



# Fernglen Native Plant Gardens

## Autumn Newsletter 2017



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## **1. A Visit to the fernery Pukekura Park, New Plymouth**

Pukekura Park is a 'Founding Garden of National Significance' and a central visitor attraction in New Plymouth. For some the attraction is the magnificent cricket ground, and for others it is the amazing Fernery.

Pukekura Park began colonial life in 1842 as Brooklands, the model farm of Captain Henry King. Pioneering community spirit, and the benevolence of local businessmen saw the development of a Recreation Ground adjacent to the farm in the early 1870's. The community trust that drove the development of the grounds, included chairman Thomas King (distant relation of Henry), and lawyer Robert Clinton Hughes, who enabled the passing of the Botanical Gardens Bill. Volunteer labour, both European and Maori, filled the swamp to build the sports ground. In 1878 the stream was dammed to form the lake. Various fundraising efforts and benefactors contributed to developing the recreation grounds. Notably the wager won on a horse named Poet was donated to build the Poets Bridge. Re-named Pukekura Park in 1908, the community trust handed the responsibility of the park to the council in 1929. Thomas's son, Newton King (brother of Truby), purchased the Brookland's property in 1888, and undertook extensive landscaping. In 1934 Brooklands was given to the people of New Plymouth and became part of Pukekura Park. Work began on the Bowl of Brooklands in 1957, and in 1965 the Brooklands Zoo was opened. By 1918 the gardens boasted an impressive collection of ferns and under the curatorship of Thomas Horton in 1926 the fernery became a major project. "*The idea is to establish as complete a collection of New Zealand ferns as we can get together. For this purpose over a score of enthusiastic botanists in various parts of the Dominion are collecting specimens. When the collection is complete we hope to make it a sanctuary which will be the only one of its kind in New Zealand*". The collection would include "*all the smaller-growing ferns, such as: Todea superba, lomarias, gleichenias, aspleniums, doodia media, leptolepia, nephrodium, loxsoma, blechnum, lygodium, hymenophyllum, lindsaya, polystichum, pteris, trichomanes reniforme, etc*". 204 ferns of 25 varieties donated by Duncan & Davies, nurserymen, would form the foundation of the collection (Horton quoted in *The Budget and Taranaki News* 13/07/1927)



The accompanying photograph taken by Teeds of New Plymouth, probably in the early 1930s, shows the interior of the new Fernery.

Reproduced from *The Newsletter of the Friends of Pukekura Park* 3(1) (February 2008)

The design of the 3 chambers of the fernery, excavated into the hillside to provide a cool moist environment, is attributed to Elisabeth Lovell, who had previously built the first underground excavated fernery in New Zealand at her home in Hawera. Horton recorded in his work diaries that 2,370 ferns were growing in the Fernery when it opened to the public on 25 January 1928. The ferns were supplemented with associated plants such as orchids and *Dracophyllum*. In 1967 the Kibby glasshouse was added to the fernery.

That the ferns are treasured is evident in the current system of hand-watering to the individual needs of the differing varieties. King fern are abundant throughout the park now, but the most impressive specimens are the Prince of Wales fern *Todea superba*. Unfortunately, we have had less long-term success with this species at Fernglen. Pukekura Park and its fern house are a tribute to the pioneers of New Plymouth and the commitment of the district council and staff.



Herbert Dobbie's *Todea superba* from the New Zealand Fern Album 1880 . Dobbie later praised the Pukekura fernery in his 3rd edition of 'New Zealand ferns' after visiting in 1930

### 3. A new approach to Kauri dieback

Finally, some good news about the blight of our forest giant- the Kauri tree. Dr Ian Horner a pre-eminent scientist in this field has found positive results with the use of phosphite (phosphorous acid, PA) on Phytophthora taxon Agathis (PTA), a serious problem, killing kauri trees of all ages, in forests in Auckland and Northland. Very few treatment options are available for infected or threatened trees. PA has been used overseas to manage some phytophthora species in the horticultural industry. In 2011 in vitro laboratory testing with PA on Kauri seedlings indicated whether it would be a useful field control, and to identify non-toxic dose concentrations.

Field experiments injecting PA have been carried out in three affected forests; Cascade Kauri Park, Auckland, Trounson Park, Dargaville and another site near Kerikeri. Five years after treatment interim results look promising. With phosphite boosting the tree's immunity and resistance, the dieback is not progressing. Lesions stop spreading and new bark grows underneath old lesions, which then crumble away.

Ongoing work is required to assess both the correct quantity needed to treat different aged trees, and the frequency and timing of follow up doses. Dr Horner re-iterates however that the pathogen remains, and that this treatment is a "Band-Aid" requiring re- application. The Waitakere ranges now has an incidence of the disease three times what it was 5 years ago, with one in five kauri currently affected. The news of a potential treatment is heartening.



Dr Horner in Waitakere

Simon Smith Fairfax media from [www.stuff.co.nz](http://www.stuff.co.nz)



#### 4. The remarkable coastal sedge Pīngao

Pīngao *Ficinia spiralis* (previously known as *Desmoschoenus spiralis*) or coastal golden sedge was once a common sand dune plant across all New Zealand islands. It is now considered a vulnerable species. Trampling by farm stock, browsing by feral animals, the suffocating spread of maram grass and lupin, and the destruction by dune buggies and trail bikes, has combined to reduce the population. Paradoxically, over the last 20 years it has also become a sought after commodity as the resurgence of traditional weaving has led to replantation. It has also been recognised as useful for the control of coastal erosion.

Pīngao is very effective as an erosion control because it allows for the natural quality of the sand system. The sand movement around the pīngao plants means that the dunes are lower, smoother in shape, and therefore more stable. Pīngao grows closer to the shore than any other dune-binders and co-exists well with other native plants. It is able to grow upwards through layers of sand and avoids being buried.

Fortunately, pīngao is relatively easy to propagate by seed and cutting. Pīngao seed ripens from mid –November onwards. The brown seed heads should be picked and dried for 7-10 days. Then pounded to remove the orange chaff. Collected seed is planted in seed raising mix covered with coarse sand. Seedlings emerge within about 3 weeks, and can be packed out into small pots when around 8cm. Young seedlings are best planted out in autumn to mid-winter. Plant in groups for easy maintenance about 50cm apart. Propagation by cuttings is quite straightforward. Tip cutting in mid-summer when the plants are actively growing. Each cutting about 4-5cm long. Cuttings kept moist will have roots at about 4 weeks. Young plants are ready for planting in about 6-12 months.



*Ficinia spiralis* photo courtesy Phil Bendle NZPCN

## 5. Growing *Cordyline indivisa* at Fernglen

As our native plant collection expands, some new plants prove challenging to cultivate in Auckland. *Cordyline indivisa*, the mountain cabbage tree or toi, has always proved elusive. Over the past 20 years we have managed to grow plants for 4-6 years and to about 1.5m before they succumb to the Auckland heat and humidity. At present we have three specimens in different parts of the garden now in their second year. These plants were grown from seed at Oratia plant nursery and it is a perhaps a false hope that this might afford them a little more tolerance to Auckland weather. To be able to display this stunning native would be a privilege. It is endemic to the mid- altitude forests from Great Barrier Island and Coromandel in the North Island, to Fiordland in the south. Unlike other cabbage trees the crown is not usually branched. Often growing in groups they form a tropical look in a temperate zone. Trees can reach up to 8m in height with a trunk reaching 15cm diameter.

The sight of two specimens growing in large containers at the Frankfurt Botanic gardens in the late 1970's made one kiwi homesick.



*Cordyline indivisa* courtesy Colin Ogle NZPCN

## **Fernglen Garden website re-activated.**

Our thanks to Marcus Spranger and Andrea Hartmann, our new committee members who have managed to re-instate the Fernglen website. This was lost due to the lack of technical savvy of other committee members. Many thanks to Marion Jones for creating the original website. Marcus and Andrea have emigrated from Germany, and have a wealth of IT skills, and a passion for botany, which are really useful for engaging Fernglen with the 21<sup>st</sup> century. They are a very welcome addition to the Fernglen family.

See the revised website: <http://fernglengardens.nz/>

Join Fernglen facebook page: <https://www.facebook.com/fernglengardens>

We encourage all Friends of Fernglen to check out the evolving new site. As can be seen from the article on the genesis of Pukekura Park, community engagement in public gardens is hugely mutually rewarding.

## **Working Bee**

A really successful working bee was held on 18<sup>th</sup> February, with a second held on the 18<sup>th</sup> March. Working bees commence at 9am and concentrate on the older part of the garden to the fernery. All community groups and friends of Fernglen are welcome the working bees which are posted on both the website and Facebook pages. Committee members have been working tirelessly to remove rogue species, reduce the height of vigorously growing plants clear paths, and remove dead plants that didn't make it through the weather. Re-discovering lost species during a working bee is a real bonus. Marcus and Andrea again proved invaluable clearing a huge area around the Alpine house.

The suspension of the contract for our curator for over 6 months due to council regulations and hold- ups has meant that the gardens have suffered. This has meant that voluntary support at our working bees is more important than ever. Malcolm Fisher was re-instated as part time curator since mid-February and the importance of role he fills was highlighted by his absence. We look forward to his curator report in the winter newsletter in June.