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SOME AUCKLAND EUCALYPTS

R.O. Gardner

Eucalypts do poorly in most N.Z. species lists and ecological accounts, humbled often to mere "sp."; even the DSIR naturalized plants checklist, for example, has had to rely on forestry records, not specimens from the wild (Sykes 1982).

True, these trees are often hard to sample, mixed-species stands being especially-frustrating (and it will be noticed that no mention is made below of the Domain and Cornwall Park plantation trees). But on the positive side, eucalypts are undemanding in the press; their taxonomically-important capsules are persistent on the tree and in the litter; and their seedlings make excellent specimens readily identifiable to species or species-group.

Auckland's eucalypts and related trees, some of which are discussed below, are mainly of visual or historic interest. Naturalization takes place mostly in semi-rural conditions and only close to the parent plantings.

With the exception of E. ficifolia, our trees are all species of south-eastern Australia (including Tasmania). They are immaculately illustrated (seedlings, bark type &c.) in Boland et al. (1985). The work of Auckland enthusiast Rev. J.H. Simmonds (1927) is useful though dated in nomenclature.

Those who feel that even in New Zealand eucalyptus study might require not only binoculars and boomerang but personal computer too will be attracted by the innovative scheme of Pryor and Johnson (1971), which assigns letters to subgeneric groupings so creating species code names e.g. MAKAA for E. obliqua.

Eucalyptus obliqua

messmate stringybark

This species is widespread through south-eastern Australia in coastal



L. J. Redouté del.

F. Rabourt sculp.

EUCALYPTUS obliqua.

and mountain forest, the first part of its common name being a bushman's reference to the variety of eucalypts it associates with.

E. obliqua occurs in two of Auckland's oldest plantings, at Old Government House (by Princes St) and "The Pines". Our best tree is the one at 179 Richmond Rd, somewhat unusual in its long-pointed buds and small capsules.

E. obliqua was the first eucalypt to be described so can appropriately serve here in a sketch of characters and taxonomy. Firstly, it belongs to the subgenus Monocalyptus, where the operculum of the floral bud is single (as if the sepals and petals were all fused). In the other major subgenus Symphyomyrtus the operculum is double.

Then it is placed in the group known informally as ashes (in reference to their timber); within their subgenus ash seedlings are relatively quick to acquire the alternate (adult) leaf arrangement. The venation of ash leaves, their main lateral veins few and directed well forwards, is also distinctive.

The nature of the bark on the adult tree is important taxonomically (and must be carefully described when a collection is made). E. obliqua has rather thick long-fibred bark, like that of stringbarks, a group coordinate with the ashes.

E. obliqua leaves are concolorous, that is, similar in appearance on either side, and they hang more or less vertically from the petiole, i.e. not as shown in the type illustration (by Redouté, no less! He had though only one poor specimen to work from).

In Eucalyptus the juvenile foliage that may develop on the lower trunk especially after canopy damage, is both convenient to collect and valuable for distinguishing between near-relatives. Such growth is seen on most Auckland E. obliqua trees, e.g. at Pt Erin Park.

Another general feature (though absent in some forest species) is the lignotuber, a woody organ that begins as a swelling on the seedling's cotyledonary and adjacent nodes. The adult lignotuber is an underground bud-embedded structure of great resistance to fire.

Naturalization of this species has occurred near Auckland in manuka gumland above Limeburners Bay, Hobsonville. Before the recent subdivision here seedlings, saplings and adults could be found plentifully, self-sown from older farm trees.

Eucalyptus botryoides

southern mahogany, bangalay

This species, well-suited to our climate, is relatively common in parks, e.g. in Cornwall Park by Puriri Drive, Rainbow's End at Manukau City &c. and also is tolerated as a young tree on quite a few suburban front lawns.

Its bark is thick and short-fibred right up to the smaller branches. The leaves are discolorous, that is, borne more or less horizontally on the shoot with their upper and lower surfaces of dissimilar appearance (i.e. a "normal" leaf); the leaf base too is regular not oblique.

Seedlings are occasionally found near the parents, on road cuttings, tuff banks, sea cliffs (Motutapu), graves &c.

The closely-related Sydney blue gum (E. saligna) has smooth grey bark and a less-branched trunk; its capsules are smaller, with pointed valves. It too is common around Auckland in shelterbelts &c., often with E. botryoides (with which it hybridizes). It doesn't appear to

have naturalized here.

Eucalyptus robusta

swamp mahogany

There are old trees above Judges Bay in Parnell Rose Gardens, at Monte Cecilia and at the old C.B. Stone home, Alexis Ave Mt Albert.

The species resembles E. botryoides in habit, bark and leaf, but has larger and distinctly more elegant capsules, whose narrowed valves cohere at the tips in "shakerpot" fashion. E. botryoides valves are free and chipped-looking by loss of the style base.

Eucalyptus globulus

Tasmanian blue gum

There are a number of fairly old trees in Auckland, our best being the sheltered open-grown specimen at Pt Erin Park. A notable recent loss was the one on Gladstone Rd, perhaps a companion to the several further down towards Judges Bay. There are others in the Domain above Stanley St, opposite near Wynyard Rd and in Symonds St Cemetery. Photographs indicate that the two remaining at the west end of Mission Bay by the old mission building date only to the later part of last century.

The species has naturalized around Auckland since the earliest days (Urquhart 1884) and presumably some trees with such origin can be still found (in the Karaka district?). However I have seen only a single wild seedling, on a grave in the old Glenfield cemetery.

Burstall and Sale (1984 p.186) describe NZ's best blue gums as being in the South Island, and naturalization too seems more frequent there; on Banks Peninsula, for example, wild plants occur on road cuttings wherever a shelterbelt of the species ends above.

According to Simmonds, Auckland winters are too mild for the species' health. Our trees are mostly scrappy-topped, with glaucous large-leaved coppice growth conspicuous below.

Eucalyptus ovata

swamp gum

There is a fine specimen in lower Albert Park above Bowen St and the end of Bacon Lane. (The equally good tree further along here is tallowwood E. microcorys).

In Waikumete Cemetery at one place E. ovata poles stand over manuka, perhaps having naturalized after a scrub fire.

This species sometimes occurs in shelterbelts with the similar E. viminalis and E. macarthurii. They may be distinguished:

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|--------------------|---|
| <u>ovata</u> | rough bark at the base of trunk, smooth grey higher up often orange-green after rain; capsules in 7s, obconical. |
| <u>viminalis</u> | limbs paler, with hanging bark strips; capsules us. in 3s, truncate-globose. |
| <u>macarthurii</u> | trunk, limbs and branches with platy-fibrous bark; leaves smell of rose geranium, capsules in 7s, truncate globose. |

Eucalyptus vimimalis

manna gum

This species is quite frequent around Auckland in parks, schools &c. There is an excellent group of five at the top of Myers Park.

I have seen seedlings on railway ballast at Morningside, under the parent tree, and saplings on the edge of a mixed-species stand by State Highway 1 just south of Albany.

Eucalyptus macarthurii

Camden woollybutt

This species has been promoted since the 1920s for shelter and ornament in rural areas; there is a good stand in the Metro Club grounds, Mt Albert. The DSIR checklist records it as wild only in the Rotorua and Waikato districts.

Eucalyptus tereticornis

There is a stand at Onepoto Basin, the smaller trees of which perhaps grew up after a scrub fire or similar ground clearance here.

Eucalyptus ficifolia

At 42 Owens Rd (part of the old "Brightside" estate) there is a large specimen of this well-known ornamental species, now showing its age somewhat.

Eucalyptus cinerea

silver dollar gum

Though unrestrained in most other aspects of its behaviour (e.g. precocious flowering and fruiting) this species has not previously been known to naturalize. I have seen young plants twice, near Pukekohe and near Te Kuiti, on volcanic soil road-cuttings. Seedlings occur immediately below the parents while similar cuttings close by are uncolonized.

In this woodland species the lignotuber is particularly well-developed.

Eucalyptus pulchella

white peppermint

There are oldish planted trees very much at home on gumland soil at the western boundary of Waikumete Cemetery. They are appropriate here too in their attenuated appearance (though not a member of the ghost gum group); their trunks twist and lean, the bark is mostly smooth, pale yellow and grey; the narrow drooping leaves smell strongly of peppermint. This Tasmanian mid-altitude species makes only steady growth around Auckland; a pity in one respect as (unlike silver dollar gum) it makes excellent firewood.

Eucalyptus citriodora

lemon-scented gum

As well as Auckland's most-admired tree, on the Parnell Rose Garden lawn, there are three others worth seeing at 42 Owens Rd, in the Domain and at the eastern end of Sainsbury Rd, St Lukes.

Angophora costata

smooth-barked apple

This is a eucalypt-like tree but with flowers that have distinct petals and sepals rather than an operculum, and adult leaves that are opposite. The smooth pinkish brown trunk and limbs and the red-tinged leaves are especially attractive in the late afternoon sun; look for the fine old tree on the north-west side of Mt St John.

Again at Hobsonville above Limeburners Bay there has been some naturalization from an old planting. Burstall and Sale (1984) describe and illustrate the largest tree here (c. 2 m diam. 25 m tall 36 m spread) and say there is "abundant progeny in the area, ranging from large trees to small seedlings".

Seedlings and saplings can still be found here in the manuka areas spared by subdivision, always within fifty metres or so of the large individuals, but there are relatively few trees of pole size. Perhaps only exceptional young plants manage to clear a space for themselves in the scrub and so avoid destruction by fire.

As well as the Mt St John tree not mentioned by Burstall and Sale, there is a very large tree in Parnell across the gully behind Ewelme Cottage.

Tristania conferta

brush box

Tristania differs from Eucalyptus in having sepals and petals distinct and stamens united in bundles; also its shoot has a resting bud, the leaves being arranged in whorls at the end of each season's growth, above the fertile section of shoot.

Resembling a sturdy large-leaved eucalypt this species is commonly planted today as a park and street tree; it is immune to insects, pollards well, and has tough lignotuberous "feet", respected by mower-men.

The largest tree in Auckland and probably in the country is the one that flourishes at 91 St Heliers Bay Rd, at the old Glen Orchard home. It is an unusually narrow-crowned individual c. 13 m tall 1.3 m dbh.

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"TUBEROUS, CORMOUS AND BULBOUS PLANTS"

BY J.S. PATE AND K.W. DIXON

(1982, UNIVERSITY OF WESTERN AUSTRALIA PRESS, 268PP. \$82.00)

Reviewed by R.O. Gardner

This is a beautifully-executed study of a picturesque group of West Australian native plants, those that survive drought by means of underground food or water-storing organs. They are mostly wildflowers like sundews, orchids and lily relatives but include a few trees, shrubs and climbers, a cycad and five pteridophytes. The authors emphasize that their list (213 species in 44 families) is preliminary, the large size of the W.A. flora (c. 7000 spp.) and the inadequacy of current herbarium collections making it certain that more lie undiscovered. Characteristically thorough is their own addendum, which includes three perhaps-new species, a tuberous-rooted seedling (Erythrina vespertilio) and a unique bulb-forming Cyperus.

The plants are not only of "desert" sandplain vegetation but are found from coastal heaths and seasonally-dry swamps to clay breakaways, rock outcrop aprons &c; a few grow in woodland or forest (e.g. Gastrodia). They are otherwise untypical of the flora, drought resistance here being mostly through sclerophylly or ephemerality. Certainly they are strangely-shaped plants and as the jacket watercolour seems to suggest, with habits strange enough to satisfy any Darsh desert or nomad specialist. But the book is of importance to Australian biology generally and is also an outstanding advanced botany text, the very opposite of "dry morphology".

The plants are introduced by their arrangement into life-form groups; bulbs, corms and various types of tuber are elucidated, a piece of ecological work is compactly presented and there is a fascinating account of seedling growth. Memorably-diagrammed and unimprovably written this chapter constitutes a teaching classic.

The long central part of the book is taxonomic description with distribution, habitat notes &c. Much information here on storage organ structure, growth and longevity is new. There are five colour plates showing representative floral types, and twenty-four lucent half-tone plates, excellently labelled and arranged, of nearly all 213 species "in depth", most useful and inspiring to collectors.

Twenty or so taxa (orchids mostly) are found in New Zealand too, and while current N.Z. monocot Floras treat the subject conscientiously some description in Flora I now appears rather insubstantial. Pate and Dixon describe the corm of Isoetes, for example, not just as trilobed but "crescent-shaped, comprising spent corm segment and two current meristematic regions on each side of the central region of mature tissue; seasonal replacement of corm tissues by means of the meristems". Anogramma leptophylla has an "aestivating organ of gametophytic origin ... side by side annual replacement ... terminating with production of