FERNGLEN NATIVE PLANT GARDENS NEWSLETTER

Winter 2018

Table of Contents

Curator's Report.....2

The State of Our Native Plants – A Recent Report By DOC.....3

Book Review: *Trees of New Zealand: Stories of Beauty and Character* by Peter Janssen and Mike Hollman.....4

Possibly Our Most Unusual Native Plant, *Cassytha Paniculata*, A Parasitic Vine.....5

A Reprieve For Kauris On The North Shore.....6

A Look At Our Fascinating Epiphytic Ferns.....7

Why Is There No Hebe Collection At Fernglen?.....9

Curator's Report

A few weeks of wet, sunless, mid-winter weather put most weeds to sleep, but recent warmth has produced an awakening, so weeding has to resume. Early spring flowering is just around the corner, as evidenced by swollen buds on *Metrosideros carminea* and *Pomaderris* species. *Pittosporum umbellatum* and *P. pimelioides* have been flowering nicely.

Along the canal track ground orchids *Acianthus* and *Pterostylis* will soon be flowering. Also on this track, glow worm threads (fishing lines) are easily seen on the damp bank near where the water course crosses the track.

About 24 plants, including *Celmisias* and uncommon *Coprosmas*, were obtained from a North Otago nursery. They were planted during July's working bee. Other activities undertaken at the working bee included mulch-spreading, weeding and water blasting.

Kauri roots are exposed on a couple of tracks in Fernglen so council has supplied fabric, metal and retaining material so that these roots can be covered and protected from feet and paws. More drainage work has been done to reduce scouring of tracks.

Meanwhile it is likely that most tracks in adjacent Kauri Park will be closed until the many exposed roots on those tracks can be protected by council contractors. New steps, boardwalks, metalling, good drainage and some track re-alignment will be necessary. When that project is finished the tracks will have lost their randomness and muddy tendencies, which is regrettable for those of us who like rudimentary bush travel. But protecting kauri from *Phytophthoera agathidicida* is paramount.

There have been three organised visits to Fernglen in July. The first involved 70 children from St Mary's Primary School during the last week of term 2. A week later Kiwi Conservation Club held its monthly get-together in the Education Building, attracting a dozen children and their parents. And on 22 July about 30 Natural History Club members had a guided tour through Fernglen.

The Kaipatiki Restoration Project has been using the office under the Education room for the last couple of months. But there has been a problem connecting to the Internet and it is hoped this issue will be overcome shortly. It is wonderful that Fernglen facilities can be used for such a worthy cause.

Malcolm Fisher

The State of Our Native Plants – A Recent Report By DOC

- 402 NZ plant species are classified by DOC as threatened.
- 851 species are classified 'at risk'.
- 39 have gained an improved status.

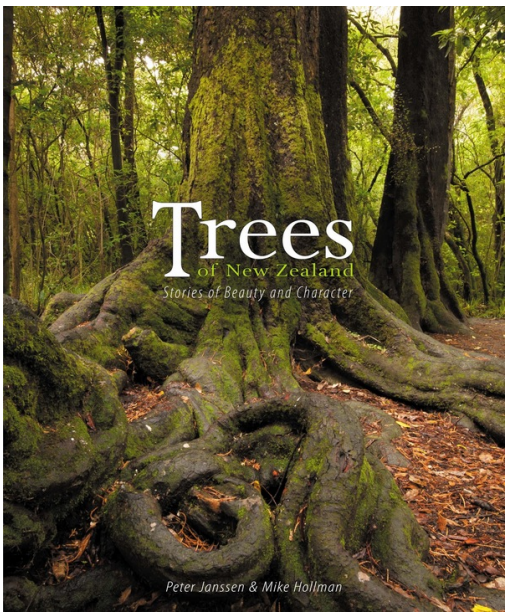
Sadly, kauris for the first time are officially registered as threatened species. The New Zealand threat classification system tracks the conservation state of 2785 known species of native vascular plants that includes flowering plants, conifers, ferns, and club mosses. 14% of our vascular plants are now threatened, up from 11% just eight years ago. There are now 113 more plants classified as threatened compared to the last assessment in 2012, with 402 plants in this category. In the 'at risk' category numbers have increased by 101 to 851 plants.

It was noted in the report that there has been significant deterioration of populations of rare plants such as, sedge, cress, and broom in the drylands of the Mackenzie and Waitaki Basins due to land being modified for agriculture. DOC have also classified around 30 myrtle species as precautionary measure as a result of the arrival windblown myrtle rust. Ongoing habitat destruction and/or habitat change remains one of the major threats to our native flora as well as browsing by possums, goats, rabbits, and other introduced animals.

You can find the DOC media release here:
https://www.doc.govt.nz/news/media-releases/2018/new-plant-status-report-shows-increased-threats/

And the complete report can be downloaded from:
https://www.doc.govt.nz/Documents/science-and-technical/nztcs22entire.pdf

Book Review: *Trees of New Zealand: Stories of Beauty and Character* by Peter Janssen and Mike Hollman



With superb photography by Mike Hollman, this publication tells the story of some of New Zealand's magnificent trees, both native and exotic.

The book is divided into a number of sections:

- Spirits and Legends
- Heritage
- Record-breakers
- Plain Beautiful
- Collections Here Today
- Gone Tomorrow

The text that accompanies the full page photographs not only describes the trees but also focusses on the people that valued and nurtured them. Natives included are, beech, kahikatea, kauri, kohekohe, nikau, puka, pukatea, rimu, rata, titoki, totara, and tree fuschia.

Interestingly, also included is *Metrosideros bartlettii*, an endandgered species from the Far North only discovered by John Bartlett in 1965. We are fortunate to have a magnificent specimen growing near the alpine house at Fernglen and young specimen thriving at the top of Ben's Ridge. The author makes an interesting point:

> *"New Zealand grows great trees emphasising an equitable climate, moderate temperatures, and good rainfall all year round coupled with rich soil."*

The book also includes mention of the New Zealand Notable Tree Trust,

> *"a charitable trust on a mission to verify and celebrate the finest trees in New Zealand. Its principle aim is to raise awareness of New Zealand's most captivating and often beautiful trees."*

There is an excellent index at the rear of the book providing locations of all the trees featured in the book. An excellent coffee table publication, a credit to the author and photographer, an enormous amount of work has gone into this outstanding publication.

Possibly Our Most Unusual Native Plant, *Cassytha Paniculata*, A Parasitic Vine

While there are a number of native plants that could be termed strange or unusual, e.g *Dactylanthus taylori* (woodrose) and *Ripogonum scandens* (supplejack), *Cassytha paniculata* is quite unique in that it has no roots and no leaves! Along with its close relative *Cassytha pubescens* they are the only parasitic vines to be found in New Zealand.

Cassytha paniculata (photo: Peter de Lange)

Interestingly, *Cassytha* seeds germinate in soil and produce a simple root structure. These roots draw up sufficient nutrients to enable a stem to develop that then parasitises a host plant. The *Cassytha* then develops houstaria, specialised root-like organs that draw nourishment from the host plant. Once the houstaria are established the terrestrial roots die. The houstaria along with the twisting twining nature of the plant growth help secure the vine to host plant. The plant then forms what has been described as 'spaghetti' mats that can spread three to four metres over a number of host plants. The wiry stems wind clockwise around the non-woody stems of the host plant as the houstaria cannot penetrate woody stems.

When I first saw *Cassytha paniculata* covering young manuka plants at the Arethusa cottage, a Forest and Bird Lodge located at Pukenui on the road from Kaitaia to Cape Reinga, I though what on Earth is that plant? I immediately thought that some foreign weed had somehow reached that isolated part of Northland but a little research provided the answer. What an intriguing plant indeed!

A Reprieve For Kauris On The North Shore

Tests on a kauri tree in the Chelsea Estate Heritage Park on the North Shore have confirmed that it does not have the kauri dieback disease. Auckland Council biosecurity manager, Phil Brown, says that while the tree does not have kauri dieback another disease has been identified.

> *"The results show that Phytophera cinnnamomii is present. This disease is widespread over the Auckland region and affects a wide range of species. It presents similar symptoms and also affects kauri but is less likely to kill a tree than kauri dieback."*

In a similar fashion to kauri dieback disease, *Phytophera cinnnamomii* is also spread via soil movement. Therefore following similar preventative procedures when visiting kauri areas will help prevent the spread of both diseases.

Mr Brown said that

> *"while it is good news that the kauri disease itself has not been detected, we do know that the disease has a very long incubation period so we may have to retest the soil again in a few months."*

The tree in question was identified during the council's track surveys that had been carried out across the North of the Auckland region. It is worth noting that not every dying kauri tree has kauri dieback.

A reprieve for the kauris on the North Shore, but for how long? Surely cleaning stations can only be effective if all mud is removed from footwear as the presently used cleaning solutions have not been proven to clean all disease spores.

A Look At Our Fascinating Epiphytic Ferns

In the land of ferns, we have 46 species that grow as epiphytes, i.e. they are non-parasitic plants that live on other plants. These ferns can be classified into four main groups that are defined by their growth habit.

Herbaceous vines:

> These species begin life on the forest floor before developing a creeping rhizome that climbs on the host plant. Common examples *Blechnum filiforme* and *Microsorum scandens*.

Creeping ferns:

> Commence life on the host plants trunk or branches, have creeping rhizomes that attach to the host plant's bark. Examples are *Pyrrosia elegnifolia* and *Mircosorum pustulatum*.

Microsorum pustulatum / hound's tongue fern (photo: John Barkla, CC BY-NC)

Tufted ferns:

> Are often found growing in tree trunk forks or among other epiphytes. They have distinct upright fountain-like form. Possibly the best example *Hymenophyllum pulcherrinnum*.

Pendant ferns:

Have a very distinctive hanging characteristic, often growing from a tree fork or in association with other epiphytes.

Asplenium flaccidum, one of my favourite ferns is probably the most well-known pendant fern.

Of the forty-six species of pendant ferns, fifty-two percent are endemic to New Zealand and forty-eight percent occur in other countries, the majority being located in Australia. Fortunately, the majority of New Zealand's epiphytic ferns are not threatened with only five species being classified as a 'at risk'. *Hymenophyllums* (filmy ferns) with over twenty species are the predominant epiphytic ferns in New Zealand.

Asplenium flaccidum (photo: John Barkla, CC BY-NC)

Why Is There No Hebe Collection At Fernglen?

While Hebe is our largest genus of flowering plants with 88 species, growing from the Kermadec Islands through the main islands to the Chatham Islands, from the coastline to alpine regions, Hebes do have specific cultural requirements that must be met if they are to thrive. They have a strong preference for an open site with more than adequate air movement, one that is well-drained and they prefer growing in isolation rather than amongst larger native plants. Hebes vary in size quite remarkably from small trees up to thirteen metres tall, e.g. *Hebe barkeri*, *Hebe parviflora*, to very small compact 'cushion-like' plants for example the whipcord hebes.

Hebe bishopiana

Here at Fernglen, we have a sloping south-facing site that receives excellent sunlight during the summer months, however it is quite often shaded during the cold winter months, conditions not made for hebes. This does not mean we have no hebes on display and below are listed species that have survived at Fernglen for a number of years:

- *Hebe albicans*
- *Hebe barkeri*
- *Hebe bishopiana*
- *Hebe diosmifolia*
- *Hebe obtusata*
- *Hebe parviflora*
- *Hebe townsonii*

Hebe obtusata

Hebe townsonii