



David Lightfoot, in Melbourne, Victoria has very donated a series of folios by J.H. Maiden, Government Botanist of NSW and Director of the Sydney Botanic Gardens called 'A Critical Revision of the Genus Eucalyptus' dates range from 1904 – 1917. It's not a complete set but there are about 35 thin, large-format folios with mostly light blue, thin cardboard covers. Although the information in them is obviously out of date they are an excellent historical reference. David gave them to the Eucalyptus Study Group and in my opinion we should donate them to a public, educational institution so that more people can access them.. (I sounded out The Australian National Botanic Gardens in Canberra but they already have a full set.) Let me know what you think about donating them and to whom - Any suggestions for worthy recipients?

The Smallest Gum Tree

By Jeff Irons (UK APS)

The Tasmanian Eucalyptus *vernica* is the only eucalypt found frequently above the tree line. Occasionally a small tree on protected leeward slopes, it is more commonly found as a dwarf mallee in alpine scrub and heath. These characteristics ought to make it a popular rockery plant for cool areas. That does not seem to be the case and it is encountered only rarely.

In the garden it attracts attention, particularly in winter and towards evening. This is because unlike most eucalypts it has leaves that are held almost horizontally. Since they are shiny, not glaucous (*vernica* means varnished) the low sun is reflected off them and the plants create little pools of light. Other characteristics are that there is little difference between juvenile and mature leaves, and that the leaves have distinctly different upper and lower surfaces. They are rounded and not long and narrow. All in all, it is an unusual Gum.

There is little or no information about its germination needs but it is safe to say that germination will be best at low temperatures and that there is a probable need for cool moist stratification. Although seed is reputed to be difficult to germinate I have never had any problems with it and suspect that the difficulties reported have been either consequence of high temperatures or of seed lots containing little fertile seed. Once seed has germinated the fun begins! This is because a single batch of seed often produces seedlings with various growth rates. One seedling can be 15 cm tall when 8 years old, while another will race up to a height of 2 metres in 5 years. Needless to say, the dwarfs are the most desired and the clever gardener gets rid of the obvious giants to unsuspecting friends. These large trees are not totally undesirable for they respond to coppicing, so can be cut down to the base when they get too tall, and left to grow up again.

Botanically Eucalyptus *vernica* is a Tasmanian endemic found locally in the west and south west of the State, between 600 m and 1250 m. It is part of the cline with *E. subcrenulata* and intermediates are found on some of the western sub-alpine mountains. The difference in altitude of the various occurrences is not a consequence of milder and more extremes climate. Rather it results from the north-east to south-west downward slope in Tasmania's tree-line. Nevertheless plants growing in the most severe alpine environments have smaller and thicker leaves than those at relatively warm sites. They also reach flowering stage when still producing juvenile leaves. These dwarfs are the ones most desired by gardeners. The natural soils are poorly drained, peaty and over quartzite, granite or sandstone. In the garden a moisture retentive soil is needed and plants will not stand prolonged submersion. The species is related closely to *E. recurva*.

Eucalyptus Cultivation – Its effect on the evolution of the Species. By Lindsay Daniels (QLD)

The Eucalyptus genus has now about 700 recognized species. Until recent years the evolution of the species was largely left to nature, although aborigines with their own seasonal burning would have had some effect.

Now there is another factor that I believe will have considerable effect on the future evolution of the species. This is the growing of Eucalypts in cultivation that has greatly increased in recent years and may well continue to increase as their usefulness for many purposes is realised.

This has resulted in species from outside an area being introduced. Although climate and soil type differences can be limiting factors, there are many non-local species being planted in close proximity to local growing species and in some cases near other introduced species from yet another area.

As related species of eucalypts readily hybridise when grown in close proximity to each other I believe that many new hybrids will occur if the introduced species is related to a local species. This will result in increasing the genetic diversity that is already present in the genus.

If this is made use of and superior hybrids selected and bred from we could see the value of eucalypts enhanced as we have seen with other plant and animal species improved by selective breeding.

The intervention of humans is really only a continuation of the evolution of the species which has and will continue in nature. I believe that there is a vast amount of untapped genetic material in eucalypts and this can and should be made use of.

EUCALYPTS UNDER THREAT (Federal Ministry for Forestry and Conservation 6 June 2001 Media Release)

"Australia's eucalypts are under greater threat today than ever before," said Wilson Tuckey, Minister for Forestry and Conservation at the launch of the book *Diseases and Pathogens of Eucalypts* at Parliament House, Canberra.

Minister Tuckey said, "The global importance of eucalypts for wood production, land rehabilitation and local amenity plantings is not always recognised by Australians. Most of us don't realise that eucalypts are the most widely planted hardwood trees in the world.

"As well as helping to meet the growing world demand for cellulose fibre, timber and firewood, they are being used to renew the seriously depleted timber and firewood resources associated with poverty in many countries. A good knowledge of the diseases and pathogens that hinders their growth is, therefore, very important. '*Diseases and Pathogens of Eucalypts*' brings that together and makes it available to all interested parties."

Destructive disease epidemics, particularly dieback caused by cinnamon fungus over vast tracts of native forest in south-eastern and south-western Australia, and foliar diseases of plantations in Australia, New Zealand and South Africa, have stimulated intensive research into the cause and management of diseases of the eucalypts.

When eucalypts were first grown outside Australia, in the absence of their co-evolved parasites, they appeared healthier and more vigorous than in their native land. Later, as the plantings became more extensive, the trees began to suffer attack by pathogens, sometimes introduced from Australia and more recently from local plants moving onto the introduced eucalypts.

Mr Tuckey said, "We do need to be careful that those pathogens, which have recently moved onto eucalypts in other countries, are not accidentally imported into Australia."

New introductions could have a serious impact on conservation value of native forests as well as commercial values of plantations. This is the first, globally comprehensive compilation of material related to eucalypt diseases and pathogens. It includes contributions from 31 experts from Australia and elsewhere in the world.

It includes an account of the general biology and genetic diversity of the eucalypts as a basis for the diagnosis and management of disease, taxonomic information on pathogens and diseases they cause, and the options and constraints for managing disease in native forests.

Further inquiries:

Mr Tuckey's office: Graeme Hallett 0419 688 440
La Trobe University: Professor Phil Keane (03) 9479 2219
CSIRO Forestry & Forest Products: Dr Glen Kile (02) 6281 8314

The book *Diseases and Pathogens of Eucalypts*, edited by P.J. Keane, G.A. Kile, F.D. Podger and B.N. Brown, is suitable for forest and plantation managers, plant pathologists and forestry students.

The 592-page book with colour plates is available for \$150 (plus \$9 postage and handling) from CSIRO Publishing, PO Box 1139, Collingwood, Vic 3066 (Email: info@publish.csiro.au, Web: www.publish.csiro.au).

Gains From Planting Eucalypts and Acacias Together

Recent trials suggest that mixed plantings of eucalypts and acacias can offer production and environmental advantages over single-species plantations in both the tropics and southern Australia.

A major aim of the research, conducted by Partap Khanna and CSIRO Forestry and Forest Products colleagues over the past five years, was to see to what extent gains in eucalypt productivity due to nitrogen fixation by the acacias would offset losses from competition between the species for water, nutrients and light. They found the acacias' contributions to soil nitrogen cycling gave a substantial early boost to growth of the eucalypts.

The trials, funded by the Australian Centre for International Agricultural Research (ACIAR), were conducted in Thailand (with *Eucalyptus camaldulensis* and *Acacia auriculiformis*) in collaboration with the Royal Forestry Department and in East Gippsland, Victoria (*E. globulus* and *A. mearnsii*) with the Department of Natural Resources and Environment. They compared eucalypt and acacia monocultures with 50:50 and 1/4 : 3/4 species mixtures. Two planting densities were tested at each location – a) that were used locally in commercial plantations and b) with closer spacing.

According to Khanna, eucalypts and acacias remain the preferred plantation species in the tropical Asia and Pacific region because of their fast growth rates. However, concerns are growing that repeated short (7--10 years) eucalypt rotations may reduce soil fertility, raising doubts about the long-term sustainability of plantations. This is one reason why mixed-species plantations, including nitrogen-fixing acacias, are attracting increasing interest. Khanna also points to other possible advantages, including reduced susceptibility to pest or disease outbreaks and greater flexibility in meeting changing market demand for different types of wood. Also, growers will have the option of harvesting the very-fast-growing acacias for fuel wood after perhaps 4 years, providing an early financial return.

The trials showed that by that time the acacias should have had a substantial impact on soil fertility and growth of the eucalypts. For example, in Thailand the growth rate of eucalypts on plots planted with a 50:50 species mixture and cleared of acacias after 28 months was 15% greater than that in a pure eucalypt stand. The amount of nitrogen fixed annually by acacias in the 50:50 stands was estimated conservatively at 30 kilograms per hectare, sufficient to substantially replace the nitrogen lost from the system with the final tree harvest.

In East Gippsland, the researchers found that by 25 months from planting eucalypt height, basal area and volume increments were all affected positively by the presence of acacias. Measurements after 33 months showed the nitrogen concentration in fine roots of eucalypts in a 50:50 mixed stand was 63% higher than in a eucalypt monoculture.

Studies of root distribution in mixed stands showed acacias dominated the top 15 centimetres of soil, with the eucalypt roots pushed below this. Khanna suggests that when the soil dries out the fine roots of the acacias will dry first and some may die. 'Then, when the soil wets again these dead roots with high amounts of nitrogen will release their nitrogen and the eucalypt roots sitting below may be able to absorb it.'

He points out that short-rotation mixed-species plantations may still need to be fertilised with phosphorus to maintain high levels of productivity. However, mixing acacias with eucalypts should greatly reduce the need for nitrogen fertilisation, lowering both costs and the risk of leaching, which has adverse environmental side-effects such as pollution of water sources and soil acidification.

The CSIRO team is discussing the possibility of new collaboration with an Australian company in mixed-species trials combining *E. globulus* with *A. mearnsii*, and *E. nitens* with *A. dealbata*. The company is particularly interested in *A. dealbata* because of its superior pulping properties.

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Shades of Eucalyptus

23 February 2002 – August 2002

This exhibition features work done by Adelaide textile artist **India Flint** for a Masters Thesis entitled '*Arcadian Alchemy: Ecologically Sustainable Dyes for Textiles from the Eucalypt Forest*'. The exhibition has been on display at the Botanic Gardens of Adelaide - closes in Adelaide 9 Feb 2002 then moves on to the ACT for 23 February 2002 – August 2002

The artist has done extensive research into eucalypts as dye sources, testing more than 250 samples from the Currency Creek Arboretum, Mount Lofty Botanic Garden and other sources. She has developed a method she has called the eco-print © process for quickly testing the dye potential of eucalypt samples, using small quantities of leaves and water and no harmful mordants.

The exhibition will include seven large gowns made (mainly) of wool felt dyed with eucalypt leaves and a set of panels about key eucalypt species she used as dye sources, with various sample fabric lengths. It will also display a selection of the more than 250 test samples the artist produced as part of her research and will explain the eco-print © process she developed to test the colours of small leaf samples.

Shades of Eucalyptus will be on display in the Visitor Centre at the Australian National Botanic Gardens, Clunies Ross Street, Acton, ACT. Visitor Centre open 9.30 am to 4.30 pm daily, for more information phone 02 6250 9540

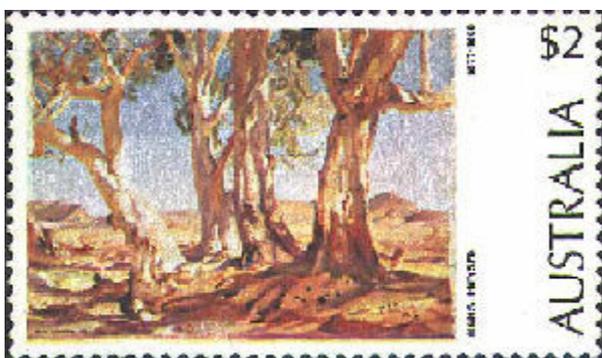
Eucalypts on Australian Stamps

By John

Hodgkinson.

One of the most distinctive features of the Australian landscapes are the trees. The most common type of tree is the Eucalypt, or gum tree, with about 550 and 600 species. These trees make up about 95% of our forest trees.

They symbolise the Australian landscape and contribute to its colour, both because of the blue-grey foliage of the trees and because of the oil that vaporises from the leaves in warm weather, adding to the misty blues of distant hills. Eucalypts are found in all parts of the continent, from the coast to the tree line on Mount Kosciusko, our highest mountain, and from the edge of the desert to the margins of the rainforest. They have adapted to all types of climates and soils.



The river red gum (*Eucalyptus camaldulensis*) shown on the left has the typical shape of the eucalypts. This is the \$2.00 Painting Series stamp issued in 1974. The river red gum is found on floodplains throughout mainland Australia and is one of the most common gums.

The other distinctive feature of the eucalypts is the gumnut - the seed pod of the gum tree, shown on the right with typical flowers and leaves. The seeds are held in the gumnut and are dispersed from it up to several years after the flowers die. The name "gum tree" refers to the gum which exudes from the

bark, especially from the smooth barked species, and most often when they are damaged.

Identifiable Species on Stamps

The first readily-identifiable species to be pictured on an Australian stamp was the Tasmanian blue gum (*E. globulus*) on the 15 cent stamp in the State Floral Emblems series, issued in 1968, and shown to the left. It is a

large tree up to 70 metres high with yellow to cream flowers. It is native to Tasmania and a small part of southern Victoria. It is one of the most widely planted eucalypts overseas, including Spain, Portugal, India, Brazil, South Africa, and the USA. It is grown mainly for the oil that can be distilled from the leaves, and also for firewood. It is such a feature of the landscape between Los Angeles and San Francisco that many people think that it is native to the area.

The river red gum on the 1974 issue mentioned above was the next eucalypt issue. *E. camaldulensis* can be found along most watercourses in every state in mainland Australia. It grows to about 30 metres and has smooth white or grey bark streaked with red. It has been the centre of an important timber industry, producing heavy, dark red timber used for a range of uses from polished furniture to railway sleepers and fences. The design on the earlier 1969 15 cent timber stamp (not illustrated) showing part of a log with gum nuts and gum leaves are probably based on the river red gum.

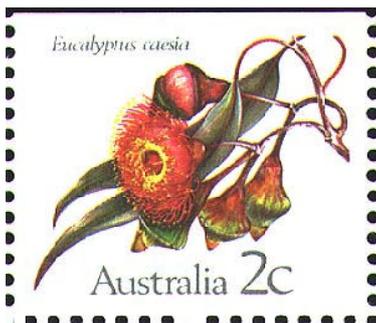


Ghost gum is the common name for the tree shown on the 1978 25 cent stamp on the left. This name for the *E. papuana* comes from the light grey to white, smooth bark that makes this species so distinctive, especially when it is growing in a single species forest and seen at night in the moonlight. It is widespread across northern Australia.

In 1980, the swagman on the Waltzing Matilda strip of five 22 cent stamps was shown sitting "under the shade of a Coolabah tree," as the words of the song tell us. This was probably *E. microtheca* (not illustrated), although there are several species with this common name. It is a medium-sized tree, usually with a crooked trunk. It grows near watercourses almost all over Australia, especially in the more arid areas.

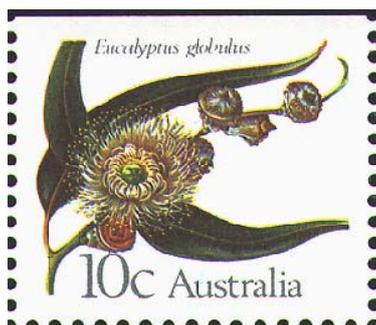
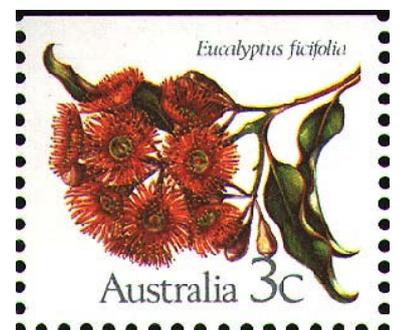
Five species of eucalypts were shown on the stamp vending machine folders (booklets) issued in 1982:

E. calophylla 'Rosea' (1 cent) - pink flowered marri; native to Western Australia but widely grown in the eastern states; tall tree with pink flowers. Right.



E. caesia (2 cents) - native to Western Australia, where most of the best flowering eucalypts come from; small tree with dusty pink to red flowers and reddish flakes of bark over a smooth green trunk. Left.

E. ficifolia (3 cents) - the red-flowering gum; small tree native to Western Australia; flowers are from white to bright scarlet and every shade between; widely planted in gardens across Australia, but not very successful in areas with a wet summer season. Right.



E. globulus (10 cents) - Tasmanian blue gum; one of only two identifiable eucalypt species to be on more than one stamp issue. Left.

E. forrestiana (27 cents) - known as the fuchsia (or fuschia) mallee; small tree native to Western Australia; most

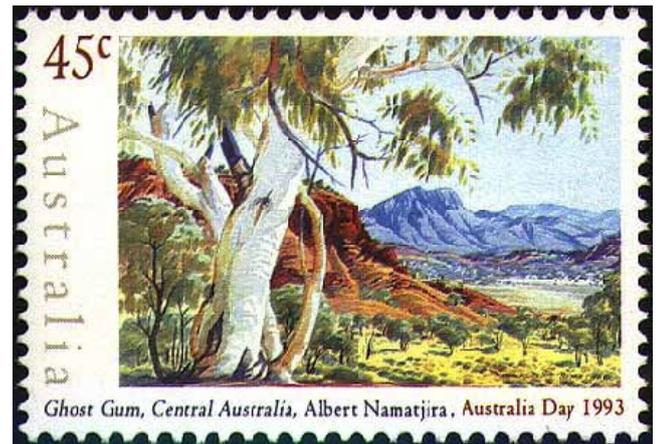


distinctive feature are the pendulous four-winged red-yellow buds which give the tree its common name. Right.

In 1988, the 70 cent stamp in the Panorama of Australia series (not illustrated) showed an area of bush dominated by *E. regnans*, the Mountain Ash. This is the tallest of the eucalypts, growing to more than 95 metres in height. It is the tallest hardwood in the world and the tallest flowering plant. It is native to the mountains in eastern Victoria and southern Tasmania. It is one of the most important hardwoods, being widely used for interior and building construction as well as for wood pulp. Like some of the giant Californian redwoods, some of the largest trees are named, including the largest example, the Maydena Tree, at just over 98 metres, or 320 feet. Others are the *King of the Cumberland*, the *Ada* tree, and the *Cornthwaite* tree. Unlike the redwood, they are relatively short-lived, with 300 to 400 years appearing to be their maximum life span. Redwoods can live for more than 2000 years. The Mountain Ash is also easily killed by fire, with regeneration occurring quickly from seed. It also grows quickly.

Salmon gums were shown in a painting by Robert Juniper on the 28 cent stamp in the Sterning Vending Machine folder issued in 1990 (not illustrated). The painting does not provide a realistic portrait of the trees which grow to about 30 metres, with a straight trunk & salmon-pink, smooth bark.

The next identifiable species is again the ghost gum, on one of the pair of 45 cent stamps issued for Australia Day in 1993. The tree forms most of the foreground in the painting of a central Australian scene by Albert Namatjira, the most famous Australian Aboriginal artist of the 20th century. This painting shows the tree more realistically in its natural landscape than did the 1978 stamp described above.



The final species that I have illustrated is the 1996 \$5 stamp showing a part of a mountain ash tree, *E. regnans*.

Eucalypts have been shown on many other Australian stamps, but the particular species is not easily identifiable. The first was probably the 1929 green airmail 3 pence stamp showing an aeroplane flying above a farming scene. The shape and situation of the tree is very similar to that of *E. camaldulensis*, but it can not be confirmed by visual examination of the stamp alone.

Unidentifiable Species on Stamps

Other stamps showing eucalypts include:

- 1934 2d, 3d, 9d merino ram on the John Macarthur centenary issue.
- 1936 2d, 3d, 1 shilling centenary of South Australia.
- 1937 2d, 3d, 9d 150th anniversary of the founding of New South Wales.
- 1937 ½d orange kangaroo and green koala stamps.
- 1940 1d, 2d, 3d, 6d Australian Armed Services series.
- 1942 2d, 2½d, King George VI stamps.
- 1946 2½d, 3½d, 1 shilling centenary of Major Mitchell's explorations.
- 1950 1½d green Queen Elizabeth the Queen Mother and 2½d King George VI stamps.
- 1962 5d 50th anniversary of the Australian Inland Mission.
- 1964 9d black-backed magpie stamp.
- 1970 6 cent 18th International Dairy Congress - this also shows a standing dead tree, which is a common feature of eucalypt forests.
- 1979 20 cent Australia Day stamp.



- 1980 60 cent King Parrot stamp - showing the hollow sections of gum tree branches commonly used by birds as nesting sites.
- 1985 33 cent *Snugglepoot* and *Cuddlepie* stamp in the children's books strip of five stamps.
- 1987 36 cent stamp showing the "terrible descent" in the Man from Snowy River strip of five stamps.
- 1988 on three of the five stamps in the Arrival of the First Fleet strip.
- 1990 65 cent stamps showing a quoll on a tree branch in the Animals of the Hight Country series.
- 1992 several of the 45 cent Threatened Species series, in particular the trees shown with the Pygmy Possum and the Squirrel Glider.
- 1992 50 cent koala stamp - koalas eat eucalypt leaves almost exclusively - the species they prefer varies on a local or regional basis, but are limited to probably less than 20 species overall - they browse no more than 2 or 3 regularly, while others are used opportunistically for food or for other behaviours such as sleeping.
- 1994 on two of the 45 cent stamps showing koalas.



The Uses of Eucalypts

Other Australian stamps could be used to show the sorts of uses that the trees were put to, including:

- the Murray River wharf shown on the 20 cent 1979 stamp in the Ferries and Steamers series.
- the wooden railway bridge on the 35 cent Puffing Billy stamp.
- the buildings on the 43 cent, 75 cent, and \$1.20 stamps in the 1991 Literary Legends series.

All of those structures were very likely to have built from eucalypt timber because of its strength and durability under harsh environmental conditions.

Eucalypt flowers are a very good source of honey, with different species producing very different colours and tastes. With different species flowering at different times throughout the year, bee-keepers move their hives to keep the bees close to the nectar source.

Sources of Inspiration

Early Australian poets, such as Adam Lindsay Gordon, wrote:

*'When the quarl'd, knotted trunks
eucalyptian,
Seem carved, like weird columns
Egyptian.'*

*Will Olgivie praised:
'Hurrah for the red-gums standing
So high on the range above!'*

*And A.B Paterson mentioned:
'A scent of eucalyptus trees in
honey-laden bloom.'*

Australia, unlike most other continents, has a very small amount of native forest, covering about 6% of the land area. Much of this has been cleared for farming since Europeans first settled in 1788. Eucalypts form the basis for these forests.

Trees are an integral part of our lives. We use them for our houses, furniture, chemical products, and medicines. Songs, poems and prose in every language praise the beauty of their flowers and foliage, fruit and restful shade. They support countless animals and other plants. They are great primary producers, moderating the climate and filtering some of our industrial wastes. Without them, our civilisation would be very different.

It is very fitting that trees appear on many stamps from throughout the world. Eucalypts are the quintessential Australian tree; it is very appropriate for them to appear on so many of our stamps.

Assistance with the graphics for this article was given by the Australian National Botanic Gardens. Other Australian plants on Australian stamps can be found at their site. <http://155.187.10.12:80/stamps/>

This article is from the July 1996 issue of "Thematically Speaking". By John Hodgkinson. And can be found, along with lots of other interesting articles relating to thematic exhibiting, at the below Website:

<http://www.toptown.com/THEEDGE/yaleman/tq.htm>

Thematics Queensland is a study group whose members are all interested in thematic exhibiting and collecting. Our emphasis is on preparing competitive exhibits for entry in exhibitions organised under the rules of the FIP, the world philatelic body which establishes the rules for competitive exhibitions. TQ is Chapter 86 of the American Topical Association. Thematics Queensland has members in all states of Australia, East Asia, New Zealand, Israel, and Belgium. About half of the members live in the south-eastern part of Queensland, around Brisbane. That is the origin of the name Thematics Queensland. The group was established by a small group of keen thematic exhibitors in Brisbane in June 1990 as a mutual assistance group, but it has grown much more than we thought possible.

Members Reports

Lorraine Haig (Tasmania) - This is a progress report regarding my raising of Eucalypt seeds in the winter for a farmer friend as mentioned in the last issue. Out of the 400 hundred I initially raised I have ended up with 135 to plant out. We started planting these a week ago. The farm is in the Coal River Valley, an area renowned for its grapes, particularly Pinot Noir. He has a large paddock that he has fenced off from the stock. This is adjacent to a big dam so watering the plants is no problem. The species we are planting mostly come from the trees in our garden. These include *E. kitsoniana*, *E. globulus* spp. compacta, *E. leucoxylon*, *E. ficifolia* (from the farm) and a few other varieties of which I do not know the names, however they have either red or yellow flowers. We still have many more to plant and I will be raising a bigger variety of seeds for future plantings.

Paul Kennedy (Victoria) – I am happy to report that 80% of the seeds in the germination trials have been viable, the only ones not to have responded so far are staeri, semiglobosa, peeneri, umbellata, roycei, patellaris, “tindaliae”, willisii *ssp falciformis*, williamsonii, lucens, and stockeri. I have used the bog method, I just put a graded sand into a 50 high x 40 wide mm tube and sit this in a round plastic margarine container with 25 mm – 30 mm depth of water. Most germinate within a fortnight, but some like *E. setosa*, rhodops, quadricostata and hallii were up in three days and are now ready for potting on. I will try the eleven species which did not germinate again and see if there was something wrong with my technique.

- *Eucalyptus macrocarpa ssp elacantha* is in flower and is very striking.

Werner Kutsche (South Australia) - reports seedling leaf anomaly in *Eucalyptus gypsophila*¹, “leaves growing in three’s, opposite to each other. After a couple of months it reverted back to opposite pairs.”

Thanks to **Hugh Seeds (Western Australia)** for his donation of *Eucalyptus erythrocorys*, *grossa*, *synandra*, *websteriana*, and *youngiana* (pink and cream flowered varieties); and **Steve Harries** for *Eucalyptus parvifolia* seed.

¹ See *Eucalypts of South Australia* by Dean Nicolle 1997 (pages 112 – 113)