

FERNGLEN NATIVE PLANT GARDENS NEWSLETTER

Spring 2021



Table of Contents

News from Fernglen.....	2
Some further native gems in the old part of the garden.....	4
Club mosses – the tuataras of our plant world.....	5
Book review: <i>Fortress Plant – How to Survive When Everything wants to Eat You</i> , by Dave Walters... <i>7</i>	7
The concept of masting.....	8
The ingenious relationship between manuka and soil fungi.....	9
A look at the deadly ongaonga, <i>Urtica ferox</i>	10
What's happening at Fernglen?.....	11

News from Fernglen

by Kelly Hayward, photos by Steve Cook

The first shining cuckoo to arrive at Fernglen from the Solomon Islands was at the end of September. Its distinct melodic call is now regularly heard among the resident grey warblers, tuis, fantails and kereru. Thank goodness the wonder of spring has arrived despite the ongoing COVID-19 restrictions. The soft colours of New Zealand's native flowers like those of the kumarahoe and *metrosideros carmina* have brightened the rockery and Ben's Ridge at Fernglen Native Plant gardens. Signs of new growth and korus can be seen from almost any part of the gardens. As you enter the main gate, the fiery red flowers of the Poor Knight's lily, *Xeronema callistemon* was clearly visible. This year it had 14 flowering stalks. Steve, the curator, has captured a few of the garden's spring colours in the images below.

Take care

Kelly



Metrosideros carminea (Carmine rata)



Earina mucronata (bamboo orchid)



Pittosporum cornifolium (Hauraki Gulf variety)

Some further native gems in the old part of the garden

by Neville Arbury

Cordyline indivisa – Mountain cabbage tree

From the earliest days of Fernglen, attempts have been made to culture this dramatic native plant. Unfortunately, after 3-4 years reaching about 1 metre high, they succumbed to our hot humid summers. By trying different sites in the garden, we are ever hopeful that we will eventually succeed in having a specimen grow to maturity.

Streblus smithii – Three King's milk tree

As the name implies, this large-leaved small tree comes from the Three King's Islands. For years after it was first planted it barely grew, and then suddenly, about 7-8 years ago it burst into growth and has never stopped growing. It has a very unusual form with no major trunk, many branches, quite a few almost horizontal. Our specimen is a male tree, which produces very small flowers that are crowded onto pendulous, twisted spikes that can be up to 12cm long. They emerge from the foliage and also from woody stems.

Sophora prostrata

Although named prostrata, this kowhai can grow up to two metres. Found naturally growing in the South Island from Marlborough to South Canterbury, the specimen at Fernglen near the entrance has been there for many years and is now around 1.5m. Although growing well outside its natural geographical area, our *Sophora prostrata* flowers every year and has handled Auckland's variable climate quite happily.

Myrsine oliveri

On the pathway leading to the fernery near the clump of renga lilies is a specimen of *Myrsine oliveri*, a shrub to small tree reaching five metres at maturity. Only found on the Three King's Islands, it was near extinction until all the goats were removed. Now it is reasonably common on Great Island. We have an older more mature specimen growing near the top of Ben's Ridge.

Myrsine aquilonia

Originally known as *Myrsine divaricata* "Poor Knights", as this species is common on the Poor Knight's Islands, with a limited number of sites on the mainland. Although often regarded as a shrub, it can grow into a small tree reaching twelve metres. Our original specimen planted in the old part of the garden is now four metres and still growing. An excellent plant for coastal gardens.

Leptostigma setulose

This magnificent ground cover is growing near the top of the old garden. Quite at home in full sun and partial shade, there is possibly no better native ground cover. This plant has been in the same position for many years and always looks in perfect condition.

Club mosses – the tuataras of our plant world

by Neville Arbury

Somehow these ancient primitive plants have survived unchanged to the present day. They have often been labelled as fern allies as they reproduce by spores, but they are quite different in appearance. Clubmosses are found throughout New Zealand including many offshore islands. Their preferred habitats are forest fringes, scrubland and montane areas. On bush walks, club mosses can often be seen on side of tracks. They are very distinctive often resembling dwarf conifers. Some of our more common club mosses are:

Huperzia Australian – Tufted clubmoss

A very distinct club moss in that it does not have creeping rhizomes, instead, it is forming a small clump. It can be found growing from coastal to montane areas, often appearing among rocks in open sites.

Huperzia varia – Drooping clubmoss

Can be both, epiphytic and terrestrial. Has a very handsome form when seen weeping from a tree. This club moss is found throughout New Zealand including most of our offshore islands.



Lycopodiella cernua

Lycopodiella cernua – Bushy clubmoss

A widespread club moss, its appearance is quite similar to a juvenile rimu tree. Thrives in the thermal areas around Rotorua, but is also found in open spaces, on roadsides, in scrublands and even boggy areas.



Small "forest" of *Lycopodium deuterodensum*

Lycopodium deuterodensum – Nodding clubmoss

A very distinct club moss that forms a dense colony of tangled conifer-like growth. Found throughout the North Island from Lake Taupo north. Thriving in forest margins and scrubland.

Lycopodium fastigiatum – Alpine clubmoss

Found in mountainous parts of both islands. Thriving in areas of subalpine scrub, alpine herb fields and wetlands. Can be easily recognised by its distinct orange-yellow colouring, especially when growing in more open sites.

Lycopodium volubile – Scrambling clubmoss

This unusual club moss has stems that can grow up to five metres long, spreading over other plants or along the ground. Commonly found in scrubland and forest margins. Years ago, the scrambling clubmoss was popular with florists when arranging floral displays and wreaths.

Book review: Fortress Plant – How to Survive When Everything wants to Eat You, by Dave Walters

by Neville Arbury

A fascinating publication that seeks to explain how plants manage to survive when they are constantly under attack by bacteria, fungi, insects, vegetarians and even other plants. The author closely examines the weapons that plants have at their disposal, constant vigilance, rapid communication systems, several levels of fortifications, chemical weapons and insect allies. All are employed to repel invaders.

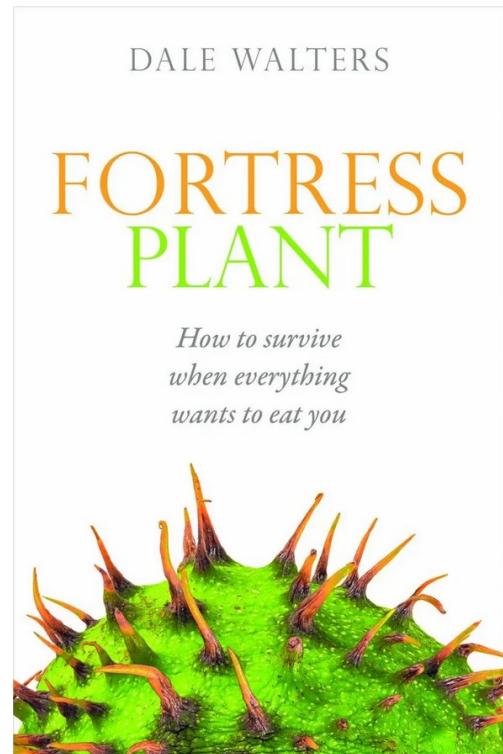
What is even more amazing is that as plant enemies find ways to overcome plant defences, plants continue to sharpen their defences by innovative new methods. As the author writes,

"With plants on the menu for so many other living things on our planet, it is surprising they survive. The fact that plants not only survive but are to be found in great abundance and variety in most environments is testimony to their ability to adapt and defend themselves against equally adaptable and persistent attackers."

However, the author notes that while in natural systems plants can certainly hold their own against attackers, problems arise when plants are put into large fields with many thousands of their genetically identical competitors. Vast areas of mono-cropping provide ideal conditions for pathogens and insect herbivores to multiply and spread. Conditions such as these are a central part of modern agriculture in many parts of the world and they stack the odds against the plants.

The ways plants can be "assisted" are discussed in the last chapters of this publication, looking at plant breeding, seed selection, developing resistance and a discussion of the merits and possible dangers of genetic engineering.

This book provided me with fascinating reading during the level 4 lockdown of August/September. My admiration for plants was raised even further! Highly recommended.



The concept of masting

by Neville Arbury

Masting or mast seeding refers to the intermittent production of large fruit crops in populations of trees. While masting is visually associated with wind-pollinated trees, it can also be observed in some woody and herbaceous native plants.

With flowering plants, a masting year is signalled by massed flowering. With our native beech forests, masses of small flowers turn the forest canopy a rusty red. A sure sign a masting year is about to occur.

In New Zealand, the phenomenon of masting is quite common in a range of woody and herbaceous species. Trees include the conifers *Dacrydium cupressinum* (rimu), *Dacrycarpus dacrydioides* (kahikatea), *Podocarpus totara* (totara), and *Prumnopitys taxifolia* (matai). The flowering species include *Coprosma pseudocuneata*, *Dracophyllum traversii*, *Elaeocarpus dentatus*, *Fuscospora* spp., *Hoheria glabrata*, *Lophozonia menziesii*, *Metrosideros umbellata*, *Olearia colensoi*, *Pseudopanax colensoi* and *Rhopalostylis sapida* (nikau). Herbaceous plants include *Aciphylla aurea*, *Aciphylla horrida*, *Astelia nervosa*, *Celmisia lyallii*, *Celmisia viscosa*, *Chionochloa* spp., *Phormium cookianum* and *Phormium tenax*.

Masting can occur locally or regionally, in some years it can even be more widespread. In our beech forests, a mega-masting year is when at least fifty percent of the trees are masting.

Unfortunately, the abundance of mast seed causes an epidemic of introduced predators, rodents, mustelids and possums, with the consequent impact on our native fauna. Predicting mast years is therefore considered critical for pre-emptive control of introduced predators. There is still conjecture over the exact climatic factors that produce mast year, however, what is known is that they are occurring more frequently than in the past years.

The ingenious relationship between manuka and soil fungi

by Neville Arbury

The success of manuka, *Leptospermum scoparium*, as a pioneer plant in disturbed areas, is largely due to its ability to grow in low-fertility soils. It is able to thrive in these conditions because it attracts help from fungi. More than thirty mycorrhizal fungi have been recorded growing under manuka. Only our beech trees have more.

Mycorrhizae are mutually beneficial relationships that develop between fungi and many woody plants. The fungal partner extracts soluble carbohydrates from the plant and in return the plant benefits by receiving a supply of mineral ions and water, drawn from the soil by the very fine feeding threads of the fungus. The relationship benefits both partners, enhancing plant growth and health. Mycorrhizal "plants" grow better, are more resistant to diseases and pests, are more drought tolerant and recover quicker after prolonged droughts.

The relationship between fungi and plant roots has existed for many years as illustrated by ancient plant fossils that date back to the early history of the plant kingdom.

The most visible evidence of mycorrhizal fungi is the appearance of toadstools under manuka bushes in early autumn.

A look at the deadly ongaonga, *Urtica ferox*

by Neville Arbury

Ongaonga or tree nettle naturally occurs through both islands on the margins of lowland and coastal forest. Other nettle species include *Urtica australis*, the southern nettle and *Urtica perconfusa*, the swamp nettle.



While New Zealand has no dangerous animals, this particular stinging nettle has enough poison to kill a fully grown person. While there are recorded deaths, most people stung by this nettle will survive, although they will be affected for several days. The cause of this extreme discomfort is the poisonous syringe-like spines. The tips break off when disturbed, releasing toxic substances into the skin. This poison is made up of histamine, serotonin and acetylcholine, which enter the bloodstream and can cause a lack of motor coordination and convulsions. The skin becomes inflamed and very painful. Ongaonga has killed dogs, cattle and horses. For some reason possums, goats and deer can eat ongaonga with no obvious ill effects.

Maori believed that ongaonga was a plant to slow people down, to prevent them from moving freely. It has been recorded that Maori planted ongaonga as protection against enemies, growing it in defensive palisades among manuka stakes. Traditionally, Maori boiled the bark of ongaonga as a treatment for eczema, it would be applied to the skin or drunk.

The one positive feature of ongaonga is that it provides a safe habitat for the red admiral butterfly, *Vanessa gonerilla*. Eggs are laid on the new leaves of the plant. The caterpillars spent up to six weeks feeding on the leaves. Caterpillars are protected inside the plant from birds, spiders and other insects.

The word Urtica is Latin for stinging nettle, ferox means fierce, wild or savage. The Maori word ongaonga refers to something that is spiky, irritating or annoying.

What's happening at Fernglen?

Working bees

Regardless of the weather, working bees occur at Fernglen **on the second Saturday of every month from 9am onwards, until about 12 noon.**

The working bee is a great way to meet others, learn more about native plants, weeds and pest control. There is always a job to be done in the garden or in the education room.

No gardening experience is necessary and all ages and abilities are welcome. Gloves and gardening tools can be supplied.

Looking forward to seeing you there.

Regrettably the monthly working bees are on hold until COVID restrictions ease.

Educational tours

Are you involved with a school or an education group and would like to learn about New Zealand native plants? A unique collection of plants from all over New Zealand grows at Fernglen. To see what is on offer please contact us

on email: fernnglen.nz@gmail.com

or phone: 021 236 5800

Room hire

The Fernglen Education Room is available for hire at very competitive rates. Please contact us

on email: fernnglen.nz@gmail.com

or phone: 021 236 5800

Naylor Love

Naylor Love are committed to seeking sustainable construction practices. Their history in New Zealand makes an interesting read on their website:

<https://www.naylorlove.co.nz/about-us/our-history/>



**Naylor
Love**



Botanical Art at Fernglen

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