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Association of Societies for Growing Australian Plants

BRACHYCHITON & ALLIED GENERA (STERCULIACEAE) STUDY GROUP

Newsletter No. 2

July 1986

INTRODUCTION

This is our second newsletter & I am pleased with the response to the first. I had a few omissions from the first & I will correct that here. I must thank those people or groups who have assisted this study group by the way of donations or assistance.

Firstly there is the financial assistance. The Pine Rivers SE QLD, The Foothills Vic, SGAP groups, the Victorian SGAP body, the ACT SGAP group have all paid subscription fees to the study group. It was these donations that paid for the postage of the last, & this, newsletter. I am very grateful to these groups & we, as a group, have an obligation to provide material & information to return their favors.

Secondly we had material assistance. John Ross, who had the Anana Rainforest Nursery in Sydney, but now has a rainforest nursery in SE QLD, near Springwood or MT Tamborine I believe, donated Sterculia quadrifida, Brachychiton bidwillii, 6 B. acerifolius (for rootstocks), Commersonia fraseri, C. bartramia, Heritiera actinophylla. Most of these plants are not available from normal sources & these plants were very appreciated. I will take the opportunity here to recommend John's nursery to everyone. He keeps a very wide range of rainforest plants & even though you won't get the "take away" prices I got, he is one of the cheapest nurseries around. Paddy Lightfoot, my next door neighbour, also gave us Thomasia foliosa & T. floribunda. If anyone gets cuttings off me of these species they are off Paddy's quite large plants. Paddy has a few other rare Thomasias I have got cuttings off.

We have also had assistance of the physical kind. In my quest for material I have asked a number of people for cuttings or seed. Everyone has helped. Added to this are some who realised we needed material & didn't wait to be asked. I am very grateful to these people, namely: Mrs Curtis (Canungra), Mrs Croxford (Albany), Harry Franz (Goomeri), Harold Grant (Dubbo), Norman McAllister (Finley), Walter Pyle (Wahgunyah), I thank these people on behalf of the group.

Now that the thanks are over, we can see that the study group has not just formed on its own. We have a very good collection of plants that we will display at shows, & we will distribute propagating material to the members. It all depends on us. We are the ones to make this study group effective. I have had a numbers of offers of help. Every one should be prepared to gather material & information whenever

possible & send it in. THINK STERCULIACEAE!

### SEED DISPERSAL OF BRACHYCHITONS

How the seed of Brachychitons is dispersed has puzzled me for many years. Birds have been suggested but there has been no further details.

I have always doubted bird dispersal because:

1. If the bird voided the seed, what benefit did it gain & therefore why did it eat the seed in the first place?
2. The seed is relatively soft & does not seem capable of passing through a birds digestive tract without damage.

I had no clues until recently I was in a bookshop & I read that an early explorer recorded that aborigines in central Quustralia would go to waterholes where crows congregated & they would collect the kurrajong seeds from there droppings. From the seeds they made flour. Unfortunately I couldn't afford to buy the book, but I didn't need it anymore as I had the information I was after.

Since then I have examined B. populneus & B. acerifolius seeds closely & have realised the yellow portion is a soft floury part that the birds no doubt use. The centre consists of a black kernel that the birds would excrete. The kernel has a relatively hard cover. The yellow coat is very soft when wet.

This therefore explains many aspects of the features of Brachychiton seed. These are:

1. The new seed is yellow because the birds must find it.
2. The used seed is black because it must be left to grow.
3. The seed is protected in the pod by bristles. This would deter mammals with soft noses. Birds would have no such problems.
4. The seed is not shed but may be held in the pods for long periods.

The scattered occurrence of Brachychitons indicates an efficient distribution means. Brachychitons are normally very scattered & do not grow in thickets like wattles.

The use of crows is interesting. Not many other birds would be able to extract seed from Brachychiton pods. Some, such as emus & pigeons, could pick seed up off the ground. However crows seem better suited in this case. Crows are not specialised seed eaters, therefore their gut is not as efficient at breaking down seeds. Therefore the seeds are more likely to pass through undamaged.

I have seen Currawongs extracting "things" from Brachychiton pods. I had assumed it was spiders, insects or caterpillars that utilise the

protection or food source. In reflection it was almost certainly the seeds it was gathering. The Currawong had to reach right into the pods & use a firm pull to extract the food.

I am now recording the method of seed dispersal for the *Brachychiton*s as it has not been described in recent literature. It is not a new realisation, just old information passed on.

GENUS FOR DISCUSSION: LASIOPETALUM

*Lasiopetalum* is a genus containing about 35 species distributed throughout Australia. *Lasiopetalum*s are shrubs with smooth leathery upper leaves & hairs beneath, as well as along the stems. The flowers are small, in a variety of colours. The petals, if present, are very small. There are 5 stamens & sepals. The fruit contains 3 seeds in a capsule. These seeds are readily germinated. Propagation can also be achieved by cuttings in Autumn or Spring. Most species flower from July to October. They prefer a warm climate & well drained soil. Seed is on the bushes in November & December.

*Lasio. discolor* (Coast Velvet Bush).

A small shrub which grows to 1m. Leaves ovate oblong, 2 -7 cm long, cordate, becoming glabrous above. Flowers sessile in heads which droop on short recurved peduncles. Calyx whitish, about 5mm long, softly tomentose outside, glabrous inside. Bracteoles pink-lilac surrounding the head of flowers. Flowers Sept to Jan.

Habitat- Shallow remnant soils over widespread limestone, calcareous soils. Near the sea.

Distribution- Yorke Peninsula, Kangaroo Is, SE Sth Aust, Eyre Peninsula, Tasmania, W Aust.

*Lasio. behrii* (Pink Velvet Bush).

This is a much branched shrub which grows to 1.5m high by a similar width. The leaves are up to 6 cm long, oblong & greyish green. Small cream to pink flowers are produced in loose clusters during August to December.

Habitat- Occurs in the mallee scrubs, especially the so-called "deserts" of SE Sth Aust. In cultivation it will grow in a hot position but does better if given some shade. Tolerant of frosts, limestone & very dry conditions.

Distribution- Concentrated in SE Sth Aust & W. Vic.

*Lasio. macrophyllum* (syn. *L. dasyphyllum*, Shrubby Velvet Bush).

There are two forms, a bush to 2 metres, & a prostrate form. The bushy form grows to form a sparse bush that merges into surrounding vegetation. The leaves are ovate-lanceolate, 5-10cm long, rusty in color

underneath, glabrous & green above. The flowers are pink inside, brown outside. There is a selected form, mentioned in the last newsletter that is much deeper pink inside.

Cultivation- Both forms prefer partial or fairly dense shade. They will grow in either clay or sandy soil. Summer watering is advantageous. Growth may be slow, especially of the prostrate form.

Distribution- From Newcastle in the north to East of Melbourne. There is an isolated colony in the Grampians. Also Tasmania.

Lasio. tepperi .

A medium shrub, leaves lanceolate, 2-6 cm long, 5-10mm broad, hoary beneath, the older ones hairless. The pink flowers are crowded with the calyx covered with hairs on both sides.

In cultivation it is suitable as a pot plant & for rockeries. This species will grow in heavy or clay soils.

Distribution- Sth Aust in the hills near Yorke Balley, Yorke Peninsula

Lasio. schulzenii (Drooping Velvet Bush).

A small shrub, growing to about 1m. The leaves are stiff mid green, broadly ovate, deeply cordate at the base, 3-7 cm long, 2-5 cm broad, paler beneath. The flowers are creamy white in dense racemes. Flowering is from Sept to Nov.

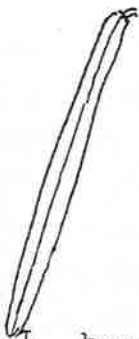
Cultivation- This species will tolerate very dry conditions, 4-6 months of summer without watering. Moderately lime tolerant.

Distribution- Kangaroo Is, Yorke & Eyre Peninsulas, SE Sth Aust & SW Vic. Coastal cliffs.



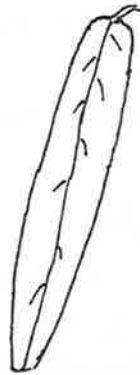
L. macrophyllum

leaves dull green above, paler below, with brown hairs.



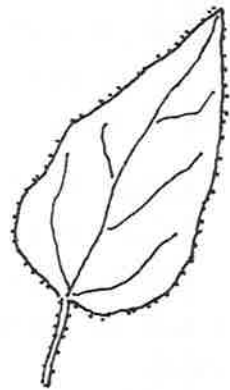
L. baueri

Leaves greyish green above, glabrous, pale beneath.



L. behrii

Green above, usually glabrous, paler beneath, hairy.



L. floribundum

Leaves green, paler below. Well covered with rusty hairs.

All drawings actual size.

Lasio. rufum (Rust Plant or Red Velvet Plant)

A ground cover plant, spreading 1m or more. The leaves are long & thin, dark green, rusty below, tending pendulous. The small flowers, greenish-yellow inside & covered with rusty hairs outside, add to the general rusty appearance of the plant. It has a long flowering period through Spring & Summer.

Distribution- The sandy coast of NSW.

Lasio. ferrugineum (Brown or Rusty Velvet Bush)

An erect shrub to 2m high covered with rusty brown hairs. Leaves rusty brown narrow broadly lanceolate. Flowers brown with cream inside. Tolerates very dry conditions, 4 to 6 months of summer without watering. A prostrate form is also available. This form is found on headlands near the sea. Growth in cultivation is often slow.

Distribution- NSW & Victoria.

Lasio. floribundum.

A bush to 1m by 1m. This species has flowers that are very Thomasia like. They are a blueish purple and borne in profusion in Spring. This species is one of the more horticultural desirable members of this genus. Growth is generally fast. This species is hardy on the East coast.

Distribution- SW Wst Aust.

(I am very grateful to Susan Gee of Sth Aust for this article).

GRAFTING BRACHYCHITONS

There are many good reasons to graft Brachychitons. The main ones are:

1. It may be easier than striking cuttings.
2. It allows us to utilise an established root system.
3. Growth may be enhanced.
4. The new plant is identical (above ground) to the parent, unlike seedling.
5. It may flower earlier (in certain instances). (A nursery in Sydney was grafting mature flame tree wood onto seedlings & selling the plants the next Spring, in flower, for \$20. I believe the stimulus to flower was received by the branch when on the flowering tree. This will not occur again & therefore these grafted seedlings will not flower again until tree size. This is contrary to the claims of those that sold these \$20 flame trees. My belief is based on repeated grafts).

## METHOD

I use three different methods of grafting, viz:

1. The Chainsaw Method (I am unsure of its horticultural title).
2. The Approach Graft.
3. The Cleft Graft (or the whip & tongue graft).

Each of these is used in different circumstances & all can be successfully used by novices. With the first two techniques I have never had a failure, with the third I have about 10 to 50% success, depending on the conditions.

Indications & techniques for these methods are given here. I will not go into detail that is covered by books such as those by Elliott & Jones or Wrigley & Fagg.

## THE CHAINSAW METHOD

I have named this method after the most indispensable item used ie, the chainsaw. The chainsaw method is used to convert an established tree into a different species or hybrid. Australia seems to be full of flame trees that never flower & look poor (remember it is a rainforest tree & therefore likes rich soils & ample moisture). The unproductive tree is cut off & a different species is slipped between the wood & bark. This then establishes &, due to the massive root system, grows very quickly. Flowering can be expected a few years later( much earlier than a seedling). Growth of 2 to 3 metres per year is not uncommon.

The steps to this graft are:

1. Cut tree down to waist height (or ground height if the stump size reduction will worry you).
2. Select your scions (grafting material). From pencil thickness to 2 cms thick is usable. Cut the end so it tapers to a thin edge on one side (fig 1). Remove most or all of the leaves. If leaving any leaves they shouldn't be young fleshy ones with high water demands.
3. With a hammer & chisel, make a number of vertical cuts through the bark of the stump. Lift the bark off the wood on one side of the cut only ( figs 2 & 3). The more cuts, the more grafts that can be placed, the more likely is success. I usually place 8 to 15 grafts in each stump.
4. Slide the scions down in the cuts so the cut surface presses against the wood of the tree. Put it down as far as it will go. It will fit as in figs 4 & 5. The arrows mark the flow of nutrients for the graft & therefore close contact is required at these points.
5. Tie the stump so the bark is held firmly against the grafts. Apply a sealant to the cuts. This is to prevent drying out, as well as keeping out infection. Do not use a sealant that is watery in consistency as it may seep between the scion & stump & block the passage of nutrients.

Grafting mastic is best. The cut surface of the stump should be treated. House paint is suitable for this.

6. A plastic bag should be placed over the scions & closed off. This is to keep moisture in. If the stump receives direct sun a white bag is better than a clear one & perhaps summer should be avoided as the graft may be scorched.

7. The stump should be watered well to ensure adequate moisture is flowing in the plant. The plastic bags should not be allowed to be wet inside for too long. As they become wet inside, turn them inside out.

8. Once the graft starts growing, slowly acclimatise it by not closing off the end of the plastic bag or removing it for nights & overcast days.

If more than one scion starts growing, two things may happen. If the graft is from a tree, eg, B. discolor or acerifolius, one shoot becomes dominant. It will produce horm ones that will suppress the growth of the other shoots until they eventually die. If the graft is from a shrub, eg B. bidwillii, there is no suppression of the shoots & they will all grow well, producing a natural looking small tree.

The success of this technique lies with the practise of multiple grafting. Invariably one scion establishes out of the dozen or so placed. If they all fail the stump would shoot from the base (it always does) & an approach or cleft graft can easily be performed then (otherwise the shoots will have to be removed).

I demonstrated this method to the Hawkesbury SGAP group in 1985. It took a lot of talking to convince the hosts to let me chainsaw their flame tree which they felt must flower soon. I went ahead & demonstrated the graft, but then I was too nervous to follow up its progress in case it failed. About 8 months later they finally got word to me, via intermediaries, that the graft was eight foot high. I can go back into town now.

I have found B. Bidwillii, grafted onto flame tree roots, grows much bigger than it does on its own roots.

The age of the tree/stump does not seem to effect the success rate.

(This article will be continued in the next newsletter).

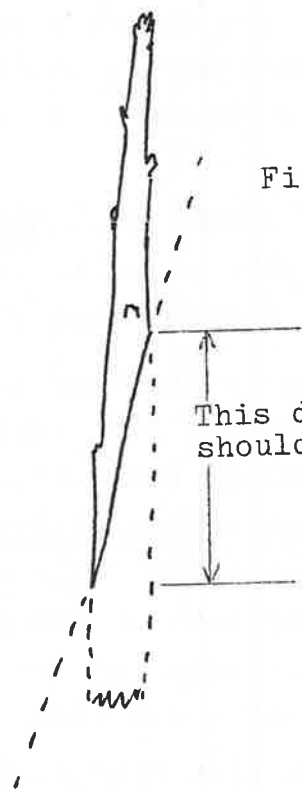


Fig. 1 Prepared scion

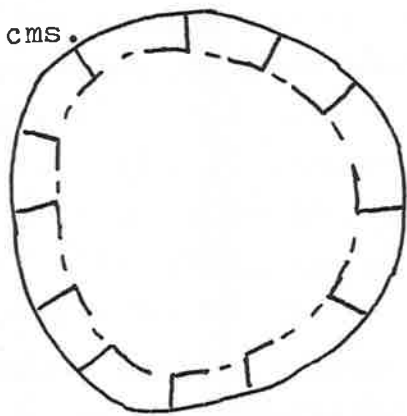


Fig. 3 Twelve cuts in bark with the bark lifted off the wood on one side only (from above).

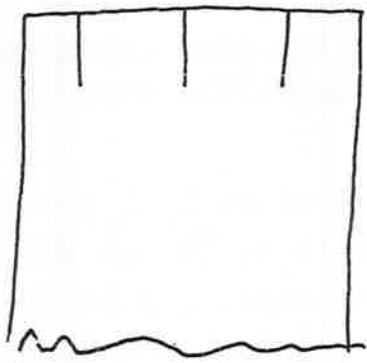


Fig. 2 Cuts in bark of stump (side view).

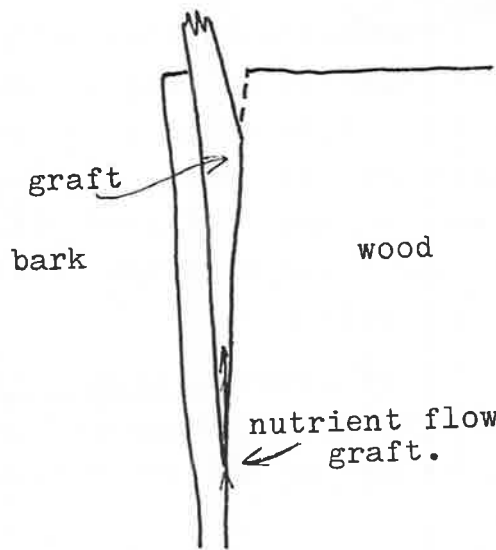


Fig. 5 Graft in position (side view).

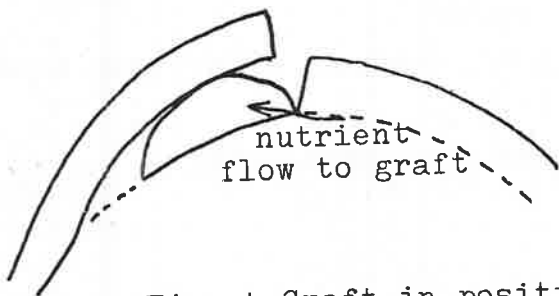


Fig. 4 Graft in position (from above).



## SEEDBANK

Our seedbank is underway thanks to Bruce Wallace. Bruce is at 20 Pearce St, Eaglehawk, Vic. 3556. At present there is seed of Brachychiton acerifolius, B. populneus & Sterculia quadrifida. I am contacting state seedbanks requesting seed from their seedbanks for ours. When we have subscriptions next year we will also buy seed from commercial suppliers. Hopefully we will have a bigger seedlist in the next issue.

A point of interest about the seed is that I collected the seed of B. populneus in May this year. It was in the process of being shed & was fully ripe. It was also from a number of trees. I am presently doing germination tests on the seed & they won't germinate. There appears to be an inbuilt dormancy. The seed is being germinated on Spagnum moss & therefore I can see the seed has not been eaten or killed by fungi. I did have a moth infestation & so I threw the seed in the freezer overnight. This certainly killed the moths & their larvae. The B. acerifolius still germinated well. The cold spell did not kill them, it also did not break any dormancy in the kurrajongs. If anyone has any experience with this I would be interested. It is very typical for the kurrajong to have a dormancy mechanism in the seed. Most inland plants have it. However I have never seen it documented for any Brachychitons. I will sit on these plants (not literally) & try to discover something.

## PLANT IDENTIFICATION

I have been sent various pressings requesting identification. I have not replied to these yet as I want to be correct when I do. It appears that the Thomasias are not clearly defined. The main reference for WA plants is "How to know WA wildflowers" by Blackall & Grieve. The Thomasia identifications this book gives is contrary to the names the plants are sold under over here. The problem is the book was written in 1956. It has not been updated since then (to do so would be a monumental task). It was reprinted as the public sent the message that an old book was better than no book at all. Therefore we are lucky to have this reference but we must use it within its limitations. When I gather enough pressings I will send them off to the relevant botanist & have positive identifications made. Therefore if you have a plant you would like to have identified could you do a pressing & send to me. The ideal is two pressings, one for me to keep as a reference as I lose the one I send away. The pressings should have about 8 inches of branch & leaves, flowers & seedpods. Of course you won't get flowers & seeds together very often, therefore you have to collect twice off each plant. Often flowers are sufficient but seedpods do help.

PLANTS FROM WILD SOURCES

Allied to the previous, I would like to collect plants from wild sources. Botanic gardens & botanists are after such plants. There is a lot to be learnt by studying natural variation, plus we may introduce new forms or color varieties. Therefore if anyone can collect plants from the wild (cuttings or seed is adequate) I would be very interested. The location must be detailed though, clear enough for someone else to go back & collect from that plant or group of plants. The Grevillea Study Group has a living plant collection that has official recognition as being of considerable scientific value, (Peter Olde is trying to have it classified as a national treasure). There is no reason why we cannot do the same thing. The botanic gardens will assist us by giving us plants & cuttings if we will gather plants of interest to them. This is a good way of increasing our range of species (we do have our undercover agents who gather plants from the gardens anyway, unfortunately the gardens are one step ahead & keep a few plants locked away - in case of vandalism!).

On that note, & before I make enemies, I will close.

STERCULIACEAE STUDY GROUP

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