers and conical nuts that give it its common name of Barrel coneflower. All I can say is David, hang in there, try it again and next time you may be lucky.

Isopogon trilobus

Isopogons and *Petrophiles* and the heatwave

While I don't have a large number of species of either genus, I was delighted to find that none had died during the heatwave, although it did put paid to several small and struggling *I. dawsonii* which had just not established themselves due to the drought. Nearly all my "Petropogons" are in partial shade and this undoubtedly helped them but I was astounded that my two plants of what I believe to be an *I. formosus* hybrid (possibly with *I. dubius*) which are on the north side of the house in near full sun survived with hardly a burnt leaf. By contrast, several of my broad leafed *Dryandras* and a couple with new growth showed relatively severe discolouration and burning of some leaves but again, none died. What is probably the most difficult thing

Isopogon formosus

to understand is that *I. formosus* is often considered to be one of the less drought tolerant of the *Isopogons* (as Neil Marriott pointed out in an earlier newsletter, it can sometimes be found in swamps in WA) yet it a fully exposed position it survived half a day of 46 degrees. Mighty tough plants!

Thanks Tony.
I do really love I. trilobus and have a number of young specimens in pots and in the garden at the the moment. I am hoping they can get established prior to next summer. I am glad to hear your Petropogons made it through the heatwave. Ed

From Paul Kennedy, Strathmerton Vic November 2008

This year again has been so drought ridden that I am surprised that our garden is still in reasonable shape. We had 200mm of rain over summer in big thunder storms and then nothing until 20mm in May and 40mm in July. After that it dried up and everywhere the ground is now bone dry. We have had to do some supplementary watering to keep the smaller plants alive. Already we have had a very warm to hot October and there is no sign of rain on the horizon.
The *Petrophiles* and *Isopogons* that we here this time last year have survived and I will list them again for your records.
P. biloba- Full sun, soil sandy loam. Flowered profusely in September.
P. megalostegia- Dappled shade, soil sandy loam, growing slowly.
P. media- Dappled shade, soil sandy loam, growing slowly. Flowered August.
P. seminuda- Dappled shade, soil sandy loam, growing slowly. Flowering now.
I. polycephalus- Full sun, soil sandy loam, plant now 1.3 m high, flowered in July.
P. ericifolia- Full sun, soil sandy loam, a low plant that flowered in October.
I. ceratophyllus- Full sun, soil sandy loam, growing very well. Flowered June.
I. dawsonii- Full sun, soil sandy loam, now 1.4 m high and flowered well.
I. sphaerocephalus- Dappled shade, soil sandy loam, growing very slowly.
P. serruriae- Planted in May, 2008. Soil loam in a protected position.
I. dubius- Morning sun, then dappled shade for remainder of day. Soil sandy loam. Now 0.8m high. Flowers satisfactorily.
I. cuneatus- Morning sun, thence dappled shade. Soil loam, flowers quite well in Spring.
I. formosus- Morning sun, thence dappled shade. Soil loam.
I. latifolius- Morning sun, thence dappled shade. Soil loam, flowers well.
P. trifida- Dappled shade all day, soil sandy loam, flowers well but during winter leaves die back and then come again with the warmer weather.

I went to the APS Vic. plant sale in Geelong (prior to another ASGAP 2009 meeting) and saw some unusual species of *Isopogons* and *Petrofiles* that Philip Vaughan had for sale. Unfortunately I had come down by public transport and did not have space to purchase any. Next year I will have to be better prepared.
Barbara and I spent six weeks in the Kimberleys, Pilbara, lower Shark Bay and lower central west of WA. In the latter area we came across a number of interesting plants some of which could have been *Petrophiles* in places such as Dragon Rocks nature reserve and would have liked to have spent more time keying them out, but as we had spent most of our time up north and we had to keep moving. They had received good rains and it would have been the right time to be there.
Our fourth son Matthew, has moved to Nana Glen near Coffs harbour. It is a wonderful place with mountain scenery, good soil and plenty of reliable rain. We went out into the bush and came across what we believed to be *Isopogon anemonifolius* and *Petrophile pulchella*. He is keen to establish a native garden, so he looks out for local native plants at weekend markets.
Cheers Paul.

February 14th 2009

Last Saturday was the worst day I have ever experienced. It was 46 degrees C here at 1.5m above ground level in the shade. The temperature at ground level in the open must have been more like 55 degrees C and the reflection off the ground was just burning. The northerly wind was blowing at 50 kph. Prior to this we had ten days over 40 degrees C which meant most plants had already been exposed to temperatures well above the norm.

All the established *Isopogons* and *Petrophiles* have survived and most were exposed to full sun except *latifolius* and *cuneatus* which had filtered sunlight in the afternoon. I had three new ones under shade cloth and they appear to be OK. *Isopogons axillaris*, *trilobus* and *scabriusculus*. My observations of how the native plants stood up are as follows. The local species seem to have suffered no burning effects. *Banksias* and *Hakeas* with new growth had the new growth burnt to such a degree that it wilted and died. Leaves on some plants were burnt for the first 500mm above ground level and above that stayed green. Most prostrate *Banksias* were severely burnt but I expect will recover. Prostrate *Grevilleas* are all dead. Soft leaf plants such as lilypillys have leaves badly burnt and blotched. All will drop off but stems are still green. Many plants had leaves burnt on the north side. The general analysis is that plants from the inland areas survived quite well, however those from coastal or nearby ranges suffered burn damage. Plants from north of Perth showed little damage, but those from around Albany are dead or badly burnt. Also trees and shrubs from forest and mountain areas were very much stressed out by the heat and much leaf burn occurred. ie. none of the Eucalypts from the high Blue mountains survived even though they had plenty of moisture. Plants from the northern part of Australia seemed to have coped quite well although many were in partial shade.

I hope your garden survived the heat.

Regards, Paul.

Thanks for the updates, Paul.

In Melbourne, we certainly didn't have that sustained number of days above 40s, but did have 3 in a row during the last week of Jan, then 46 on "Black Saturday". Many of my well established plants have been severely burnt and some have died. Many small plants that have been in for less than 2 years have died and the garden looks pretty desolate really. Ed

From Lloyd Carmen, Eden Hills, SA Dec 2008

Just a point of interest that you would probably be aware of, I managed to buy an *Isopogon* named "Candy Cones" a hybrid between *I. formosus* & *I. latifolius*. So here's hoping it will be a worthwhile one.

Hi Lloyd,

I had not heard of this hybrid until I gave a talk at one of the APS district groups in Melbourne. At the meeting someone brought in a flowering specimen of it to show me. The inflorescence is smaller then I. latifolius but similar in shape. The leaves though were divided and more I. formosus like. The new growth was rusty red. I took some cuttings which are still green but not actively growing yet, some 6 months later. It looks like a stunning plant. Please let me know how you go with it.

From Phil Trickett, Canberra ACT November 2008

Hi David,

Attached are some of the grafts. They are all looking great after winter and so far look to be very compatible with *I. anethifolius*. The two I have in the ground are *I. trilobus* and *I. tridens* (is this the correct species name?). Neither have yet flowered, though a number in pots have flowered despite only have been grafted for a few months. The grafts which have flowered are *I. formosus*, *I. adenanthoides*, and I. 'Stuckeys hybrid'.

Grafted *Isopogon sphaerocephalus*

One of the *I. divergens* and *I. sphaerocephalus* are about to flower.
I guess it is now a matter of time to see how they survive, but it's looking very promising. Isn't *I. baxteri* a cracker!
What do you make of these plants (photos below)? The *I. formosus* is just coming into flower, but does not have the terminal flowers typical of *I. formosus*.

Isopogon ?formosus.

I purchased the plant as *I formosus*, but it must be a different species.
The other was purchased as *I. anemonifolius* but the leaves are very different from the typical form. Any

Isopogon aff. *anemonifolius* with entire leaves.

idea where this comes from?
Regards
Phil

Thanks for the update Phil.
I have only seen I. tridens once. It is fairly localised in distribution near Eneabba/Badgingarra (far away from I. trilobus which is down on the south coast and the Stirlings). The flowers are browny/purple, as opposed to the yellow of I. trilobus. There used to be I. tripartitus which was the deeper lobed form of I. trilobus (much like yours). It has since been merged into I. trilobus.
I agree that I. baxteri is excellent. I have one in my garden on its own roots. Its been in about 2-3 years, but its been so dry down here that many things have not flowered. I saw it recently in the Stirlings and on the coast near Cheyne's beach which was interesting as I had been under the misapprehension that it was a Stirlings endemic.
I. formosus seems to be quite variable in leaf and flower. There is a species called I. heterophyllus from the south coast of WA that is very similar. In fact I don't know how to tell the difference. There also seems to be a grading into I. dubius which can be differentiated by the leaves. In cross section they are flat, whereas in I. formosus they are round (especially in the petiole).
With regard to your I. anemonifolius with the entire leaves (above), I have never seen or heard of one like this. I suspect it is not I. anemonifolius or is a hybrid, maybe with a western species???? It certainly has I. anemonifolius like flowers though (and different from all the yellow flowered western species I have seen).
Please keep us informed of your grafts' progress. All my attempts at grafting have been universal failures and so I am very envious. I have just tried a graft of Pimelea preisii on Pimelea ferruginea. It has survived a week. I have my fingers crossed. All the best Ed.

April 2009

Just an update on the isopogon grafts. Nearly all are continuing to thrive, including *I. trilobus*, *I. tridens*, *I. cuneatus* (all over 1 year old), *I. divergens*, *I. adenanthoides*, *I. sphaerocephalus* and *I.* 'Stuckeys hybrid' (the last four species around 9 months old). A couple of recent additions which are looking promising are *I. asper* and *I. attenuatus*. All of these are off 1-2 grafts per species so the high success rate is very encouraging. All are grafted onto *I. anethifolius* using the whip graft. The failures at this stage are three *I. baxteri* (I am currently trialling more of this species), and one *I. formosus*. I intend to trial a range of *Petrophiles* over the next year, so I will keep you informed on progress.

I am so envious of your grafting skills Phil. The Pimelea graft I mentioned above died soon afterwards. I have subsequently tried a Qualup bell (Pimelea physodes) on P. ferruginea which is just hanging in there. I would love to learn to graft properly, in order to grow some of the touchier species, not to mention save on the high cost of commercially purchased grafts. Good luck Ed

From Margaret Pieroni, Denmark, WA. December 2008

When I first saw the plants at Crapella Road, (north of Kojunup, WA) that look like *P. longifolia* but I thought were *filifolia*, I noticed that they were very neat, mounded shrubs and wondered whether they might have the same habit of growth as *Dryandra nivea*, *D. subpinnatifida* var. *imberbis* and a couple of others. So far I've only noticed these few *Dryandras* that are like this. The first flower is central on the stem, then branches grow from around it and each branch has a flower on the top and so it goes on developing into a mound. Plants with this habit do not have a lignotuber. I can readily identify *P. longifolia* var. *prostrata* and I assumed that it would have a lignotuber like the one I thought was var. *longifolia* from near Mt Barker. This was a straggly spreading plant unlike the neat domed shaped Crapella Rd one.

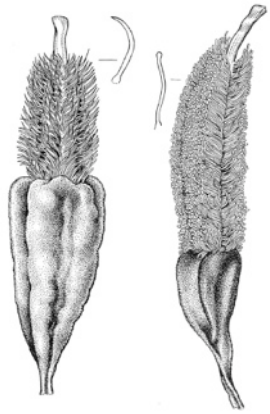
The key to *Petrophile* in *Flora of Australia* doesn't mention presence or absence of lignotubers, so I wondered whether this could be an identifying character as in *Dryandras*?

The mounded *Petrophile* growth habit. Drawing by Margaret Pieroni

My plant of *P. longifolia*, purchased from Morande Nursery (in Albany) definitely has this habit. From reading the key it seems that you'd have to have both *P. longifolia* and *P. filifolia* to compare to be sure of the identification but if the habit, i.e. lignotuber or not, separates them it would solve the problem. Can you help?

Hi Margaret, I must say that I cannot answer the lignotuber question. You are right that the Flora does not mention lignotubers in the key nor in the description of P. longifolia. (P. filifolia was not a recognised taxon when volume 16 of the Flora was published.) In their description of P. filifolia, published in Nuytsia, Barbara Rye and Mike Hislop give the following paragraph on distinguishing the two taxa.

"[P. filifolia] tends to flower later in the year than P. longifolia and differs in having longer hairs on the pollen presenter. The basal hairs of its brush are generally closely antrorse whereas the remaining hairs are more spreading; this makes the pollen presenter appear to be somewhat constricted immediately above the expanded base. In contrast in P. longifolia there is no apparent constriction in the brush because all of the hairs are patent or widely antrorse. Brush hairs in P. filifolia are all acute or very occasionally the lowest hairs are obtuse, whereas those of P. longifolia are all clubbed or very occasionally the upper hairs are obtuse rather than clubbed. Apart from these pollen presenter differences, P. filifolia also has generally narrower cone scales and smaller nuts than P. longifolia."



Pollen presenters of *P. filifolia* (left) and *P. longifolia* (right) reproduced from the Rye and Hislop article in *Nuytsia*

I think having the two together to compare would make it easier to distinguish them. If anyone can better answer Margaret's question, please let me know. Ed

From Marina Tyndale-Biscoe, Braidwood, NSW. February 2009

Hi David, Flowering of *Isopogons* this spring on our farm was not particularly good, nothing like last year. But then we had half the rainfall of the previous year, so I don't think it was the heat that stopped them; it was the drought. *I. anemonifolius* in the bush was good, but also less than the previous season. I collected a whole lot of seed last summer (Feb-April 2008) and have germinated them this spring, have 200 *I. anethifolius* and about 80 *I. formosus* growing well in my greenhouse. They are for a nursery in Canberra. Seed from *I. cuneatus* x *buxifolius* have not germinated; are they infertile? Neither *I. prostratus* nor *I. fletcheri* in my garden flowered this season. Very frustrating. However, the heat does not seem to worry the plants, they look very healthy. Interestingly, I grow waratahs as well, and must have had thousands of buds on them in the plantation, but had NO flowers. Effect of drought again, I think.

Kind regards, Marina.

Hi Marina, Glad to hear that your plants are coping with the heat. I have also noted that some of my plants have aborted their flowers at the bud stage when they haven't had follow up winter rain. Hopefully this year will be better. Ed

Isopogons and *Petrophiles* at Denmark, WA

Margaret Pieroni, October 2008

I've lost some and I've gained some, since my last report.

The original *Petrophile filifolia* which I bought from a nursery as *P. longifolia*, died last summer, before flowering. I have planted a new one which has its first flower head opening now, right on the top, in the centre of the plant which is still only 15cm tall. The reason that I think it is *P. filifolia* rather than *P. longifolia* subsp. *longifolia* is because it is such a neat dome shape. The *P. longifolia* subsp. *longifolia* that I have seen in the wild is a sprawling, straggly plant and subsp. *prostrata* of course, has flowers at ground level.

When my magnificent *Isopogon cuneatus* started flowering in summer – far too early, on long, almost leafless stems, I started to worry. My fears were confirmed in August when, despite extra water I'd given it in summer, it died.

I also lost the *Isopogon* aff. *formosus*, 'Bluff Creek' which flowered well last year, and, more recently, *I. formosus* which was in bud for the first time.

We had a very unusual summer, for Denmark. Practically the only rain we had was a few drizzly showers and it was unusually humid. The local dam almost dried up and water had to be carted from Albany and Mt. Barker. Perth had more rain and sooner, in autumn. I lost several other plants at this time.

There is also *Phytophthora* on the property so I have sprayed the 'introduced' plants, mostly *Proteaceae*, with Phosphite as a precaution.

Isopogon buxifolius near Denmark

Last year in July, I saw *Isopogon buxifolius* growing east of Denmark. It is a very attractive shrub with pink flowers. Earlier, I had seen plants for sale in an Albany nursery. They were not flowering and because I had only seen this species flowering in and around the Stirling Ranges, where the flowers are almost white, fading to grey, (var. *spathulata*), I didn't buy the plant. They haven't had it in the nursery since then. Seeds collected from the Denmark plants (var. *buxifolius*) germinated well, last year but I lost every seedling. It might have been because of the salt in the water brought in during our drought because the Shire nursery lost many plants, except for coastal ones, for this reason. Two seedlings have appeared recently, in the seed tray which look very much like *I. buxifolius*. I am watering them with rainwater and hoping for the best. Var. *buxifolius* occurs from Collie to near Denmark and Albany. I may never know which var. they had in the nursery.

Petrophile squamata is flowering again. It is growing well but slowly.

Last summer, the red new leaves on my last remaining *Petrophile helicophylla* were stunning – until they died. I thought that was the end of the plant. Fortunately, I hadn't got around to pulling it out and recently I've discovered that it is still alive – just hanging on and not flowering this year. It has set a lot of seed.

Recent acquisitions are: *Isopogon baxteri*, which hasn't flowered yet and Stuckey's Hybrid, *I. cuneatus* X *buxifolius*. It is flowering beautifully just now. The pale purple-pink flowers and orange-red stems are an unusual colour combination.
I. cuneatus, I. axillaris and Stuckey's Hybrid are very rewarding plants that flower for months, giving me plenty of time to paint them.

I found three seeds on the local *Isopogon sphaerocephalus* and sowed them last month. They haven't germinated yet but a *Hakea amplexicaulis,* also local, sown in March, has just germinated. So you never know…Sometimes my plants take a long time to be born and some take a long time to die!

Margaret Pieroni 3/10/08

Glossary

Antrorse- directed upwards or forwards

Acute- having a sharp end

Epicormic- growing from a previously dormant bud on the trunk or a limb of a tree.

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. Ironstone.

Lignotuber- a swelling at the base of the stem, often underground, that contains dormant buds and energy stores. If the top of the plant is destroyed, it can regrow from the lignotuber.

Linear- edges parallel and length at least ten times width

Lobe- a leaf segment, usually rounded, that is not divided all the way to the midrib.

Obtuse- not sharp or pointed. A leaf that has a rounded or blunt tip

Perianth- a non-fertile part of the flower consisting of petals and sepals

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

Pungent- a stiff, sharp point

Sepal- each of the parts of the calyx of a flower, enclosing the petals and typically green and leaflike

Simple (leaves)- entire without teeth or lobes

Spathulate- broad at the apex and tapering at the base. Shaped like a spatula.

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.

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