

The Magazine of the Friends of Pukekura Park

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Sophora – Kowhai
Brilliant spring flowering and important bird food

Photo Derek Hughes

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Brooklands Zoo update

**Eve Cozzi
Acting Technical Officer**

The staff at Brooklands Zoo have been busy recently with the completion of some Capuchin Monkey and Otter transfers. Their introduction to our existing animals has gone well, and “Bud” the Asian-clawed Otter from Australia and our six new female Capuchin Monkeys from Hamilton Zoo have all settled in to their new environments. Changes to the aquatics tanks in the barn, located at the farmyard, have recently taken place, and the new friend for our Giant Flemish Rabbit seems to be enjoying his new home at the Zoo also.

With summer approaching and visitor numbers increasing, Zoo staff are starting up a volunteer program. Volunteers provide much needed and appreciated support to our staff and animals. We are looking for people who are highly motivated, passionate about animals, and can work as part of a team. Our volunteer program will offer a wide range of activities depending on experience and knowledge. Volunteers will receive full training. We ideally require our volunteers to be able to commit to a regular time slot so that they and our animals become familiar with each other and so that they become part of the Zoo team. If this sounds like something you would like to participate in please contact Sarah at (06) 7695320. The first training session will occur in October 2008.



“Mungo” the Red Panda at Brooklands Zoo

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Tui and flowering Kowhai

David Medway



The following article about the seasonal association between Tui (*Prosthemadera novaeseelandiae*) and flowering Kowhai (*Sophora* spp.) in Pukekura Park some 75 years ago, which appeared in the *Taranaki Herald* of 3 October 1932, is worthy of reproduction. The same seasonal association continues today.

“The charming association between kowhai trees in bloom and tuis at present in Pukekura Park is emphasised by Mr. W. W. Smith, the well-known naturalist and former curator of the park, in an interesting letter to the editor. Mr. Smith writes:-

The 14 large kowhai trees growing in Pukekura Park are blooming magnificently at present and are the chief attraction and source of food to the large number of tuis assembled there. To hear their song and observe their habits in association with the flowers of the kowhai is a charming scene in native bird life. For many years these beautiful birds have visited the park during the blooming of the kowhai trees, but are fewer in number this year than formerly.

When a considerable number of male tuis meet, as at present in Pukekura Park, there is great rivalry amongst them in song and squabble alike. Occasionally an individual may be seen on a bough puffing its breast singing a love-song when a rival assails the singer, and a vigorous chase through the bush ensues.

The tui is now the chief fertiliser of the flowers of the gorgeous kowhai. Though it is holding its own comparatively more than many other species of native birds it is unquestionably diminishing in numbers annually in some districts. Its brush-tipped tongue is peculiarly adapted for extracting the honey secreted at the internal base of the flower. The anthers with the pistil projecting beyond them are curved with the broad upper petal of the flower. When the bird inserts its head into the flower to extract the honey the head and neck receive a dusting of pollen from the anthers which is conveyed to the flowers of other kowhai trees. The pistil being longer than the anthers it receives the pollen from the birds while inserting their tongue into the honey receptacle.

The magnificent kowhai trees with the rich and varied calls and songs of the numerous tuis present is truly an additional charm of Pukekura Park at the present time. It is, moreover, a phase of nature study only to be observed annually, generally from September 15 to October 21. When the kowhai blooming season is finished on the lowlands the birds migrate to higher lands and Mount Egmont, where the trees continue to bloom in succession, according to altitude, until the middle of November.

The tui with many other bush birds also assists in fertilising the flowers of other native trees and shrubs. Let us earnestly hope that the beautiful tuis may long continue to annually visit the resplendent kowhai trees in Pukekura Park. The trees and the tuis now delight visitors to the park”.



Photos Derek Hughes

Specimen trees in Pukekura Park and Brooklands

Bryan Gould

Pukekura Park and Brooklands are unique. The diversity of the landscape makes them truly magical, whether you visit once or wander through regularly. The trees are especially important, in that they provide both interest and harmony to the views. So often thought of as merely "background", when combined with the water, the wildlife and the hilly terrain they create a special sense of place.

This contribution highlights some of the special specimen trees in Pukekura Park and Brooklands, those that are so easy to walk past without a second glance but which, in essence, provide extra enjoyment to anyone willing to look closely.

Araucaria – an ancient line

Consider the genus *Araucaria*, the southern hemisphere evergreen conifers that are invariably large and bold focal points in any garden. These trees grace the lawns of many great gardens, here and overseas. They have always been highly regarded since their discovery in early Victorian days and their subsequent distribution across the old Empire.

Araucaria is a genus of 19 species, spread throughout New Caledonia, Papua New Guinea, Norfolk Island, Australia, Argentina, Chile and southern Brazil. *Araucaria* is one of three genera within the family Araucariaceae, the others being *Agathis* which includes our native Kauri (*Agathis australis*), and *Wollemia* a monotypic genus which contains one of the world's rarest trees, *Wollemia nobilis*. The Araucariaceae arose in and were abundant from the Mesozoic era, the pre-Gondwana period over 200 million years ago. The family contains survivors from the age of dinosaurs.



Photo Derek Hughes

Two historic Norfolk Island Pines dominate the skyline as seen from Brooklands Bowl



Photo Derek Hughes

Araucaria alongside Jellyman Walk at Brooklands

There are four *Araucaria* species in Pukekura Park and Brooklands. The two most obvious specimens are the mature Norfolk Island Pines (*Araucaria heterophylla*) standing together near the western border of Brooklands. It is believed that the original owner of Brooklands, Captain Henry King, planted these fine trees in 1851. Their sheer height and dimensions make them major components in the lawn landscape and, intriguingly, they are visible for miles from other vantage points beyond Brooklands. Incidentally, despite its common name, this tree is, botanically speaking, not a true “pine” at all. It was mis-named by those who unwittingly referred to every conifer as a “pine”. The same misnomer applies to Wollemi “Pine” too.

Seven young Norfolk Island Pines are found nearby, edging the Brooklands Park Drive above the Rhododendron Bank overlooking the Lily Lake and the Bowl. These new arrivals, planted in mid-2000, will assume their intended place as skyline giants one day in the future. They were deliberately planted at this high perimeter point to create an impact for visitors on arrival at Brooklands, and to act as location markers when viewed from afar. Their presence in the landscape is, literally, growing. Give them a decade or two and they will be magnificent.



Photo Derek Hughes

Young Norfolk Island Pines alongside Brooklands Park Drive

Similarly, there are six young Norfolk Island Pines secreted into the rear of the Hebe border alongside Victoria Road. These trees, planted in 2004, are steadily establishing. They will reveal themselves when they break through the surrounding canopy and, like their older more sturdy cousins that already inhabit the border area, will stand along the Park's boundary like sentries on guard. Again, this was an intentional planting, using a large-growing evergreen tree as a long-term specimen. They will, in their own era, enhance and maintain the skyline effect that is so essential to the Park.

There is a very significant planting of Monkey Puzzle Trees (*Araucaria araucana*) inside Brooklands, but you may not have noticed them. This tree (known by the Arauco Indians of Chile and Argentina as pehuén) is the national tree of Chile. Monkey Puzzle Trees are found all around New Zealand, in the grounds of municipal parks, garden collections and country homesteads, but invariably as single trees. The Brooklands group, located behind the Bowl below Scanlan Lookout, is unique because there are 50 trees planted together. They have been discreetly settling into their site since 2001.

One has to look closely to see them all. Many are obscured by vegetation on the slopes, but are quietly growing into a grove that will bring joy and amazement to onlookers over the coming decades. I am not aware of any other planting of Monkey Puzzle Trees in New Zealand which utilises this number of plants in one location. The intention was, from the outset, to create a massed grouping, a spot where walking beneath the hillside canopies would emulate the mountain uplands of Chile. Patience is all that is needed. Take the High Level Track to see how these wonderful young trees are progressing.

Closely planted in association with the pehuén are four Klinki Pines (*Araucaria hunsteinii*). Klinki Pines are somewhat unusual and infrequently seen, except in special collections. These particular trees were originally planted in

2005 on Monument Hill at the southern end of the Main Lake. They were re-located this year to join the trees at Monkey Puzzle Grove. There are also two quite large and semi-mature Klinki Pine specimens alongside Jellyman Walk, where the pathway curves up beneath the Plane trees heading towards the Bowl ticket box building. They link, botanically and visually, with the Norfolk Island Pines standing above. Klinki Pines are from the mountainous regions of Papua New Guinea where their habitat is fast disappearing due to development and land-use change. The few specimens within Brooklands are a small but important nucleus of endangered trees.

Last, but not least, the collection also includes two good specimens of Hoop Pine (*Araucaria cunninghamii*). From Australia, New Guinea and Indonesia their timber is highly prized for furniture making, carving and boat building. This rainforest tree is capable of reaching 60m in height.

The *Araucaria* trees in Pukekura Park and Brooklands are only a small representation of a fabulous family. The more-recently planted specimens have extended and enhanced the collection. Several other *Araucaria* species are also perfectly suited to this region. *Araucaria* have many great attributes. They are usually large growing, long-lived, disease-free trees which makes them first-rate specimens. They tend to be a focal point within any landscape. The common name may be somewhat misleading, but that is of little consequence. *Araucaria* are amongst the tree world's aristocracy. Take a closer look next time, and tip your hat.



The park bench gives an indication of the size of one of the historic Norfolk Island Pines (centre) at Brooklands

Creating "The Serpentine"

David Medway

At its meeting in September 1907 the Recreation Grounds Board, which became the Pukekura Park Board two months later, resolved that generous legacies received by the Board from the estates of R. H. Govett and H. R. Broham would be devoted to carrying out its long-contemplated plan to extend the main lake in Pukekura Park to the boundary of Newton King's property at Brooklands (*Taranaki Herald* 23/9/1907; 22/4/1908).

S. Percy Smith, who supervised the required work, advised his fellow Board members in November 1907 that a commencement had been made with the extension of the main lake towards Brooklands. The diversion of the water from the swamp between the head of the main lake and the boundary at Brooklands had been effected, and as soon as the swamp was sufficiently dry, a start would be made with the excavation (*Taranaki Herald* 7/11/1907). In order to get rid of the water during the time the necessary excavations were being made, the Board had decided, at its meeting in September 1907, to erect a dam at the Brooklands end of the swamp and to divert the water into a drain outside the swamp from the Brooklands boundary to the main lake, and then to lower the level of the main lake about 18 inches until the swamp was drained. The lake would be refilled to its original level when the excavation was completed. Extra labour was to be engaged to carry out the work. (*Taranaki Herald* 23/9/1907).

The work was completed under “the most favourable conditions” during the summer of 1907-1908 (*Taranaki Herald* 22/4/1908). By the end of January 1908, a “notable transformation” had been effected by the Board: “It has involved the excavation of the long narrow swamp extending from the upper bridge near the boat-house to the boundary of Brooklands, Mr Newton King’s property. A beautiful waterway with an average depth of three feet has been created. It will be available for boating. The length of the course over which boats can be rowed has been doubled. The silt and vegetable matter taken out in the process of excavation has been used to form the banks and a wide pathway around the lake. The Board hopes to be enabled to plant the margins with a fine display of bulbs, etc. Only lack of funds can prevent the trustees from making the surroundings of the new sheet of water very attractive. Most of the labor has been done by Maoris working under the control of Mr A. Cole, who, we are informed, has proved himself a very capable and tactful overseer” (*Taranaki Herald* 27/1/1908). By mid-February 1908, the water in the main lake had been rising slowly, and had covered the bed of the extension sufficiently to enable the whole length to be rowed over by Mr E. H. Tribe, the Board secretary, “who thus earns the distinction of being the first navigator” (*Taranaki Herald* 17/2/1908). There was now a continuous waterway from the band rotunda to the boundary of the Brooklands estate (*Taranaki Herald* 22/4/1908).

Pukekura Park was the “great treat” in store for an anonymous visitor to New Plymouth in May 1909, by which time the extension to the main lake had become known as “The Serpentine”. The visitor recorded that “The row in the boat, from which charming mirror effects can be seen, continues up-stream into what has been named The Serpentine, a winding course that finally brings one to the uppermost point, and there the natural state of the ground from which the lake has been dug is shown. It is simply an ordinary swamp cleaned out, the natural vegetation along the side being allowed to remain, and the islet pricked out as the ground has been trenched, the excavation being filled with a copious supply of clean water in a running stream” (*Taranaki Herald* 29/5/1909).



Photo Karl Rossiter

W. W. Smith, who commenced duties as Curator of Pukekura Park on 23 March 1908, considered that the recent extension of the main lake had much enhanced the beauty of the Park. He thought that when the banks and open spaces near it were planted with tree ferns and other suitable native trees, and beneath them low-growing ferns,

the extension would prove most picturesque when viewed from the low hills overlooking it (*Taranaki Herald* 14/4/1908). Smith carried out the first of those plantings shortly afterwards. W. Park of Palmerston North, who visited the Park in early June 1908, found the Curator planting the “new island recently made in a pretty extension



at the head of the lake” (*Taranaki Herald* 12/6/1908). Smith reported to the Board at its meeting in July 1908 that “all the 380 native plants in the old nursery have been planted out. The young totaras were planted on totara hill, while the remainder were planted on the banks of the new extension of the upper lake, and on the island therein” (*Taranaki Herald* 4/7/1908). By May 1912, “all the native trees and tree-ferns planted on the banks along the extension of the upper lake at the head of the park were making rapid growth. The extension was now quite a picturesque feature of the park when viewed from Totara hill overlooking it” (*Taranaki Herald* 21/5/1912).

Newton King was obviously impressed by the work which was carried out in Pukekura Park in the summer of 1907-1908. In mid-February 1908 it was reported that he also had “an extensive work in progress in that part of his Brooklands property which immediately adjoins the Park. The Maoris who did such excellent work for the Board are now employed by Mr King in forming a large sheet of water which will stretch from the Park boundary for a long distance into Brooklands and, when finished, will add greatly to the charms of the domain” (*Taranaki Herald* 17/2/1908).



The Pukekura Park Portal Project

Elise Smith

If you pass by the Park Curator's office you are likely to see Cathy Campbell-Smart, our archivist employed under the Community Partnership Fund, busy recording and digitising George Fuller's fascinating collection of notes and photos from his time as Park Curator. She has now (19 September) been at work for a month, devising and testing the systems we are to use, which have to satisfy Puke Arika collections policies and national digital requirements. This week



Photo Elise Smith

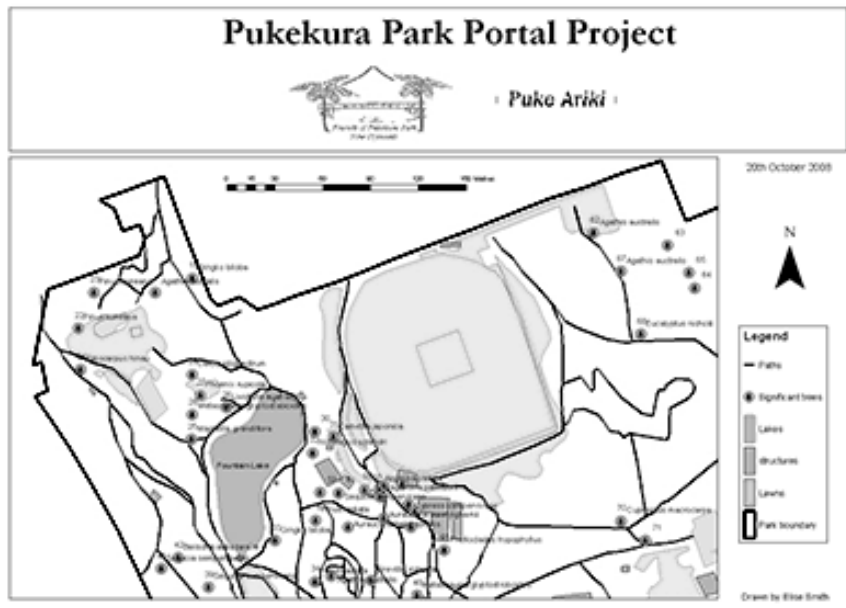


Photo Elise Smith

we started scanning slides from George's boxes.

These digital photos will be stored in a digital archive, or "kete". In addition to this material, we have historic photos, and "sound-bites" discussing specific plants and places in the Park, recorded on the guided walks that George and David Medway have led over the years.

Soon we will have tested that our methods are glitch-free, and we would like the Friends to pop in and see what we have done. If you would like to assist us by sorting items into "topics", we welcome your help.

By the beginning of next year we intend that these important recollections and botanic information will be accessed through our website, a portal to the history and ecology of the Park. Finding interesting features and making maps will be supported by the New Plymouth District Council Geographic Information System. The ongoing participation of our members, and gathering their recollections, will be most helpful to tell the story of the Park. The Friends, Puke Arika and the District Council are also working with and taking guidance from the University of California Davis Arboretum, to develop an international standard for Botanic Gardens management.

George Fuller gives us botanic and historic information relating to plants in the Park

From the Fernery

Donna Christiansen

Technical Officer Fernery & Display Houses

If you have been into the Kibby House since mid-September you could be excused for thinking you were in tropical Bali. The addition of an authentic handcrafted coconut palm-wood Balinese pavilion has created a stunning new feature which blends in with the existing tropical plants on display. It has also created a relaxing retreat for visitors to take a break and soak up the atmosphere. This feature was funded by an unexpected donation to the Park. We would welcome further donations to enable us to purchase two Balinese seats to accompany it!

A Maori medicinal plant display appears at the Horton Walk entrance to the Kibby House. This has been researched and put together by Judi Harre. It is an informative display of New Zealand native plants and a brief history of Maori medicine, with a number of plants highlighted together with information about their medicinal properties. This “must see” display will be on show for two months.

During spring-summer we will be featuring *Lachenalia*, *Veltheimia*, and Tulips, progressing to *Gladiolus*, Asiatic and Oriental *Lilium*, *Hippeastrum*, *Zantedeschia* and *Dahlia*. Bulbs always make a colorful display, so keep a look-out for all these beauties. Another perennial that is not as common as it once was is the majestic *Delphinium*. These plants are spectacular so long as slugs can be kept away from them.

The Rhododendron and Garden Festival is on from 31 October until 9 November. There will be daily tours through the Fernery at 1.30pm, meeting at the main Fernery entrance by the Fred Parker Lawn.



Above: Balinese pavilion in a wonderful tropical setting

Below: A section of the New Zealand native plant display in the entrance to the Kibby House



Border renovations - Pukekura Park and Brooklands

**Ian Hutchinson
Technical Officer Pukekura Park**

This year the Park team has done renovation work on some of the borders at Brooklands, and in Primula Dell and Fred Parker Lawn in Pukekura Park. The aim has been to give the plantings in these areas a new lease of life. To help achieve this we have lifted and divided many of the existing perennials in these gardens ready for reuse, and have done a significant amount of work on improving soil quality and fertility by adding a lot of organic material to the soil, mainly in the form of stable manure, Bio Boost, and Garden Galore sheep pellets. This should result in much improved plant health vigor and flower production.

The first border to be tackled was the herbaceous border at Brooklands. In this border we have retained most of the existing *Salvia* and *Canna* collection and have regrouped these in many cases so that their heights are more appropriately positioned, with taller varieties being moved further back, and reworking of some of the colours to help make them look better together. We have also added some new plant varieties that will create more interest by increasing the range of forms and textures experienced and an overall extension of the flowering season through the use of some new flowering plants. New plants we have added are plants for foliage texture effect including *Ligularia* varieties, *Iresine* and *Ajuga*, and plants for their flowers *Dahlia*, *Dierama*, *Penstemon*, and two new varieties of Siberian *Iris*. At the completion of the planting we then mulched the whole border applying thirty cubic metres of composted bark mulch. The Friends' Volunteers helped make a valuable contribution to this border revamp by assisting the Park team on at least three occasions to divide and reset plants and plant some of the new arrivals. The Volunteers' contribution is appreciated.

The other main Brooklands border we have revamped is the western border which has now been renamed the "4 Seasons Border". The revamp entailed removal of some older and unwanted plant material, reshaping of the bed edges with widening in some places and reducing in others so that the bed outline has a more flowing appearance, fertilizing with stable manure and then an overlay of fresh topsoil, and planned replanting with new plant material that would provide some sort of feature during all four seasons of the year. We have used a range of shrubs, perennials, and annuals to complement the existing trees and shrubs. Lastly, this border was mulched with twenty-five cubic metres of composted bark. At the same time we gave the garden in the Zoo car park a tweak by planting some "Flower Carpet Red" roses which will brighten up the entrance to Brooklands, and this has been mulched with composted bark as well.

We have done a minor revamp of the Norfolk Island Pine bed to add more interest and eye-catching colour when looking from the front gate as well as giving the soil a re-boost. This involved shifting some bigger plants from the front of the border and moving them to the back, and adding some new plants like *Canna*, *Tibouchina* and *Indigofera*. Hopefully, this garden will have a lot more "wow" factor as a result.

The Primula Dell has had a revamp as well. Here the soil has been boosted as in Brooklands. The new plantings include more *Primula*, *Ligularia*, *Hosta* and *Rodgersia* to reinforce the woodland garden theme in this area. It will be very much a spring garden, and foliage plants will carry through the summer until the garden goes into winter dormancy.

The last main revamp for this year has been the Fred Parker Lawn gardens. With this revamp we have changed the plantings to encompass the whole lawn tying the landscape together and introducing more colour and texture. We have reduced the dominance of linear-leafed plants by removing some of them altogether and adding more shrubs and rounded-leafed plants. These changes have created a much more unified and interesting appearance. Some of the foliage plants used are *Ligularia reniformis*, *Ligularia* 'Crested Leopard', *Tibouchina gossypinus*, and *Pseudowintera colorata* 'Red Leopard', and flowering plants include *Alstroemeria*, *Brunfelsia eximia*, and *Euphorbia*. This border will be mulched with composted bark like the others.

Some host plants of the Hanging Tree Orchid (*Earina mucronata*) in Pukekura Park and Brooklands

David Medway

An ecological feature of Pukekura Park and Brooklands that merits study and documentation is the large number and variety of native plants which grow there as epiphytes on both native and introduced trees. One of those epiphytic plants is the Hanging Tree Orchid (*Earina mucronata*), an endemic New Zealand member of the Orchidaceae (Orchid) family. It is the most common of New Zealand's perching orchids.

Earina mucronata has long, drooping stems with long, narrow, grass-like leaves. Its roots often form a thick, tangled mass attached to the tree bark. The roots sometimes completely encase the trunk or branch on which the plant is growing. The plant may then form a large, grassy-looking mat. An excellent example of this can be seen on one of the old Kowhai (*Sophora microphylla*) trees in Rhododendron Dell. The numerous, creamy-yellow flowers of *Earina mucronata*, which occur in drooping panicles and are probably pollinated mainly by flies, appear in Pukekura Park and Brooklands from late September to late December.



During the last few years I have kept a record of the trees in Pukekura Park and Brooklands on which I have seen *Earina mucronata* growing. My observations show that *Earina mucronata* is most commonly found there on Kowhai (*Sophora microphylla*) and English Oak (*Quercus robur*) trees. None of the published references I have looked at mention that *Earina mucronata* grows as an epiphyte on introduced trees. It is therefore worthwhile to document the trees, both native and introduced, that I have seen *Earina mucronata* growing on in Pukekura Park and Brooklands. Further observation may reveal additional host trees.

Native New Zealand trees - *Alectryon excelsus* (Titoki); *Beilschmeidia tawa* (Tawa); *Cordyline australis* (Cabbage Tree); *Cyathea cunninghamii* (Gully Tree Fern); *Cyathea medullaris* (Mamaku); *Dacrycarpus dacrydioides* (Kahikatea); *Dacrydium cupressinum* (Rimu); *Dicksonia squarrosa* (Wheki); *Knightia excelsa* (Rewarewa); *Laurelia novae-zelandiae* (Pukatea); *Meliclytus ramiflorus* (Mahoe); *Metrosideros excelsa* (Pohutukawa); *Myrsine australis* (Mapou); *Pittosporum eugenioides* (Lemonwood); *Podocarpus totara* (Totara); *Pseudopanax crassifolius* (Lancewood); *Rhopalostylis baueri* (Kermadec Nikau); *Sophora microphylla* (Kowhai); *Vitex lucens* (Puriri).

Introduced trees - *Acer palmatum* 'Aureum' (Golden Japanese Maple); *Acer pseudoplatanus* (Sycamore); *Amelanchier canadensis* (Shad Bush); *Carya ovata* (Shagbark Hickory); *Castanea sativa* (Sweet Chestnut); *Cercis siliquastrum* (Judas Tree); *Cornus capitata* (Himalayan Dogwood); *Ficus macrophylla* (Moreton Bay Fig); *Ginkgo biloba* (Maidenhair); *Juglans regia* (Common Walnut); *Lagunaria pattersonii* (Norfolk Island Hibiscus); *Magnolia grandiflora*; *Magnolia sargentiana* 'Robusta'; *Magnolia x soulangeana*; *Magnolia veitchii*; *Pinus radiata* (Radiata Pine); *Platanus orientalis* (Oriental Plane); *Prunus serrulata* (Japanese Cherry); *Quercus palustris* (Pin Oak); *Quercus robur* (English Oak); *Rhododendron arboreum* 'Rubrum'; *Rhododendron* 'Boddaertianum'; *Rhododendron* 'Harrisii Superba'; *Ulmus glabra* 'Horizontalis' (Horizontal Elm); *Ulmus procera* (English Elm); *Wisteria floribunda* 'Violacea Plena'.