

California Report on Eucalyptus

by Ron Bracewell

Eucalypts have been a conspicuous feature of the landscape in California for so long, and are so obviously naturalized, that it is commonly thought, even by the older inhabitants, that the trees are native here. Of course, they were introduced from Australia, the earliest importations going back to just over one hundred years ago. I have been looking at the trees in the area where I live on the Stanford University campus. Several hundred mighty giants on the campus date back prior to 1870 when Leland Stanford acquired several farm properties, one of which already had avenues of gum trees. They are mostly Tasmanian blue gums (*E. globulus*) and red gums (*E. camaldulensis*) with a sprinkling of manna gums (*E. viminalis*). The blue gums are much stockier than the red gums—one near my house has a girth at eye level of over 20 feet—and they have all reached heights of about 100 feet. They are magnificent trees; there is some variation in the bark, but most often it is shaggy, rich and warm-coloured with great sheets peeling off, and reminiscent of a well known picture of Hans Heysen's, the one that has a few sheep standing in the fallen bark. The old red gums are also delightful, but the old manna gums are wonderful. With their broad crowns, and stark white branches (pink at the end of summer), they are the ones that are preserved as building sites are cleared. Yet in their proclivity for dropping massive limbs they rival the blue gums.

On the campus there is one large *E. diversicolor* (karri) and nearby in Palo Alto there is a large *E. cypellocarpa*. There are specimens of *E. maculata* (spotted gum) and *E. citriodora* (lemon-scented gum) that are possibly old but I understand that large specimens around here have been killed by frost, so these two species, though they are best sellers in southern California, have been recommended against for many years in this area.

To finish the account of eucalypts that were planted 50 years ago or more and have survived I should add *E. linearis*, *E. paniculata* and *E. pellita*, and trees that resemble *E. botryoides*.

On the San Francisco Bayshore Freeway, which passes by here, there are several thousand *E. lehmannii* (bushy yate) growing in drained salt marsh, and the resulting dense screen, with very attractively contrasting light green leaf buds against old growth, is most pleasing. These shrubby bushes have hardly any fruit, and it may be very small, but another form grown with a trunk in gardens has compound fruit as big as a fist, and one should be grown in every primary school playground so the children can fit the enormous opercula on their fingertips.

The following list shows species that will certainly grow around here.

Eucalypts Around Stanford Planted Before 1965: *E. albens*, *E. blakelyi*, *E. botryoides*, *E. bridgesiana*, *E. caesia*, *E. calycogona*, *E. camaldulensis*, *E. cinerea*, *E. citriodora*, *E. cladocalyx*, *E. cypellocarpa*, *E. dalrympleana*, *E. dielsii*, *E. diversicolor*, *E. diversifolia*, *E. dundasii*, *E. dwyeri*, *E. eremophila*, *E. erythrandra*, *E. erythrocorys*, *E. erythronema*, *E. eugenioides*, *E. exserta*, *E. ficifolia*, *E. flocktoniae*, *E. forrestiana*, *E. gillii*, *E. globoidea*, *E. globulus*, *E. globulus* var. *compacta*, *E. goniocalyx*, *E. grandis*, *E. grossa*, *E. gummiifera*, *E. kruscania*, *E. lehmannii*, *E. leucoxydon*, *E. linearis*, *E. macrandra*, *E. macrocarpa*, *E. maculata*, *E. maculosa*, *E. maidenii*, *E. megacornuta*, *E. melliodora*, *E. neglecta*, *E. nicholii*, *E. nutans*, *E. ovata*, *E. paniculata*, *E. pellita*, *E. perriniana*, *E. platypus* var. *polyanthemus*, *E. pulverulenta*, *E. punctata*, *E. redunca*, *E. resinifera*, *E. robusta*, *E. rudis*, *E. saligna*, *E. salmonophloia*, *E. sideroxydon*, *E. spathulata*, *E. tetraptera*, *E. torquata*, *E. uncinata*, *E. viminalis*.

CALIFORNIA REPORT ON EUCALYPTUS

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Eucalypts have been a conspicuous feature of the landscape in California for so long, and are so obviously naturalized, that it is commonly thought, even by the oldest inhabitants, that the trees are native here. Of course, they were introduced from Australia, the earliest importations going back to just over one hundred years ago. I have been looking at the trees in the area where I live and trying to piece together the history of the plantings. My home is on the Stanford University campus, which was assembled by Leland Stanford from several farm properties, one of which, in 1870, already had avenues of gum trees. Several hundred mighty giants on the campus date back to this time. They are mostly Tasmanian blue gums (*E. globulus*) and red gums (*E. camaldulensis*) with a sprinkling of manna gums (*E. viminalis*). These common names, which are well established, are of course perfectly recognizable in Australia. The blue gums are much stockier than the red gums - one near my house has a girth at eye level of over 20 feet - and they have all reached heights of about 100 feet. They strike me as having reached their height limit, for the upper branchlets are commonly dead, presumably killed by frost, but in Berkeley, about 50 miles away, there is a blue gum grove topping 200 feet. The blue gums are magnificent trees; there is some variation in the bark, but most often it is shaggy, rich and warm-coloured with great

sheets peeling off, and reminiscent of a well known picture of Hans Heysen's, the one that has a few sheep standing in the fallen bark. The old red gums are also delightful, but the old manna gums are wonderful. With their broad crowns, and stark white branches (pink at the end of summer), they are the ones that are preserved as building sites are cleared. Yet in their proclivity for dropping massive limbs they rival the blue gums.

It is rather odd to see squirrels rushing around the upper ^{of the gum trees} storeys. They obviously evolved in oaks and walnuts and such, as I can tell from the volunteers in my garden that spring up from their plantings. I suppose they plant gumnuts too; it would be interesting to find out.

The red gum blossoms are rather attractive and can often be seen at eye level, some borne on shoots from low down, others on pendulous branches weighed down by the previous season's fruit. You don't have to look far to find all kinds of variety in the buds. Those buds that look like a bee-bee with a small conical beak attached (but the operculum separates around the equator of the bee-bee) are not especially common. If you have a copy of Stan Kelly's wonderful book, see his Plate 102. But, unlike his illustration, they tend to come in sevens in this neighbourhood. If they come in elevens, the buds are more like *E. tereticornis* buds. Most trees, however, have seven fat buds without beaks. Under big trees, when the flowers are opening, the sound of falling lids is like rain and the principal litter in the gutters for several weeks is red gum opercula. From some trees they are thin and papery, and from others tough and woody. Before these buff coloured

drifts dissipate they are augmented by great quantities of fallen stamens. At another time, in summer, the main things to sweep up are outer opercula of the blue gums. Some red gum bud clusters seem to run wild, having dozens of buds not following the usual patterns of symmetry, and some trees have highly defective umbels, adjacent buds being joined by the tips or sides of their lids or by their cups in twos or threes or more. The nurseries offer both *E. tereticornis* and *E. camaldulensis* (formerly and still often labelled *E. rostrata*), but they are just names, and I don't think there can be any doubt that the mixture of genes in the red gums has long since ceased to be the same as that existing in any particular Australian habitat. There is also some doubt about the blue gums, which quite often have three-flowered umbels; that is not the case in Australia according to Mr. L.A.S. Johnson. It is easy to find juvenile twigs with three buds in each of two opposite leaf axils and, in addition, two extra buds on separate stalks in the same axils. With a little searching I would expect to find a specimen with a total of twelve buds per leaf pair. It might be interesting now to grow trees in Australia from Californian seed.

Among the older trees many other species occur, especially *E. bridgesiana* (apple-scented gum), *E. cladocalyx* (sugar gum), *E. ficifolia* (red-flowering gum), *E. leucoxyton* (white ironbark), *E. polyanthemos* (formerly known as red box but now widely sold as silver dollar gum or dollar-leaf eucalyptus), *E. robusta* (swamp mahogany), and *E. rudis* (desert gum). As before, the common names are ones in use in California.

On the campus there is one large *E. diversicolor* (karri) and nearby in Palo Alto there is a large *E. cypellocarpa*. There are specimens of *E. maculata* (spotted gum) and *E. citriodora* (lemon-scented gum) that are possibly old but I understand that large specimens around here have been killed by frost, so these two species, though they are best sellers in southern California, have been recommended against for many years in this area. I have noticed, however, that the landscape architects have been putting them in courtyards recently.

To finish the account of eucalypts that were planted 50 years ago or more and have survived I should add *E. linearis*, *E. paniculata*, and *E. pellita*, and trees that resemble *E. botryoides*. Of course there are many other Australian trees dating from those times, for example *Acacia* species, *Angophora costata* (uncommon), *Callistemon* species, *Casuarina* species, *Melaleuca* species, and so on. There is a noticeable absence of *Banksias*, and indeed of many other suitable plants. Only by pondering the ages of the trees have I slowly begun to realize what a very long time it may take to introduce a tree. We see this when the plantings of the last ten to twenty years are examined. Many attractive specimens daringly planted along highways or in other public places, and now old enough to be obviously durable, will not be offered to the homeowner in the local nursery. Instead, when he wants a drought-resistant tree that the 18-inch rainfall demands, he will be offered the tried and true species mentioned above. But they are all tall forest trees, a fact traceable to the interests of the rural

community of a couple of generations back. Other interests are now dominant.

While firewood, sawn timber, poles and posts, were principal motivations for eucalypt planting in California in former times, there is no longer any interest in eucalypts as a crop. (It seems, though, that large old trees have recently become saleable to mills manufacturing chipboard and this could possibly lead to extensive felling.) Planting of windbreaks in agricultural areas continues and so does highway planting, which has become more sophisticated. But there has been an enormous increase in landscape planting, which often calls for trees or shrubs of modest proportions. As much of California has no summer rainfall at all, the drought resistance of Australian trees is very interesting. So I should like to describe the present situation as it is developing.

In the best known local garden book 50 species of Eucalyptus are described in some detail and are more or less available as seedlings. A local seedsman lists seeds of 62 species in stock. (For comparison, the N.S.W. Forestry Commission lists seedlings of 100 species and Mr. Althofer lists seeds of over 300 species.) On the Stanford University campus I have found 70 species and within a radius of 5 miles or so there are more.

The planting has been done by state highway authorities, municipal authorities, landscape architects, private individuals and so on and it is impossible to say where the seed comes from. A friend asked me to propagate various snow gums for him and gave me seed that turned out to have come from New Zealand. Projects are under way in two or three places to raise trees from seed of documented Australian provenance, and

this may help the introduction of suitable trees, but it is obviously a long process.

On the other hand it turns out to be a very enjoyable occupation raising eucalypts from seed; one never ceases to be amazed at the seedlings - at least they are still amazing me - and I am sure there must be many people quietly raising them for fun. I should like to get in touch with some of them.

In this report I have not dealt with the special collections such as those at the University of California at Davis in the central valley and at the Los Angeles State and County Arboreta, but I should mention Max Watson's arboretum in San Jose where well over 100 species had been established. Many of the specimens planted on the campus in recent years by Stanford horticulturist Dirk Schroder were obtained from Watson. Mr. Watson built this collection up in 15 years, starting at the age of 65 around 1953, and directly or indirectly was the source of much of the variety seen today on the San Francisco peninsula. For example, on the San Francisco Bayshore Freeway, which passes by here, there are several thousand *E. lehmannii* (bushy yate) growing in drained salt marsh, and the resulting dense screen, with very attractively contrasting light green leaf buds against old growth, is most pleasing. Mr. Watson played some part, that I have not unravelled yet, in establishing the strain used. These shrubby bushes have hardly any fruit, and it may be very small, but another form grown with a trunk in gardens has compound fruit as big as a fist, and one should

be grown in every primary school playground so the children can fit the enormous opercula on their fingertips.

Never published before, the following list shows species that will certainly grow around here. It remains to be discovered which of the hundreds of other species will thrive and what their virtues may be.

Eucalypts Around Stanford Planted Before 1965: *E. albens*,
blakelyi, *botryoides*, *bridgesiana*, *caesia*, *calycogona*,
camaldulensis, *cinerea*, *citriodora*, *cladocalyx*, *cypellocarpa*,
dalrympleana, *dielsii*, *diversicolor*, *diversifolia*, *dundasii*,
dwyeri, *eremophila*, *erythrandra*, *erythrocorys*, *erythronema*,
eugenioides, *exserta*, *ficifolia*, *flocktoniae*, *forrestiana*,
gillii, *globoidea*, *globulus*, *globulus* var. *compacta*, *goniocalyx*,
grandis, *grossa*, *gummifera*, *kruseana*, *lehmannii*, *leucoxyton*,
linearis, *macrandra*, *macrocarpa*, *maculata*, *maculosa*, *maidenii*,
megacornuta, *melliodora*, *neglecta*, *nicholii*, *nutans*, *ovata*,
paniculata, *pellita*, *perriniana*, *platypus*, *polyanthemos*,
pulverulenta, *punctata*, *redunca*, *resinifera*, *robusta*, *rudis*,
saligna, *salmonophloia*, *sideroxyton*, *spathulata*, *tetraptera*,
torquata, *uncinata*, *viminalis*.