

Association of Societies for Growing Australian Plants

EUCALYPTUS STUDY GROUP - UPDATE - JULY 2007

Treasurer, seedbank and temporary leader:

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HELLO TO ALL ESG MEMBERS

Firstly, I would like to say a huge THANKYOU to Margaret Moir who has so ably carried the group for the last few years. It can be a fairly thankless task with little response or contribution from members, but Margaret kept us supplied with lots of information and enthusiasm for eucalypts, and it is important that this continues.

As there is a bit of delay in the ability of the Friends of Peter Frances Points Arboremum to take over the leadership of the group, I am just making contact with members to keep the ball rolling.

I suggest that as there has not been a newsletter for a while, that we freeze subs for 07/08. Any subs that have been received (eg from Steve Harries and Allan Raine) will be held over for the 08/09 year. This means that NO SUBS ARE DUE NOW.

CORRESPONDENCE.

STEVE HARRIES

Steve brings up again the constant problem of local v imported seed. He offers to supply seed from central coast NSW to anyone who would like it, but points out (and I quite agree) that we should really be growing from seed indigenous to our area.

(Ed....perhaps we can draw a distinction between large scale plantings which should be from local seed, and small scale garden specimens where there will be less volume of flowers for cross-pollination. It would be interesting to see what other members think about this)

IAN ROBERTS

Ian sent some wonderful photos from his trip to the south coast of WA. We hope to publish these in a future newsletter.

He also responded to my suggestion of "6 of the best" ie. eucs growing well out of their natural range, by listing the following:-

- a) in 16" rainfall in strongly alkaline red brown loam over clay at 230m altitude his best are:- *E. fraseri*, *lansdowniana*, *pimpiniana*, *woodwardii*, *leucoxydon* ssp *megacarpa*, *lesouefii*
- b) Clare Hills with skeletal grey clay over shale, 22" rainfall and 400m altitude are:- *optima*, *kingsmillii* ssp *alatissima*, *macrocarpa*, *rhodantha*, *Corymbia citriodora*, *wandoo*. Although Ian then says that with 300 species doing well it was hard to choose.

(Ed...all I can say is that I am green with envy!!)

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JOHN PURSE

John has sent to us an article that he wrote for 'Pentachondra', the Newsletter of the Australian Plant Society in the UK in Dec 2006. Thanks John for sending this on to us.

Saving seed – some cautionary notes

John Purse

I have obtained many samples of seed of Australian plants from a range of suppliers in recent years, and have collected further samples myself. The suppliers include commercial ones, and also seed banks of several plant societies, including the Australasian Plant Society. I have found that most seedlots are viable, but that growth of the resulting plants is quite often poor. It would be easy to ascribe this poor growth to inappropriate composts or environmental conditions, and initially I simply accepted this as 'one of those things'. However, I realised this was not an adequate explanation when I raised two seedlots of red-flowered moort (*Eucalyptus cernua*, formerly known as *Eucalyptus nutans*) at the same time; all plants of one seedlot were vigorous from the outset, and remain so 18 months later, while all the plants of the other seedlot are weak and have never looked healthy. I knew that the healthy seedlings had come from a defined wild population, as I had bought them from the Australian Tree Seed Centre.

In the light of this observation, I suspected that inbreeding depression was at work in the non-vigorous seedlot, and I reviewed my experiences with seedlots of other species. It turned out that seedlots that were collected from populations of plants, either in the wild or cultivated, seemed to have germinated and grown well. However, seed that came from isolated plants, or probably did, often had low viability and tended to produce a high proportion of abnormal plants. So I think that I have been seeing effects of inbreeding. I doubt that I am alone in this. But a little background knowledge may help to avoid the problems.

In any plant species in their natural populations, individual plants will usually differ genetically from each other. This variation is maintained over generations by outcrossing, i.e. cross-pollination between individuals, followed by natural selection. It is estimated that 80% of higher plant species are predominantly outcrossing in their natural populations, and that this percentage becomes increasingly higher still with increased longevity of the species. Thus, it is safe to assume that the vast majority of woody species are outcrossing. This does not mean that such species cannot self-pollinate, although they frequently have a variety of mechanisms that tend to prevent this occurring, and any seeds resulting from self-pollination tend to have poorer growth and long-term survival. This latter point has been quite well documented in various forest tree species of economic importance.

The obvious practical lesson to draw is that seed should be collected from populations of plants that are able to cross-pollinate, if at all possible. For perennial species in particular, seed from isolated specimens, whether in nature or in gardens, is unlikely to perform satisfactorily, even if the parent plant is outstanding. The problem of course is knowing the precise provenance of the seed, unless you have collected it yourself. Of the commercial seed suppliers, only the Australian Tree Seed Centre provides this information routinely. In my recent experience, other suppliers are happy to advise on the original source of the seed if requested, if they know themselves, but they are often surprised to be asked. I suspect they are rarely asked for this information, and so do not regard it as very significant. If the importance of this information was more widely-recognised and freely-available, I wonder whether we would have more success stories in our efforts to cultivate challenging subjects?

Sources

I have drawn the background information in this article from a chapter by D. Coates and M. Byrne entitled 'Genetic variation in plant populations: assessing cause and pattern', published in a book 'Plant Diversity and Evolution: genotypic and phenotypic variation in higher plants' edited by R J Henry (CABI publishing 2005). This chapter gives a good summary of an extremely complex subject, illustrated by many studies from Australia.

The Australian Tree Seed Centre catalogue is available at:
<http://www.ffp.csiro.au/tigr/atscmain/index.htm>

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VISIT TO DEAN NICOLLE'S ARBORETUM

On Sunday 24th June a large number of cars gathered for a visit to this arboretum. Despite the fact that there were many people, and children, Dean gave us a wonderful day and insight into the diversity and complexity of the genus "Eucalyptus". The arboretum is about 10 minutes north of Goolwa in SA and on the 80 acres, Dean has 850 species of eucalypt. More can be learned about his work on the website "Currency Creek Arboretum". He advertises the next Open Day on this site, and I can really recommend a visit.

On the way we called at "The Daisy Patch" nursery at Coonalpyn where John Barrie has quite a number of eucs in his garden, and some interesting species for sale.

SEED BANK

Usually I have planted my seed once the weather warms up, perhaps in early October. However, for the last couple of years I have been putting it in in July, on a warming panel until germination has taken place. Then seedlings are moved to the warmest place possible outside. I find that this means that the seedlings have far more time to become established over the summer, and are more ready to cope with the stresses of the following winter. The seed bank list is little changed from the previous list, so do request seed for planting soon.

Happy Growing to all eucophiles!!!
Elspeth Jacobs