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# ISOPOGONS & PETROPHILES

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

ISSN 1445-9493

Number 1

November 2001

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*Petrophile teretifolia*. Fitzgerald River National Park. Southern WA. October 2000  
(See page 5 for more details about this species)

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# Editorial

Welcome to the first newsletter of the Isopogon and Petrophile Study Group. My interest in these genera began when I was at School and my family went on camping holidays to National Parks all around NSW. At Kanangra Walls there were hectares of massed *Isopogon anethifolius* (spectacularly in flower), in the Blue Mountains' forests *Isopogon anemonifolius*, *Petrophile pulchella*, and *Petrophile pedunculata*, whilst around the Woronora Plateau was *Petrophile sessilis*. When I first joined the then SGAP, I tried unsuccessfully to grow some of them from cuttings, after a trip down to Jervis Bay, and my girlfriend (and now wife) Suse, showed great patience and tolerance when we spent the best part of a day scrambling around the base of Govett's Leap in the Blue Mountains looking for *Isopogon fletcheri* in the wild (alas in vain). My interest was sealed on my honeymoon when Suse and I found a field of *Isopogon divergens* in full and glorious colour, as well as pixie mops (*Petrophile linearis*) just north of Perth.

Growing up in NSW I thought that every *Isopogon* was yellow and every *Petrophile* cream but as my interest grew I naturally turned to the South West of the continent where their greatest diversity is to be found and discovered the form and colour of the Western species. Like many Sydneysiders I enthusiastically propagated and purchased these Western species only to see them succumb to summer humidity (but I did manage an inflorescence or two and a couple of years of life from some.) Now living in Melbourne I have more success, but alas pay a price with only a single species in the surrounding bushland. (As good an excuse to travel as I have heard however!)

I hope that this study group, by its activities and through these pages can help to increase the knowledge base of these two fascinating genera. Perhaps in the future we may have greater success with desirable species in a wider range of climates and soils.

## *Aim of the Study Group*

The aim of the Isopogon and Petrophile Study Group is to research and exchange information on

such topics as-

Descriptions of Species (including photos/slides database) as well as characterising any newly described species

Propagation techniques, including germination, cuttings and grafting, and cultivation requirements

Selection of superior forms and hybrids for horticulture and cut flower potential

The Study Group will have a seed bank available for deposit and withdrawal by members, as well as facilitate cutting material exchange. (See page 6.)

A Study Group Garden will be established where all taxa will be grown.

I also hope that field trips and outings will be part of the Study Group's activities, especially if there are a number of members who live close to each other.

When enough information is available I would like to see the study group write a publication in the style of *The Grevillea Book* and *The Banksia Book*.

## *The Newsletter*

This newsletter will be the primary method for exchanging knowledge. Each issue will include at least one species profile with colour photos and/or drawn illustrations. There will be a glossary of botanical terms used as well as some more general horticultural/botanical articles. Contributions from any of the members will be gratefully received. These may include (but are not limited to) reports or research, articles, letters about what you are doing, commentaries from recent trips you have made including plant localities, book/scientific journal article reviews etc.

## *Database*

You will have received a questionnaire when you joined which lists all the species currently recognised. I have made it double sided to conserve paper. Please take the time to fill it in

*Continued on page 3*

and return it to me. I want to keep a record of which species are being grown, where and under what conditions, as well as life expectancy. I also want to update these data yearly. Please don't forget to indicate if you have photos or slides of taxa even if you are not growing them.

Finally I must say a HUGE thank you to Margaret Pieroni who has drawn the magnificent *I. Cuneatus*, which is being used on the Study Group letterhead. She is the leader of the Dryandra Study Group and one of our members as well. Margaret's artistic talents will be well known to many of you. If you get a chance to see any of her work jump at it. Look out for the soon to be published *Verticordia* tome where she has illustrated every taxa.

Well that's enough editorialising. If you have any other ideas for the study group please let me know. It's there for the members to get as much as possible out of it. Once again welcome to the study group and good luck with your growing. ☺

## ISOPOGON R.B.R. EX KNIGHT

The name of the genus derives from the Greek *isos*- equal and *pogon*- a beard. This is thought to refer to the hairs surrounding the fruit (see page 4)

It is an endemic genus. Some species (e.g. *I. buxifolius*) seem to be closely related to South African *Proteaceae* and may be revised in the future after DNA work has been completed. There are 35 currently recognised species of *Isopogon* with 27 of these found in the South West of the country. The Eastern varieties span the coast from Southern Queensland into South Australia and the Eastern Bass Strait Islands. They don't make it to the Tasmanian "mainland".

*Isopogons* are mainly small to medium sized shrubs with a number being prostrate or near so.

They are characterised by semi globular or ovoid inflorescences, packed with small flowers, which range in colour from cream to yellow in the East, with pink, and mauve added in the West. The

flower heads are usually terminal and showy but in some species are axillary. Thus many have potential as cut flower varieties. The shape has led to the common names of drumsticks and coneflowers.

The foliage is extremely variable throughout the genus ranging from simple narrow to ovate, through to deeply and intricately divided. The new growth is often red and contributes to the horticultural desirability of some taxa.

The fruiting cone is held for some time before breaking up with loss of the external bracts. It is the loss of these scales and the disintegration of the fruiting cone that distinguishes *Isopogons* from *Petrophiles* (where the scales are retained)

In general *Isopogons* grow close to the coast and when they do appear inland they are not found in arid areas. They are found in heath and dry sclerophyll woodlands, generally on very well drained nutrient poor, sandy soil.

*Isopogon* have been cultivated since 1791 but are still relatively rare in today's gardens. They can be grown from seed, which is said to germinate without treatment (but you need to find the seed first –see page 4. One of the groups early projects should be to look at germination rates with various treatments amongst different species). Most species can also be grown from cuttings using regular techniques with the warning that the hairy leaved species should not be misted too much for fear of fungal disease. Grafting work is only just being explored and hopefully some of the grafters in the group will let us know of their results. I have not seen commercially available grafted plants. The Eastern species appear to be the hardiest, especially where there is any humidity. The Western species are very susceptible to root rot fungal attack from *Phytophthora cinnamomi* (more on this in upcoming issues). In virtually all cases excellent drainage and full to partial sun are a must. Most are relatively frost resistant but will be damaged by heavy frost.

An acid pH and an underlying layer of limestone has been said to be advantageous (Again the study group should explore this), and although they do not require fertilizing their response to it is not well documented. (They are susceptible to phosphorous toxicity like most *Proteaceae*.)

As can be seen there is a lot of generalisation and supposition when it comes to the cultivation of *Isopogons*. Lets get stuck into really finding out how best to grow this wonderful group of plants!!

## SOME 19TH CENTURY SKULDUGGERY

The genus *Isopogon* is suffixed R.Br. ex Knight and the type species of the genus is *I. anemonifolius* (Salisb.) Knight. These suffixes point to a scandalous and rather controversial episode in the history of Botany. The R.Br., of course, refers to Robert Brown (1773-1858) the botanist on Matthew Flinders' circumnavigation of the continent. The Knight refers to Joseph Knight (1777-1855), a gardener and horticulturist who was one of the first Europeans to grow Proteaceae. He was the gardener of George Hibbert, an MP of the time whose gardens were larger than Kew Gardens! "Salisb." refers to Richard Anthony Salisbury (1761-1829), a botanist and correspondent of Joseph Banks, who by all accounts, had a very difficult personality. After one of his public feuds the big players in Botany at the time (including Banks and Brown) let it be known that as far as possible Salisbury's work and names were to be ignored. Indeed, a number of genera he named were later named something else.

In January 1809 Robert Brown, at the meeting of the Linnaean Society of London, read his landmark paper "On the Proteaceae of Jussieu", in which he detailed his classification of the family and many new species were described. This meeting was attended by Salisbury. Brown was delayed in actually publishing his work until 1810. However, later in 1809 Salisbury published a work entitled "On the cultivation of the plants belonging to the natural order of proteae". He used his friend Knight's name as the author but the work was his. In the book he used a number of names and descriptions that Brown had used in his talk and Salisbury had "borrowed". Salisbury was accused of plagiarism and ostracised even further. A large portion of Knight/Salisbury's work was thus ignored by the Botanical establishment in favour of Brown's work - to be later reinstated by the rules of the International Code of Botanical Nomenclature which give the earliest published name priority, and resulted in a large number of name changes amongst the Proteaceae. It is clear that Salisbury was not as guilty as was made out. His work was long and detailed and was no

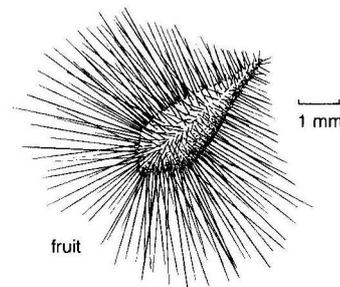
doubt ready for publication anyway, but he did add some of Brown's work to his own with less than adequate acknowledgement. In the end he was forced to retire from Botany, and he died of paralysis (? a stroke) in 1829.

So how does this relate to those suffixes. Well Knight first named *Isopogon* from one of Robert Brown's manuscripts, thus the "ex". Salisbury was the first to publish (in 1796) the description of *I. anemonifolius* but incorrectly called it a protea (*Protea anemonifolia*). Knight's generic name is the correct one and so Salisbury is bracketed before Knight. The only question remaining is; was that Knight himself or Salisbury using Knight's name?

## ISOPOGON SEED

One thing I have noticed when collecting seed from *Isopogons* and *Petrophiles* is that, in general, the seed set in *Petrophile* inflorescences is far greater than that in *Isopogons*. (I have yet to determine the rate of viable seed though.)

More often than not each *Isopogon* head contains only a few, if any, seed. The mature head will break apart in your hand revealing its components. The scales are the remnants of the protective outer layer. Within these will be lots of non-viable fruit, which is characteristically a hairy dot. The seed is contained in a drop shaped fruit of 1-3mm again surrounded by hair. It will have left an indentation on the axis of the fruiting head. There may only be a few but once you have found one, then sorting the seed from the chaff becomes easy.



The fruit of *I. anemonifolius* ©M. Fagg from *Banksias, Waratahs and Grevilleas* (with permission)

*PETROPHILE TERETIFOLIA* R. BR.  
(SYN. *PETROPHILE CRASSIFOLIA*  
R. BR.)

Robert Brown (1773-1858) first described this great little plant in 1810. He first named it a *Protea* and collected the type specimen from Lucky Bay (East of Esperance), in Jan 1802, whilst on Matthew Flinders' expedition.

The specific name refers to the shape of the foliage teres- terete and folium- a leaf

It is an erect or spreading shrub with quite variable size. It ranges from 60cm to 2m in both height and width.

Its branches and leaves are glabrous meaning it should be less susceptible to mildews and other stem/foliage fungi. The leaves are simple and up to 22cm in length. They tend to curve inwards and upwards and most often end in a sharp tip (although it may be blunt).

The inflorescence is usually terminal, but may be axillary at times, and is usually spherical to ovoid in shape. It is up to 4 cm across. The flowers themselves are about 2.5cm long, hairy and are grey-mauve in colour, fading to pale. In bud they stand straight but then curve outwards as they mature. The pollen presenter is yellow, whilst the perianth is yellow to red-orange. The flowering time is from September to January.



Distribution - It is common from near the Stirling Ranges to Israelite Bay along the Southern coast of WA. It is usually close to the Coast and is

found growing in heath, in soils of deep sand often with laterite and granite.



Cultivation- the plant is said to have been in cultivation in the UK as early as 1824! I have never seen it in cultivation in private or botanic gardens. It probably requires full sun, and deep, exceptionally well drained, acidic soil. Seed is said to germinate in 26-80 days and cuttings are slow to root.

I think this plant has great horticultural merit. It is fabulous in the wild and would be marvellous in a rockery. The old seed cones are kept for some time and can detract from the plant. I favour removing them and would recommend regular tip pruning to really bring out its best.

Could any members who are growing *P. teretifolia* please let me know their secrets? Any seed for the bank would also be excellent.



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

## GLOSSARY

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

Endemic- distribution is limited to a defined area. e.g. Australia only

Genus- a group of species linked by similarities. The level of classification below family

Glabrous- without hairs, smooth

Inflorescence- a group of flowers arranged as a distinct entity

Ovate- elliptical with the bottom half wider than the top

Perianth- A Non-fertile part of the flower consisting of petals and sepals.

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- cylindrical and tapering

## 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. These are from my own collection and are very limited at present, but I will be purchasing a greater variety once the group is more financial. 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.

<i>Isopogon anethifolius</i>	<i>Petrophile biloba</i>
<i>Isopogon buxifolius</i>	<i>Petrophile canescens</i>
<i>Isopogon ceratophyllus</i>	<i>Petrophile diversifolia</i>
<i>Isopogon cuneatus</i>	<i>Petrophile longifolia</i>
<i>Isopogon dawsonii</i>	<i>Petrophile pedunculata</i>
	<i>Petrophile pulchella</i>
	<i>Petrophile rigida</i>
	<i>Petrophile serruriae</i> yellow & pink

## References

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

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