

References

- Blake, S. T. 1977. *Allosyncarpia ternata*, a new genus and species of Myrtaceae subfamily Leptospermoideae from northern Australia. *Austrobaileya* 1: 43-46.
- Briggs, B. G.; Johnson, L. A. S. 1979. Evolution in the Myrtaceae - evidence from inflorescence structure. *Proceedings of the Linnean Society of New South Wales* 102(4): 157-256.
- Carr, D. J.; Carr, S. G. M.; Hyland, B. P. M.; Wilson, P. G.; Ladiges, P. Y. 2002: *Stockwellia quadrifida* (Myrtaceae), a new Australian genus and species in the eucalypt group. *Botanical Journal of the Linnean Society* 139: 415-421.
- Dawson, J. W. 1970. Pacific capsular Myrtaceae. I. Reproductive morphology of *Arillastrum gummiferum* Panch. ex Baillon (New Caledonia). *Blumea* 18: 431-440.
- Dawson, J. W. 1992. Myrtaceae: Leptospermoideae. Vol. 18, *Flore de la Nouvelle-Calédonie et Dépendances*. Museum National d'Histoire Naturelle, Paris.
- Elick, R.; Wilson, P. 2002. The discovery of *Stockwellia* (Myrtaceae). *Australian Systematic Botany Newsletter* 113 (December 2002): 15-16.
- Hill, K. D.; Johnson, L. A. S. 1995. Systematic studies in the eucalypts. 7. A revision of the bloodwoods, genus *Corymbia* (Myrtaceae). *Telopea* 6(2-3): 185-504.
- Johnson, L. A. S. 1972. Evolution and classification in *Eucalyptus*. *Proceedings of the Linnean Society of New South Wales* 97(1): 11-29.
- Johnson, L. A. S.; Briggs, B. G. 1984. Myrtales and Myrtaceae - a phylogenetic analysis. *Annals of the Missouri Botanical Garden* 71: 700-756.
- Ladiges, P. Y.; Humphries, C. J. 1983. A cladistic study of *Arillastrum*, *Angophora* and *Eucalyptus* (Myrtaceae). *Botanical Journal of the Linnean Society* 87: 105-134.
- Ladiges, P. Y.; Udovicic, F.; Drinnan, A. N. 1995. Eucalypt phylogeny - molecules and morphology. *Australian Systematic Botany* 8:483-497.
- Ladiges, P. Y.; Udovicic, F.; Nelson, G. 2003. Australian biogeographical connections and the phylogeny of large genera in the plant family Myrtaceae *Journal of Biogeography*. 30(7): 989-998.
- Sarlin, P. 1954. *Bois et forêts de la Nouvelle Calédonie*. Centre Technique Forestier Tropical, Paris. Publ. du CTFT No. 6.
- Steane, D. A.,; Nicolle, D.; McKinnon, G. E.; Vaillancourt, R. E.; Potts, B. M. 2002. Higher-level relationships among eucalypts are resolved by ITS-sequence data. *Australian Systematic Botany* 15(1): 49-62.
- Udovicic, F.; Ladiges, P. Y. 2000. Informativeness of nuclear and chloroplast DNA regions and the phylogeny of the eucalypts and related genera. *Kew Bulletin* 55: 633-645.
- Udovicic, F.; McFadden, G.I.; and Ladiges, P.Y. 1995. Phylogeny of *Eucalyptus* and *Angophora* based on 5S rDNA spacer sequence data. *Molecular Phylogeny and Evolution* 4: 247-256.
- White, C. T. 1951. Some noteworthy Myrtaceae from the Moluccas, New Guinea, and the Solomon Islands. *Journal Arnold Arboretum Harvard University* 32: 139-149.

Woody plants of the Auckland Domain

Mike Wilcox, Colin Bradshaw & Ewen Cameron

Introduction

The Auckland Domain of 76 ha has an impressive collection of trees and can rightly be claimed to be Auckland's original Botanic Garden. Planting started in the early 1850s in the Government Gardens, centered on the ponds and numerous trees and shrubs were introduced for propagation and trial. Several of the oldest Norfolk Island pines (*Araucaria heterophylla*) and a giant sequoia (*Sequoiadendron giganteum*) were planted by the visiting Duke of Edinburgh in 1869 (Adam 2004). There are both formally planted areas and wild areas on the fringes which have an interesting vegetation of both natural and planted trees and shrubs, native and exotic.

In this account we concentrate on the woody flora, with only passing reference to herbaceous plants and ferns. Surprisingly little has been documented about the Auckland Domain's flora, apart from mention of a few particular species in past ABS Newsletters or Journals. Over 650 specimens have been vouchered over the years in the Auckland Museum herbarium (AK).

Auckland Botanical Society visit on 20 March 2004

Our group met at the Band Rotunda at 10 am, and had a busy excursion looking at trees in the vicinity of the Band Rotunda-Formal Gardens-Valkyrie Fountain, the nursery, the bush areas of the Glade and Lovers

Walk, the Domain Walk and *Araucaria* grove, finishing at 3 pm at the Wintergarden. Those taking part were: Daphne Blackshaw, Quentin Blackshaw, Colin Bradshaw (co-leader), Elizabeth Bowie, Margaret Brothers, Phil Brown, Viv Brown, Jan Butcher, Ewen Cameron, Pam Carmont, Leonie Clunie, Nigel Clunie, Brian Cumber, Colleen Foster, Kaye Haslett, Jean Hatch, Rosa Henderson, Annette Lindsay, Morag McDonald, Alistair McArthur, Carol McSweeney, Gary McSweeney, Marjorie Newhook, Juliet Richmond, Bronwen Rouse, Doug Shaw, Clive Shirley, Malcolm Simpson, Beverley Sinclair, Shirley Tomlinson, Alison Wesley, Barbara White, Mike Wilcox (co-leader), Tony Williams, Maureen Young.

Band Rotunda-Formal Gardens-Valkyrie Fountain

This part of the Domain has undoubtedly the richest variety of planted trees. Among the many fine specimens here can be found radiata pine (*Pinus radiata*), kanuka (*Kunzea ericoides*), puka (*Griselinia lucida*), hybrid wharangi (*Melicope x mantellii*), wavy-leaved tanguru (*Olearia angulata*), northern rata (*Metrosideros robusta*), pohutukawa (*Metrosideros excelsa*), Queensland kauri (*Agathis australis*), American holly (*Ilex opaca*), hornbeam (*Carpinus betulus*), Atlas cedar (*Cedrus atlantica*), Huntingdon elm (*Ulmus xvegeta*), European ash (*Fraxinus excelsior*), evergreen magnolia (*Magnolia grandiflora*), crape myrtle (*Lagerstroemia indica*), Cape chestnut

(*Calodendrum capense*), Chinese fan palm (*Livistona chinensis*), lemon gum (*Corymbia citriodora*), camphor tree (*Cinnamomum camphora*), maidenhair tree (*Ginkgo biloba*), pagoda tree (*Styphnolobium japonica* syn. *Sophora japonica*), pin oak (*Quercus palustris*), Norway spruce (*Picea abies*), dawn redwood (*Metasequoia glyptostroboides*), lacebark tree (*Brachychiton discolor*), kurrajong (*Brachychiton populneus*), wheel tree (*Trochodendron aralioides*), tree bougainvillea (*Bougainvillea glabra*), *Cassia leptophylla*, *Catalpa speciosa*, *Bambusa balcooa* (Gardner 1995), and *Butia capitata* – on which African honeysuckle (*Halleria lucida*) has become naturalised (Cameron 1996).

The three American holly trees were planted by US Vice-President Richard Nixon in October 1953. He brought the trees with him as a gift to Auckland from the American Holly Society. The two Huntingdon elms are very fine trees, though one was quite battered damaged in this year's February storms. An outstanding native tree is a very large specimen of *Pittosporum obcordatum*, not known in the Auckland region, but plentiful in the Hikurangi Swamp north of Whangarei, and in remnant kahikatea forest on the banks of the Awanui River, Kaitaia.

In addition to the spaced trees on the lawns there are borders packed full of interesting perennials, shrubs, and small trees, some noteworthy ones being bois tabou (*Fagraea berteriana* syn. *F. schlechteri*), African honeysuckle (*Halleria lucida*) the flowers of which attract tui in the autumn, witch hazel (*Hamamelis virginiana*), butcher's broom (*Ruscus aculeatus*), forest bell bush (*Mackaya bella*), Mexican tree fuchsia (*Fuchsia paniculata*), Chinese parasol tree (*Firmiana simplex*), tall cigar bush (*Cuphea micropetala*), blue butterfly bush (*Clerodendron ugandense*), cross berry (*Grewia occidentalis*), pink ball (*Dombeya wallichii*), species of *Brugmansia* and *Iochroma* of the Solanaceae, tree gardenia (*Rothmannia globosa*), tree jasmine (*Schrebera alata*), *Plectranthus mahonii* - with a fine show of violet-coloured flowers in autumn, lavender tree (*Heteropyxis natalensis*), *Cavendishia acuminata* and *Jovellana violacea*.

Totara Grove

The Totara Grove is at the junction of Domain Drive and Lower Domain Drive. There are some thirty totara (*Podocarpus totara*) trees planted together, forming an attractive grove.

Domain Nursery

Several of the outstanding trees in the Domain were grown from seedlings raised in a nursery originally set up in the Domain in 1841 to grow and distribute European plants and trees to the whole of the city. Today, the nursery supplies plants for displays in the Wintergarden, flower borders and shrubberies throughout the Domain. There are many subtropical and tropical plants here of considerable interest such

as kava (*Piper methysticum*), climbing ylang ylang (*Artabotrys hexapetalus*), mammee apple (*Mammea americana*), neem tree (*Azadirachta indica*), *Obetia ficifolia* (a tree of the Urticaceae from Réunion), mouse-trap tree (*Uncarina grandidier*) - of the family Pedaliaceae from Madagascar, hedge thorn (*Carissa bispinosa*) – a spiny South African shrub with red, pepper-like edible fruits, Transvaal hard pear (*Olinia emarginata*), red star-apple (*Diospyros lycioides*), dysentery bush (*Alyxia buxifolia*), pendulous-fruited jointfir (*Gnetum pendulum*), *Hibiscus eenfeldtiana*, sapote (*Pouteria sapota*), *Syzygium wilsonii*, calasacha (*Carica quercifolia*), *Medinilla magnificus* (of the Melastomataceae, from the Philippines), *Polymeria calycina* (an Australian climber of the Convolvulaceae), *Gliricidia maculata*, *Hypocalyptus sophoroides* – a South African legume, *Pittosporum formosanum* var. *hainanensis*, and *Sclerocarya birrea* subsp. *caffra* – the African marula tree whose fruit gives the flavour to Amarula liqueur.

Adjacent to the nursery can be found fine specimens of blackbutt (*Eucalyptus pilularis*), brown pine (*Podocarpus elatus*), brush cherry (*Syzygium australe*), and Fortune's plum-yew (*Cephalotaxus fortunei*).

Lovers Walk and Glade Walk

Lovers Walk passes beside some shaded, tuff cliffs on which grow three kinds of maidenhair fern – *Adiantum diaphanum*, *Adiantum hispidulum*, and the beautiful, large South American species, the Delta maidenhair fern *Adiantum raddianum*. Another introduced fern, *Pteris cretica*, can also be found here. A feature of the Glade Walk is the group of native conifers – kauri, rimu, totara, and tanekaha – planted in 1865. The kauri (16 surviving in 1963) are the oldest, continuously measured of any planted group in New Zealand, and have been measured in 1905, 1920, 1937, 1952, and 1963 (the latter by Mike Wilcox when he was a Technical Trainee with the Forest Service). They are mentioned by Reed (1953, 1964) and are now 139 years old. Exciting finds were a fruiting specimen of the New Guinea dinner plate fig (*Ficus dammaropsis*), and the South African mountain cabbage tree (*Cussonia paniculata*). There are impressive oaks (*Quercus robur*), puriri (*Vitex lucens*), Illawarra flame tree (*Brachychiton acerifolius*), sycamore (*Acer pseudoplatanus*), floss-silk tree (*Chorisia speciosa*), two enormous trees of deodar cedar (*Cedrus deodara*), and a spectacular colony of Swiss cheese plant (*Monstera deliciosa*) with very long cord-like aerial roots. The coastal native tree, whau (*Entelea arborescens*) is abundantly regenerating, following the opening up of the forest with the removal of numerous tree privets a few years ago.

A good variety of ferns grow beside the stream which flows through the bush: *Blechnum chambersii*, *Lastreopsis glabella*, and *Pneumatopteris pennigera*, with attractive patches of the umbrella moss *Hypopterygium rotulatum* and *Fissidens taxifolius*.

Centennial Walkway and Cherry Grove

There is a varied collection of native trees and shrubs bordering the walkway. Further down there are three kinds of kauri growing together for comparison – *Agathis australis* from New Zealand, *Agathis moorei* from New Caledonia, and *Agathis robusta* from Australia. Pohutukawa (*Metrosideros excelsa*, *M. kermadecensis*) line the main path, and there are impressive trees of hard beech (*Nothofagus truncata*), and kawaka (*Libocedrus plumosa*). A feature of the cherry grove is the pathway avenue of *Prunus* 'Awanui', a fine, pink-flowered cultivar at its best in September, and the August-flowering Taiwanese cherry (*Prunus campanulata*).

Domain Walk

The northern fringes of the Domain have several walking tracks through native bush, most of which has been planted and which has various introduced species. Karaka (*Corynocarpus laevigatus*), nikau (*Rhopalostylis sapida*), tree privet (*Ligustrum lucidum*) and pedunculate oak (*Quercus robur*) are the dominant trees in the Domain Walk, with large emergent cottonwood (*Populus deltoides*). Karaka undoubtedly dates back to early Maori habitation of this area. Nikau and tree privet are also wild, together with the native understorey shrubs – mahoe (*Meliccytus ramiflorus*), mapou (*Myrsine australis*), hangehange (*Geniostoma ligustrifolium*) and coastal karamu (*Coproma macrocarpa* subsp. *minor*). There are several old trees of black locust (*Robinia pseudoacacia*), regenerating from root suckers. The bush has a great abundance of the sedges *Carex dissita* and *Carex lambertiana*, together with *Gahnia lacera* and *Uncinia uncinata*.

An outstanding feature of the Domain Walk is a grove of large araucaria trees, the species represented being Norfolk Island pine (*Araucaria heterophylla*) of enormous proportions and exemplary form, Cook pine (*A. columnaris*), and bunya (*A. bidwillii*), the latter naturally regenerating. Huge fallen bunya cones can sometimes be found on the ground in late February-early March, and our group was fortunate to find three intact cones (Figure 1). We also found specimens of an Asian tree *Ternstroemia gymnanthera*, and *Mahonia fortunei*.

Pukekawa

Pukekawa is the highest hill of the domain, where the Museum is located. There are trees of interest, particularly to the south of the Museum. Examples can be found in a collection of conifers of *Pinus canariensis*, *Pinus pinea*, *Pinus thunbergii*, *P. elliotii*, *Widdringtonia schwarzii* and *Podocarpus henckelii* (male). The Bot Soc group saw a fine specimen of the South African tree *Cunonia capensis* in flower – it is the one illustrated in Salmon (1999).

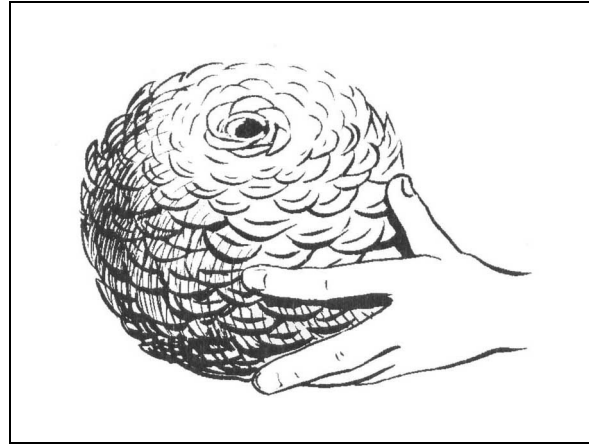


Figure 1. One of three large bunya cones found intact on the ground. Drawn by Shirley Tomlinson.

Sensory Gardens

Emphasis in these gardens is on aromatic plants. Trees and shrubs here are *Agonis flexuosa*, *Agonis juniperina*, *Artemisa arborescens*, *Backhousia citriodora*, *Choysia ternata*, *Choysia dumosa*, *Cistus creticus*, *Echium candicans*, *Lavandula angustifolia*, *Michelia figo*, *Pelargonium* sp., *Rosmarinus officinalis* and *Salvia uliginosa*. There is a specimen of wild olive (*Olea europaea* var. *oleaster*), a small spinose tree with small (0.5-1 cm long) ovate leaves, of the family Oleaceae from the Mediterranean region.

Magnolia Gardens

These gardens were created in the 1980s, and have several kinds of magnolia planted in an attractive setting. Species and cultivars represented are: *Magnolia campbellii*, *Magnolia* 'Galaxy', *Magnolia* 'Heaven Scent', *Magnolia sieboldii*, *Magnolia* x *loebneri* 'Leonard Messel', *Magnolia liliiflora* 'Nigra', and *Magnolia grandiflora*.

Wintergarden

This complex consists of two display glasshouses, one containing temperate plants (the Cool House, 1921), the other containing tropical plants (the Tropical House, 1930); a formal courtyard with a pond in the centre; and the FERNZ Fernery within an old scoria quarry. Growing wild in the calcareous mortar of the brickwork of the courtyard can be found an introduced maidenhair fern, the Venus hair-fern *Adiantum capillus-veneris*. This fern is native to Europe and the USA, where it is strictly confined to vertical limestone faces. Sandpaper vine (*Petrea volubilis*) grows in the courtyard. It flowers in November. Other climbers here are herald's trumpet (*Beaumontia grandiflora*) and hiccup nut (*Combretum bracteosa*). Cats claw creeper (*Macfadyena unguis-cati*) has been removed because the risk of it becoming a weed.

The new pergola at the fernery entrance was constructed in karri (*Eucalyptus diversicolor*) – a Western Australian timber.

The Cool House has a fine specimen of *Inga edulis*, with paired canoe-shaped pods and pinnate leaves with a markedly winged petiole. Buddist hand (*Citrus medica* var. *sarcodactyla*), *Chamaerops humilis*, cabelluda (*Myrcia tomentosa*), bladder cherry (*Physalis alkekengi*), *Radermachera sinica*, *Alberta magna*, *Tibouchina laxa*, and several *Ficus barteri* are other plants of interest. Climbing high on the outside of the Cool House is the cactus *Hylocereus undatus*.

The Tropical House has numerous pitcher plants (*Nepenthes*) and orchids, and specimens of cocoa tree (*Theobroma cacao*), tamarind (*Tamarindus indica*), *Ficus avi-avi*, miraculous berry (*Synsepalum dulcificum*) – a West African tree of the Sapotaceae with berries that cause sour and salty food to taste sweet, calabash tree (*Crescentia cujete*), rubber tree (*Hevea brasiliensis*), yellow poinciana (*Peltophorum pterocarpum*), allspice (*Pimenta dioica*), grease nut (*Hernandia bivalvis*), a very large example of *Cycas circinalis* - about to go through the roof!, a fish-tail palm (*Caryota rumphiana*), and the dramatic water lily, *Victoria amazonica*.

The FERNZ fernery has wet, intermediate and dry habitat sections featuring a collection of native ferns. Exotic intruders are Cretan brake (*Pteris cretica*), the Asian gemniferous spikemoss (*Selaginella moellendorffii*) and mat spikemoss (*S. kraussiana*), which are abundantly naturalised. The Asian gemniferous spikemoss is green in the summer, but reddens in the winter.

Gum tree hill

There is a prominent cluster of eucalypts bordering George Street at the southern (Newmarket) end of the Domain, planted in the 1920s. Tallowwood (*Eucalyptus microcorys*) is the dominant species with c. 25 fine specimens. This eucalypt is distinguished by its flaky fibrous bark and dense crown. Other eucalypts here are messmate (*E. obliqua*), Sydney blue gum (*E. saligna*), swamp gum (*E. ovata*), yellow stringybark (*E. muelleriana*), white stringybark (*E. globoidea*), blue gum (*E. globulus*), bundy (*E. goniocalyx*), spotted gum (*Corymbia maculata*) and marri (*Corymbia calophylla*) – this latter suffering from a debilitating leaf disorder. Turpentine (*Syncarpia glomulifera*) can also be found on Gum Tree Hill, together with numerous small trees of blackwood (*Acacia melanoxylon*).

Futher reading

- Adam, J. 2004. Forever green: a midsummer night's dream. In: Bielecki, R. L.; Wilcox, M. D. *The Araucariaceae*. The International Dendrology Society (in press).
- Boffa Miskell Partners Ltd. 1993. *Auckland Domain Management Plan 1993*. Auckland City Council.
- Cameron, E. K. 1996. African honeysuckle (*Halleria lucida*) naturalised. *Auckland Botanical Society Journal* 52(1):48-49.
- Cameron, E., Hayward, B., Murdoch, G. 1997. *A field guide to Auckland*. Godwit Publishing Ltd, Auckland.
- Esler, A. E.; Goodey, M. 1997. *Erythrina lysistemon*. *Auckland Botanical Society Journal* 52(1): 39.
- Gardner, R. O. 1995. Six harmless exotics. *Auckland Botanical Society Journal* 50(2): 78-80.
- Reed, A. H. 1953. *Story of the kauri*. A. H. & A. W. Reed, Wellington.
- Reed, A. H. 1964. *The new story of the kauri*. Third edition. A. H. & A. W. Reed, Wellington.
- Salmon, J. T. 1999. *Exotic trees. The broadleaves*. Reed Books, Auckland.
- Watters, W. S. 1938. *The trees of Auckland City and its environs*. (hand-written) Thesis, National Diploma of Horticulture.
- Wilcox, M.; Inglis, C. 2003. Auckland's elms. *Auckland Botanical Society Journal* 58(1): 38-45.

Oak Grove

There is an impressive woodland-style grove of pedunculate oak (*Quercus robur*) near the Grandstand (1899) next to Carlton Gore Road.

Pukekaroa

This is the prominent knoll separating the two main sportsfields. A carved Maori memorial palisade fence encloses a totara tree planted by Princess Te Puea on Centennial Arbor Day in 1940 on Pukekaroa in memory of Maori leader Potatu te WheroWhero who made peace with neighbouring tribes on this site a hundred years earlier. Apart from the totara, Pukekaroa has several fine London planes (*Platanus Xacerifolia*), two big European ash (*Fraxinus excelsior*), several *Quercus robur*, a large puriri, karaka, and pin oak (*Quercus palustris*). Nearby is a grove of Yunnan poplar (*Populus yunnanensis*), together with some golden wych elms (*Ulmus glabra* 'Lutescens'). Emergent above the native shrubbery behind the Wintergarden is a very large honey locust (*Gleditsia triacanthos*), its trunk resplendent in vicious thorns.

Duck Ponds

This part of the Domain was the site of the very earliest plantings in the original Auckland Botanic Gardens. The ponds are fed by natural springs and drain away between the Centennial Walkway and Lovers Walk to Stanley Street. Some of the trees here of special interest are Norfolk Island pine (*Araucaria heterophylla*), Queensland kauri (*Agathis robusta*), tuckeroo (*Cupaniopsis anacardioides*), *Erythrina lysistemon* (Esler & Goodey 1996), Chinese Judas tree (*Cercis chinensis*), Chinese hackberry tree (*Celtis biondii*) [previously misidentified as *C. sinensis* (Wilcox & Inglis 2003)], gordonia (*Polyspora axillaris*), port wine magnolia (*Michelia figo*), tupelo (*Nyssa sylvatica*), floss-silk tree (*Chorisia speciosa*) with spiny bark and large pinkish-red flowers in April, *Aloe bainesii*, and *Tibouchina mollis*. On either side of the small fountain can be found two small spreading trees of the kei apple (*Dovyalis caffra*), from South Africa. It has prominent spines, and edible yellow fruits. Another plant of considerable interest near the Duck Ponds is the fine flax-like iris, the wedding lily (*Dietes robinsoniana*) – a native of Lord Howe Island. It has creamy flowers in spring. Near the Ponds parking area are numbers of impressive *Phoenix canariensis*, often supporting wild Moreton Bay fig plants in their leafy heads.

List of woody plants in the Auckland Domain

| A: Gymnosperms | | | |
|---|---|--------------------------------|----------------------|
| Araucariaceae | <i>Agathis australis</i> | kauri | New Zealand |
| | <i>Agathis lanceolata</i> | kaori | New Caledonia |
| | <i>Agathis moorei</i> | kaori blanc | New Caledonia |
| | <i>Agathis robusta</i> | Queensland kauri | Australia |
| | <i>Araucaria bidwillii</i> | bunya | Australia (nat.) |
| | <i>Araucaria columnaris</i> | Cook pine | New Caledonia |
| | <i>Araucaria cunninghamii</i> | hoop pine | Australia |
| | <i>Araucaria heterophylla</i> | Norfolk Island pine | Norfolk Island |
| Cephalotaxaceae | <i>Cephalotaxus fortunei</i> | Fortune's plum yew | China |
| | <i>Cephalotaxus harringtonii</i> | cowtail pine | Japan, Korea |
| | <i>Cephalotaxus harringtonii</i> 'Fastigiata' | fastigate cowtail pine | Cultivar |
| Cupressaceae (incl. Taxodiaceae) | <i>Chamaecyparis lawsoniana</i> | lawsoniana, Lawson's cypress | USA |
| | <i>Cryptomeria japonica</i> | Japanese cedar | Japan, China |
| | <i>Cryptomeria japonica</i> 'Elegans' | weeping Japanese cedar | Cultivar |
| | <i>Cunninghamia lanceolata</i> | Chinese fir | China |
| | <i>Cupressus macrocarpa</i> | macrocarpa, Monterey cypress | USA |
| | <i>Cupressus macrocarpa</i> 'Saligna' | weeping macrocarpa | Cultivar |
| | <i>Cupressus sempervirens</i> | Mediterranean cypress | Greece, Turkey |
| | <i>Cupressus torulosa</i> | Himalayan cypress | India, Nepal |
| | <i>Juniperus chinensis</i> 'Kaizuka' | kaizuka Chinese juniper | Cultivar |
| | <i>Libocedrus plumosa</i> | kawaka | New Zealand |
| | <i>Metasequoia glyptostroboides</i> | dawn redwood | China |
| | <i>Sequoia sempervirens</i> | coast redwood | USA |
| | <i>Sequoiadendron giganteum</i> | giant sequoia, Sierra redwood | USA |
| | <i>Taxodium distichum</i> var. <i>distichum</i> | swamp cypress, bald cypress | USA |
| <i>Thuja plicata</i> | western red cedar | USA, Canada | |
| <i>Widdringtonia schwarzii</i> | Willowmore cypress | South Africa | |
| Ginkgoaceae | <i>Ginkgo biloba</i> | maidenhair tree | China |
| Pinaceae | <i>Cedrus atlantica</i> | Atlas cedar | Morocco |
| | <i>Cedrus deodara</i> | deodar | India |
| | <i>Cedrus libani</i> | cedar of Lebanon, Taurus cedar | Turkey, Lebanon |
| | <i>Picea abies</i> | Norway spruce | Europe |
| | <i>Pinus canariensis</i> | Canary Island pine | Canary Islands |
| | <i>Pinus elliotii</i> | slash pine | USA |
| | <i>Pinus halepensis</i> | Aleppo pine | Mediterranean region |
| | <i>Pinus patula</i> | weeping Mexican pine | Mexico |
| | <i>Pinus pinea</i> | stone pine | Europe, Turkey |
| | <i>Pinus radiata</i> | radiata pine, Monterey pine | USA |
| | <i>Pinus thunbergii</i> | Japanese black pine | Japan |
| Podocarpaceae | <i>Dacrycarpus dacrydioides</i> | kahikatea | New Zealand |
| | <i>Dacrydium cupressinum</i> | rimu | New Zealand |
| | <i>Phyllocladus trichomanoides</i> | tanekaha | New Zealand |
| | <i>Podocarpus elatus</i> | brown pine | Australia |
| | <i>Podocarpus henckelii</i> | Natal yellowwood | South Africa |

| | | | |
|---------------------------|---|---------------------------------|-----------------------------|
| | <i>Podocarpus totara</i> | totara | New Zealand |
| | <i>Prumnopitys ferruginea</i> | miro | New Zealand |
| Taxaceae | <i>Taxus baccata</i> 'Fastigiata' | Irish yew | Cultivar |
| B: Dicots | | | |
| Acanthaceae | <i>Mackaya bella</i> | forest bell bush | South Africa |
| | <i>Thunbergia grandiflora</i> | Bengal trumpet | India |
| | <i>Thunbergia mysorensis</i> | clock vine | India |
| Altingiaceae | <i>Liquidambar styraciflua</i> | sweet gum | USA, Mexico |
| Anacardiaceae | <i>Schinus molle</i> | pepper tree | South America |
| | <i>Schinus terebinthifolius</i> | Brazilian mastic tree | Brazil |
| Apocynaceae | <i>Carissa macrocarpa</i> | Natal plum, large numnum | South Africa |
| | <i>Strophanthus preusii</i> | poison rope | South Africa |
| Aquifoliaceae | <i>Ilex opaca</i> | American holly | USA |
| Araliaceae | <i>Cussonia paniculata</i> | spiked cabbage tree | South Africa |
| | <i>Hedera helix</i> | ivy | Europe |
| | <i>Meryta sinclairii</i> | puka | New Zealand |
| | <i>Pseudopanax arboreus</i> | five-finger | New Zealand |
| | <i>Pseudopanax crassifolius</i> | lancewood | New Zealand |
| | <i>Pseudopanax laetus</i> | | New Zealand |
| | <i>Pseudopanax lessonii</i> | horoeke, coastal lancewood | New Zealand |
| | <i>Schefflera actinophylla</i> | umbrella tree | Australia, PNG |
| | <i>Schefflera digitata</i> | pate | New Zealand |
| Argophyllaceae | <i>Corokia xvirgata</i> | hybrid korokia | New Zealand |
| Asteraceae | <i>Artemisia arborescens</i> | hedge artemisia | Mediterranean region |
| | <i>Bartlettina sordida</i> | bartlettina | Mexico |
| | <i>Helichrysum petiolare</i> | | South Africa |
| | <i>Olearia angulata</i> | wavy-leaved tanguru | New Zealand |
| | <i>Olearia paniculata</i> | akiraho | New Zealand |
| | <i>Senecio grandifolius</i> | Mexican tree groundsel | Mexico |
| Atherospermataceae | <i>Laurelia novae-zelandiae</i> | pukatea | New Zealand |
| Berberidaceae | <i>Berberis thunbergii</i> 'Atropurpurea' | purple-leaved Japanese barberry | Japan |
| | <i>Mahonia fortunei</i> | mahonia | China |
| | <i>Mahonia lomariifolia</i> | mahonia | China |
| Betulaceae | <i>Alnus glutinosa</i> | common alder | Europe, Turkey |
| | <i>Betula pendula</i> | silver birch | Europe |
| | <i>Carpinus betulus</i> | hornbeam | Europe, Turkey, Iran |
| Bignoniaceae | <i>Catalpa speciosa</i> | northern catalpa | USA |
| | <i>Markhamia ?lutea</i> | markhamia | East Africa |
| | <i>Pandorea pandorana</i> | wonga wonga vine | Australia |
| | <i>Tecoma xsmithii</i> | yellow bells | Tropical America |
| | <i>Tecomanthe dendrophylla</i> | | Indonesia, PNG, Solomon Is. |

| | | | |
|---------------------------------------|--|---|--|
| Caprifoliaceae | <i>Lonicera japonica</i> <i>Viburnum xburkwoodii</i> <i>Viburnum macrocephalum</i> | Japanese honeysuckle pink viburnum Chinese snowball tree | Japan Cultivar China |
| Celastraceae | <i>Euonymus japonicus</i> <i>Euonymus pendulus</i> (Nursery) | Japanese spindle tree Himalayan spindle berry tree | Japan Himalayas |
| Celtidaceae | <i>Celtis biondii</i> | Chinese hackberry | China, Japan, Korea |
| Clusiaceae | <i>Hypericum androsaemum</i> | tutsan | Europe |
| Combretaceae | <i>Combretum bracteosum</i> | hiccup nut | South Africa |
| Cornaceae | <i>Nyssa sylvatica</i> | tupelo | USA |
| Corynocarpaceae | <i>Corynocarpus laevigatus</i> | karaka | New Zealand (wild) |
| Cunoniaceae | <i>Ceratopetalum gummiferum</i> <i>Cunonia capensis</i> <i>Davidsonia pruriens</i> | NSW Christmas tree red els Davidson's plum | Australia South Africa Australia |
| Ebenaceae | <i>Diospyros whyteana</i> | wild blackbark | South Africa |
| Elaeagnaceae | <i>Elaeagnus xreflexa</i> | elaeanus | Japan (wild) |
| Elaeocarpaceae | <i>Aristotelia serrata</i> | wineberry | New Zealand |
| Ericaceae | <i>Cavendishia acuminata</i> <i>Rhododendron arboreum</i> | cavendishia tree rhododendron | Andes, South America Himalayas |
| Euphorbiaceae | <i>Homalanthus populifolius</i> <i>Mallotus japonicus</i> | Queensland poplar mallotus | Australia, Melanesia China, Japan, Korea |
| Fabaceae: Caesalpinioideae | <i>Bauhinia purpurea</i> <i>Cassia leptophylla</i> <i>Cercis chinensis</i> <i>Gleditsia triacanthos</i> | butterfly bush, orchid tree gold medallion Chinese Judas tree honey locust | India, SE Asia Brazil China USA |
| Fabaceae: Mimosoideae | <i>Acacia longifolia</i> <i>Acacia melanoxylon</i> <i>Albizia julibrissin</i> <i>Calliandra</i> 'Blushing Pixie' <i>Calliandra brevipes</i> <i>Calliandra portoricensis</i> | Sydney golden wattle blackwood silk tree tassel-flower tassel-flower white tassel-flower | Australia Australia Asia Cultivar South America West Indies, Central America |
| Fabaceae: Faboideae | <i>Calpurnia aurea</i> (syn. <i>C. lasiogyne</i>) <i>Carmichaelia australis</i> <i>Erythrina lysistemon</i> <i>Erythrina crista-galli</i> <i>Erythrina xsykesii</i> <i>Robinia pseudoacacia</i> <i>Sophora fulvida</i> <i>Sophora microphylla</i> <i>Sophora tetraptera</i> | Natal laburnum native broom Transvaal kaffirboom Brazilian coral tree, ceibo coral tree black locust Anawhata kowhai kowhai large-leaved kowhai | South Africa New Zealand South Africa Brazil, Argentina, Uruguay Cultivar USA (wild) New Zealand New Zealand New Zealand |

| | | | |
|-------------------------|--|------------------------|------------------------------|
| | <i>Styphnolobium japonicum</i> (syn. <i>Sophora japonica</i>) | pagoda tree | Japan |
| | <i>Wisteria floribunda</i> | Japanese wisteria | Japan |
| Fagaceae | <i>Fagus sylvatica</i> | European beech | Europe |
| | <i>Quercus canariensis</i> | Algerian oak | Spain, Portugal, Nth Africa |
| | <i>Quercus cerris</i> | Turkey oak | Turkey |
| | <i>Quercus coccinea</i> | scarlet oak | USA |
| | <i>Quercus palustris</i> | pin oak | USA |
| | <i>Quercus robur</i> | pedunculate oak | Europe |
| | <i>Quercus suber</i> | cork oak | Southern Europe, Nth Africa |
| Gentianaceae | <i>Fagraea berteroana</i> (syn. <i>F. schlechteri</i>) | bois tabou | New Caledonia |
| Griselinaceae | <i>Griselinia lucida</i> | puka | New Zealand |
| Hamamelidaceae | <i>Hamamelis virginiana</i> | witch hazel | USA |
| | <i>Parrotia persica</i> | Persian ironwood | Iran |
| Heteropyxidaceae | <i>Heteropyxis natalensis</i> | lavender tree | South Africa, Zimbabwe |
| Hydrangeaceae | <i>Hydrangea macrophylla</i> | hydrangea | Japan |
| Lamiaceae | <i>Plectranthus mahonii</i> | | Africa |
| | <i>Rosmarinus officinalis</i> | rosemary | Southern Europe |
| | <i>Salvia leucantha</i> | Mexican sage bush | Mexico |
| Lauraceae | <i>Beilschmiedia tarairi</i> | taraire | New Zealand |
| | <i>Beilschmiedia tawa</i> | tawa | New Zealand |
| | <i>Cinnamomum camphora</i> | camphor tree | China, Taiwan |
| | <i>Laurus nobilis</i> | bay laurel | Southern Europe, Turkey |
| Loganiaceae | <i>Geniostoma ligustrifolium</i> | hangehange | New Zealand |
| Lythraceae | <i>Cuphea micropetala</i> | tall cigar bush | Mexico |
| | <i>Galpinia transvaalica</i> | wild pride-of-India | South Africa |
| | <i>Heimia salicifolia</i> | | Mexico |
| | <i>Lagerstroemia indica</i> | crape myrtle | Himalayas |
| Magnoliaceae | <i>Liriodendron tulipifera</i> | tulip tree | USA |
| | <i>Magnolia campbellii</i> | pink tulip tree | China |
| | <i>Magnolia grandiflora</i> | evergreen magnolia | USA |
| | <i>Magnolia sieboldii</i> | | China, Japan, Korea |
| | <i>Magnolia x soulangeana</i> | hybrid magnolia | China, cult. |
| | <i>Michelia champaca</i> | champak | India |
| | <i>Michelia doltsopa</i> | South Asia michelia | Nepal, India, Myanmar, Nepal |
| | <i>Michelia figo</i> | port wine magnolia | China |
| Malvaceae | <i>Abutilon darwinii</i> x <i>A. striatum</i> cv. 'Silver Belle' | hybrid Chinese lantern | Cultivar |
| | <i>Brachychiton acerifolius</i> | Illawarra flame tree | Australia |
| | <i>Brachychiton discolor</i> | brush kurrajong | Australia |

| | | | |
|------------------------|--|-------------------------------|-------------------------|
| | <i>Brachychiton populneus</i> | Kurrajong | Australia |
| | <i>Brachychiton rupestris</i> | Queensland bottle tree | Australia |
| | <i>Chorisia speciosa</i> | floss-silk tree | Argentina, Brazil |
| | <i>Dombeya wallichii</i> | pink ball | Madagascar, East Africa |
| | <i>Entelea arborescens</i> | whau | New Zealand (wild) |
| | <i>Firmiana simplex</i> | Chinese parasol tree | China |
| | <i>Grewia occidentalis</i> | cross berry | Southern Africa |
| | <i>Hibiscus syriacus</i> | shrubby althea | Middle East |
| | <i>Hoheria populnea</i> | lacebark | New Zealand |
| | <i>Malvaviscus arboreus</i> | Turk's cap | Tropical America |
| | <i>Plagianthus regius</i> | lowland ribbonwood | New Zealand |
| | <i>Tilia xeuropaea</i> | lime tree | Europe |
| Melastomataceae | <i>Tibouchina mollis</i> | | Central America |
| | <i>Tibouchina urvilleana</i> | glory bush, lasiandra | Brazil |
| Meliaceae | <i>Dysoxylum spectabile</i> | kohekohe | New Zealand (wild) |
| | <i>Melia azedarach</i> | China berry, Indian bead tree | Asia |
| | <i>Toona ciliata</i> var. <i>australis</i> | red cedar | Australia |
| | <i>Toona sinensis</i> 'Flamingo' | pink toon tree | China |
| Monimiaceae | <i>Hedycarya arborea</i> | pigeonwood | New Zealand |
| Moraceae | <i>Ficus dammaropsis</i> | dinner plate fig | Papua New Guinea |
| | <i>Ficus macrophylla</i> | Moreton Bay fig | Australia (wild) |
| | <i>Ficus pumila</i> | creeping fig | China, SE Asia |
| Myrsinaceae | <i>Myrsine australis</i> | mapou | New Zealand (wild) |
| | <i>Myrsine salicina</i> | toro | New Zealand |
| Myrtaceae | <i>Acmena smithii</i> | lilly pilly, monkey apple | Australia (wild) |
| | <i>Agonis flexuosa</i> | willow myrtle | Australia (WA) |
| | <i>Agonis juniperina</i> | juniper myrtle | Australia (WA) |
| | <i>Backhousia citriodora</i> | lemon ironwood | Australia (Qld) |
| | <i>Callistemon salignus</i> | willow bottlebrush | Australia |
| | <i>Corymbia calophylla</i> | marri | Australia (Qld) |
| | <i>Corymbia citriodora</i> | lemon-scented gum | Australia |
| | <i>Corymbia ficifolia</i> | red flowering gum | Australia (WA) |
| | <i>Corymbia maculata</i> | spotted gum | Australia |
| | <i>Kunzea ericoides</i> | kanuka | New Zealand |
| | <i>Eucalyptus botryoides</i> | bangalay | Australia |
| | <i>Eucalyptus cinerea</i> | silver dollar gum | Australia |
| | <i>Eucalyptus globoidea</i> | white stringybark | Australia |
| | <i>Eucalyptus globulus</i> | blue gum | Australia |
| | <i>Eucalyptus goniocalyx</i> | bundy | Australia |
| | <i>Eucalyptus macarthurii</i> | Camden woollybutt | Australia |
| | <i>Eucalyptus microcorys</i> | tallowwood | Australia |
| | <i>Eucalyptus muelleriana</i> | yellow stringybark | Australia |
| | <i>Eucalyptus obliqua</i> | messmate | Australia |
| | <i>Eucalyptus ovata</i> | swamp gum | Australia |
| | <i>Eucalyptus pilularis</i> | blackbutt | Australia |
| | <i>Eucalyptus saligna</i> | Sydney blue gum | Australia |
| | <i>Eucalyptus viminalis</i> | mannan gum | Australia |
| | <i>Lophostemon confertus</i> | brush box | Australia |
| | <i>Melaleuca armillaris</i> | bracelet honey myrtle | Australia |
| | <i>Melaleuca hypericifolia</i> | hillock bush | Australia |

| | | | |
|-----------------------|--|------------------------------|--------------------------|
| | <i>Melaleuca linariifolia</i> | snow-in summer | Australia |
| | <i>Metrosideros excelsa</i> | pohutukawa | New Zealand |
| | <i>Metrosideros excelsa</i> x <i>M. robusta</i> 'Mistral' | hybrid rata | New Zealand, cultivar |
| | <i>Metrosideros kermadecensis</i> | Kermadec poutukawa | New Zealand |
| | <i>Metrosideros robusta</i> | northern rata | New Zealand |
| | <i>Myrciaria cauliflora</i> | jaboticaba | Brazil |
| | <i>Syzygium australe</i> | brush cherry | Australia |
| | <i>Syncarpia glomulifera</i> | turpentine | Australia |
| | <i>Tristaniopsis laurina</i> | water gum | Australia |
| Nothofagaceae | <i>Nothofagus menziesii</i> | silver beech | New Zealand |
| | <i>Nothofagus truncata</i> | hard beech | New Zealand |
| Nyctaginaceae | <i>Bougainvillea glabra</i> | tree bougainvillea | Brazil |
| | <i>Pisonia brunoniana</i> | parapara, bird-catching tree | New Zealand |
| Ochnaceae | <i>Ochna serrulata</i> | Mickey Mouse bush | South Africa |
| Oleaceae | <i>Fraxinus angustifolia</i> subsp. <i>oxycarpa</i> | narrow-leaved ash | Europe, Turkey, Iran |
| | <i>Fraxinus angustifolia</i> subsp. <i>oxycarpa</i> Raywood' | claret ash | Cultivar |
| | <i>Fraxinus excelsior</i> | European ash | Europe |
| | <i>Ligustrum lucidum</i> | tree privet | China (wild) |
| | <i>Ligustrum sinense</i> | Chinese privet | China, Japan (wild) |
| | <i>Nestegis lanceolata</i> | white maire | New Zealand |
| | <i>Olea europaea</i> subsp. <i>cuspidata</i> | African olive | Africa |
| | <i>Olea europaea</i> subsp. <i>europaea</i> | olive | Cultigen |
| | <i>Olea europaea</i> var. <i>oleaster</i> | wild olive | Mediterranean |
| | <i>Schrebera alata</i> | tree jasmine | South Africa |
| Onagraceae | <i>Fuchsia paniculata</i> | Mexican tree fuchsia | Mexico |
| Paulowniaceae | <i>Paulownia fortunei</i> | white-flowered paulownia | China |
| Pentaphylaceae | <i>Ternstroemia gymnanthera</i> | | China, SE Asia |
| Piperaceae | <i>Macropiper excelsum</i> subsp. <i>excelsum</i> | kawakawa | New Zealand (wild) |
| | <i>Macropiper excelsum</i> subsp. <i>peltatum</i> | Poor Knights kawakawa | New Zealand (cult.) |
| | <i>Macropiper melchior</i> | Three Kings kawakawa | New Zealand (cult.) |
| Pittosporaceae | <i>Hymenosorum flavum</i> | Australian frangipani | Australia |
| | <i>Pittosporum crassifolium</i> | karo | New Zealand |
| | <i>Pittosporum eugenioides</i> | lemonwood | New Zealand |
| | <i>Pittosporum obcordatum</i> | | New Zealand |
| | <i>Pittosporum tenuifolium</i> | kohuhu | New Zealand |
| | <i>Pittosporum umbellatum</i> | | New Zealand |
| Platanaceae | <i>Platanus xacerifolia</i> (syn. <i>P.</i> <i>orientalis</i>) | London plane | Europe |
| Proteaceae | <i>Grevillea lavandulacea</i> | | Australia |
| | <i>Grevillea robusta</i> | silky oak | Australia |
| | <i>Hakea drupacea</i> | fork-leaved hakea | Australia |
| | <i>Knightia excelsa</i> | rewarewa | New Zealand |

| | | | |
|---------------------|---|--|----------------------|
| | <i>Macadamia tetraphylla</i> | macadamia | Australia |
| | <i>Stenocarpus sinuatus</i> | firewheel tree | Australia |
| | <i>Toronia toru</i> | toru | New Zealand |
| Quillajaceae | <i>Quillaja saponaria</i> | soap-bark tree | Chile |
| Rhamnaceae | <i>Ceanothus impressus</i> | blue blossom | SW USA |
| | <i>Pomaderris apetala</i> | tainui | New Zealand |
| | <i>Pomaderris rugosa</i> | | New Zealand |
| Rosaceae | <i>Cotoneaster lacteus</i> | cotoneaster | China |
| | <i>Photinia serratifolia</i> | tree photinia | China |
| | <i>Prunus 'Awanui'</i> | Awanui cherry | Cultivar |
| | <i>Prunus campanulata</i> | Taiwan cherry | Taiwan |
| | <i>Prunus cerasifera 'Atropurpurea'</i> | cherry plum | Asia |
| | <i>Prunus serrulata</i> | ornamental cherry | Asia (wild) |
| | <i>Raphiolepis xdelacourii</i> | hybrid Indian hawthorn | Himalayas (cultivar) |
| Rubiaceae | <i>Alberta magna</i> | Natal flame bush | South Africa |
| | <i>Burchellia bubalina</i> (syn. <i>B. capensis</i>) | wild pomegranate, buffalo thorn | South Africa |
| | <i>Coprosma xcunninghamii</i> | hybrid karamu | New Zealand |
| | <i>Coprosma grandifolia</i> | raurekau | New Zealand |
| | <i>Coprosma macrocarpa</i> subsp. <i>minor</i> | coastal karamu | New Zealand (wild) |
| | <i>Coprosma parviflora</i> | | New Zealand |
| | <i>Coprosma repens</i> | taupata | New Zealand |
| | <i>Coprosma robusta</i> | karamu | New Zealand (wild) |
| | <i>Gardenia spatulifolia</i> | | |
| | <i>Luculia grandifolia</i> | white luculia | Bhutan |
| | <i>Rothmannia globosa</i> | tree gardenia, September bells | South Africa |
| Rutaceae | <i>Calodendrum capense</i> | Cape chestnut | South Africa |
| | <i>Choysya dumosa</i> var. <i>arizonica</i> x <i>C. ternata</i> | 'Aztec Pearl' | USA |
| | <i>Choysya ternata</i> | Mexican orange blossom | Mexico |
| | <i>Melicope ternata</i> | wharangi | New Zealand |
| | <i>Melicope xmantellii</i> (= <i>M. ternata</i> x <i>M. simplex</i>) | hybrid wharangi | New Zealand |
| Salicaceae | <i>Populus alba</i> 'Pyramidalis' (syn. <i>P. bolleana</i>) | Xinjiang poplar, upright silver poplar | China |
| | <i>Dovyalis caffra</i> | kei apple | South Africa |
| | <i>Populus deltoides</i> | cottonwood | USA |
| | <i>Populus yunnanensis</i> | Yunnan poplar | China |
| | <i>Salix alba</i> var. <i>caerulea</i> | silver willow | Europe |
| | <i>Salix matsudana</i> 'Tortuosa' | corkscrew willow | Cultivar |
| | <i>Salix xchrysocoma</i> | golden weeping willow | Cultivar |
| Sapindaceae | <i>Acer buergerianum</i> | trident maple | China |
| | <i>Acer negundo</i> | box elder | USA |
| | <i>Acer palmatum</i> | Japanese maple | Japan |
| | <i>Acer pseudoplatanus</i> | sycamore | Europe |
| | <i>Acer rubrum</i> | red maple | North America |
| | <i>Aesculus xcarnea</i> | red horse chestnut | USA |
| | <i>Aesculus hippocastanum</i> | horse chestnut | Greece, Albania |
| | <i>Alectryon excelsum</i> | titoki | New Zealand |
| | <i>Cupaniopsis anacardioides</i> | tuckeroo | Australia |

| | | | |
|-------------------------|---|--|--|
| Sapotaceae | <i>Pouteria australis</i> <i>Pouteria costata</i> | black apple tawapou | Australia New Zealand |
| Scrophulariaceae | <i>Myoporum insulare</i> <i>Myoporum laetum</i> | Australian ngaio ngaio | Australia New Zealand |
| Solanaceae | <i>Brugmansia mollis</i> <i>Brugmansia xinsignis</i> <i>Brugmansia versicolor</i> <i>Iochroma coccinea</i> <i>Iochroma grandiflorum</i> <i>Solanum aviculare</i> | angel's trumpet angel's trumpet angel's tears poroporo | Peru Colombia, Ecuador Cultivar Central America Ecuador New Zealand |
| Stachyuraceae | <i>Stachyurus praecox</i> | early spiketail | Japan |
| Stilbaceae | <i>Halleria lucida</i> | African honeysuckle | South Africa (planted and wild) |
| Tamaricaceae | <i>Tamarix chinensis</i> | Chinese tamarisk | China |
| Theaceae | <i>Camellia japonica</i> <i>Camellia reticulata</i> <i>Camellia sasanqua</i> <i>Polyspora axillaris</i> (syn. <i>Gordonia axillaris</i>) | common camellia reticulata camellia sasanqua camellia gordonia, da tou cha | Japan SW China Japan China |
| Trochodendraceae | <i>Trochodendron aralioides</i> | wheel tree | China, Korea, Japan |
| Ulmaceae | <i>Ulmus glabra</i> Lutescens' <i>Ulmus parvifolia</i> <i>Ulmus xhollandica</i> <i>Ulmus procera</i> <i>Ulmus xvegeta</i> <i>Zelkova serrata</i> | golden wych elm lace-bark elm Dutch elm English elm Huntingdon elm keyaki | UK, cultivar Japan, Korea, China Europe UK UK Japan |
| Verbenaceae | <i>Clerodendron ugandense</i> <i>Petrea volubilis</i> <i>Vitex lucens</i> | blue butterfly bush sand paper vine puriri | East Africa South America New Zealand |
| Violaceae | <i>Melicytus ramiflorus</i> | mahoe | New Zealand (wild) |

C: Monocots

| | | | |
|--|--|--|---|
| Arecaceae (= Palmae) | <i>Archontophoenix cunninghamiana</i> <i>Butia capitata</i> <i>Howea forsteriana</i> <i>Linospadix monostachya</i> <i>Livistona chinensis</i> <i>Phoenix canariensis</i> <i>Phoenix reclinata</i> <i>Phoenix sylvestris</i> <i>Rhopalostylis baueri</i> var. <i>cheesemanii</i> <i>Rhopalostylis sapida</i> <i>Trachycarpus fortunei</i> <i>Washingtonia robusta</i> | bangalow palm jelly palm kentia palm walking stick palm Chinese fan palm phoenix palm Senegal date palm wild date palm Kermadec nikau nikau Chinese windmill palm Mexican cotton palm | Australia Brazil, Uruguay Lord Howe Island Australia China Canary Islands Africa India Kermadec Islands New Zealand (wild) China USA, Mexico |
| Asparagaceae | <i>Cordyline australis</i> | cabbage tree | New Zealand |

| | | | |
|-------------------------|----------------------------|------------------------------|--------------------|
| | <i>Cordyline fruticosa</i> | ti pore | SE Asia, Polynesia |
| | <i>Ruscus aculeatus</i> | butcher's broom | Europe |
| | <i>Yucca guatemalensis</i> | spineless yucca | Central America |
| Pandanaceae | <i>Freycinetia banksii</i> | kiekie | New Zealand |
| Poaceae | <i>Bambusa balcooa</i> | borak bamboo | India |
| Strelitziaceae | <i>Strelitzia nicolai</i> | giant bird of paradise plant | South Africa |
| Xanthorrhoeaceae | <i>Aloe bainesii</i> | aloe tree | Southern Africa |

Liquidambar (*Liquidambar styraciflua*) beginning to move?

Ewen K Cameron

Liquidambar or sweet gum (*Liquidambar styraciflua*) of the witch-hazel family (Hamamelidaceae, or more recently placed in the Altingiaceae) was being sold in Auckland in 1888 by D. Hay & Son of Montpellier Nursery (Hay's Catalogue 1888-89) for 1/6 to 2/- each. Aptly advertised by Hay's as: "one of the finest American trees, beautiful in all stages of growth. Somewhat resembling the maple, leaves star-shaped and a beautiful glossy green in summer, which changes in autumn to a deep purplish crimson. An elegant and desirable hardy tree." It is now grown as an ornamental species throughout New Zealand.

The oldest New Zealand herbarium specimen located was from a cultivated tree in Rotorua, collected in 1951 (NZFRI 4040, *K M Bibby*, 3 Oct 1951, Forest Research grounds). The first wild collection of liquidambar in New Zealand was of scattered seedlings by the parent tree in Auckland City by Peter de Lange in 1997 (AK 231349, see Appendix 1 & Figure 1) and published by Heenan et al. (1999). In 2000 there were two more collections from Auckland City and one from Te Puke (Appendix 1) all published by Heenan et al. (2002). All were young plants near adult trees. The next collections were in 2004: four from Auckland and one from Hamilton (Appendix 1). Seedlings were also locally common by an adult tree on the Auckland University campus in February 2004 before being weeded (P J de Lange pers. comm.).



Figure 1. Herbarium sheet (AK 231349) of the first wild liquidambar seedlings collected in New Zealand.

Liquidambar is a small genus of 3-5 species. All the species are monoecious. In cultivation *L. styraciflua* reaches 28 m in height, with a trunk c.1m diameter (Mitchell 1994, Salmon 1999). The grey bark is furrowed, and for young trees Mitchell (1994) records it as pale grey, or if raised from root suckers as dark brown with corky wings, later becoming dark grey. The species is deciduous, with palmately (3-)5-lobed leaves arranged alternately, not opposite as in some of the similar looking maples (*Acer* spp.). There are various cultivars available, generally exhibiting different coloured autumn leaves. Liquidambar flowers lack petals and appear with the new leaves in spring: male flowers are in spikes, and the females in dense clusters (wind pollinated). The softly spined subglobular fruit (c.3cm diam.) hang on 3-6.5cm long peduncles and stay attached for at least 6 months. The spines are formed from the persistent styles. As the fruit ripens it changes from green to brown and the seeds are released via openings between the paired spines. The flattened seeds are winged, to 10mm long x 2.5mm across (including the wing). But the four fruit that I investigated contained only a few winged seeds and mainly chaff variously shaped and c.2mm across (unfertilised ovules?)(Figure 2). There is the potential of a seed bank held in the fruit hanging