



Botanical Trip to
Tasmania, Australia
& South Island, New Zealand

2011/ 2012

by
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October 15th 2011

I arrived in Sydney, Australia. I had just one day in Sydney to visit the Royal Botanic Gardens.

Sydney enjoys a temperate climate with a mild winter, and has more than 340 sunny days a year. Average minimum temperatures in the winter months of June through to August is around 9 degrees Celsius. The summer season is from December through to February. A nice spring day for my visit. The range of plants grown is quite different to what I am familiar with, nice to see what I know as glasshouse/ tropical plants thriving outside.

The Royal Botanic Gardens was established in 1816 and occupies 30 hectares in the heart of the city. At the edge of Sydney Harbour, the gardens occupy one of Sydney's best positions. The Domain surrounds the Royal Botanic Garden and is a public area with a great collection of trees, especially *Ficus* species, there are some especially large *Ficus watkinsiana* or strangling fig around the park area.



Brachychiton rupestris, the Queensland bottle tree.

The gardens themselves are very well maintained with great collections and attract over 3 million visitors a year. Areas in the garden include a Begonia Garden, an oriental garden, a native garden, a palm grove, a rare and threatened plants area and a very impressive succulent garden. The rare and threatened display features plants from around the world that are rare or on the brink of extinction. It is very provocative with information on specific plants including origin, status and threats.



Bromeliads growing on the trunks of palms in the Palm Grove



Bats resting during the day in the gardens.

The 22, 000 strong colony of grey-headed flying foxes rest in the gardens during the day, in the future they may be moved because they cause damage to trees in the gardens. They are however a great sight flying from the gardens over Sydney Harbour at dusk.

17th October 2011

I flew to Hobart, Tasmania

Tasmania is a relatively small, mountainous, island with a long history of geographic isolation from mainland Australia. For such a small island state, Tasmania has a rich diversity of vegetation. Currently there are almost 2,498 known native vascular species in Tasmania; 637 of which are endemic to Tasmania.

Many of the vascular plant species in Tasmania are relicts from ancient times when the island was part of a larger landmass known as Gondwana, particularly the vegetation of the west and southwest of Tasmania and genera such as *Nothofagus*, *Eucryphia*, *Phyllocladus* and *Lagarostrobos* from the time when Australia was part of this larger landmass. This included New Zealand, South America, Africa, Madagascar, India, Antarctica and mainland Australia. Tasmania has many species of ancient origin that are closely related to species in some of these countries, particularly South America and New Zealand. The drier east and north vegetation is dominated by the more recent Australian element characterised by the dominant genus *Eucalyptus*.

Tasmania has very diverse habitats created by the large variation in altitude, water availability and soil types. As a result Tasmania has diverse and interesting vegetation that broadly reflects an east to west change in climate conditions from the dry east coast to the wet west coast and in geology from dolerite and granites in the east to quartzites in the west. Vegetation types include, alpine vegetation, temperate rainforest, wet sclerophyll forest, dry sclerophyll forest, heathlands, wetlands and moorlands.

Hobart has a mild temperate oceanic climate. The highest temperature recorded was 40.8 °C on 4 January 1976 and the lowest was -2.8 °C on 25 June 1972. Compared to other major Australian cities, Hobart has the second fewest daily average hours of sunshine, with 5.9 hours per day. However, during the summer it has the most hours of daylight of any Australian city, with 15.2 hours on the summer solstice.



View of Hobart from the summit of Mt Wellington. The mountain rises to 1,271 metres over the city. It is frequently snow covered, sometimes even in summer.

I spent my first month in Tasmania doing work experience at the Royal Tasmanian Botanic Gardens, Hobart. During this time I stayed with a trainee from the gardens just outside the city centre and close to the foothills of Mt Wellington.

The Royal Tasmanian Botanical Gardens (RTBG)were established in 1818, just two years after the Sydney Botanical Gardens were founded, the RTBG is one of six Royal Botanical Gardens in the world.

The gardens are located on the Queens Domain beside the Government House, the historic Beaumaris Zoo site and Soldiers Memorial Avenue all of which are set within a larger landscape of remnant native grasslands and woody grasslands. The RTBG itself is approximately 14.5 hectares and has a temperate climate being situated beside the Derwent River. Mean temperatures range from 11.7°C at night to 21.5 °C during the day in summer and 4.4°C to 11.5 °C in winter and severe frosts are infrequent. The long-term annual average rainfall at the site is 567.9mm (data collected at the Gardens since 1841) but in the past 10 years has been lower at 463.6mm. Sea breezes from the southeast occur in summer and have a moderating effect on temperature.

The gardens hold historic plant collections and a large number of significant trees, many dating from the nineteenth century. It also has a number of important conservation collections of Tasmanian plants and the world's only Subantarctic Plant House.

Some of the oldest plants in the gardens include the conifers bracketing the main entrance including a *Sequoiadendron giganteum*, *Cedrus deodara*, an *Abies pinsapo* or Spanish fir and a huge *Phoenix canariensis* or Canary Island Date Palm all from at least 1910.

I felt a lot more familiar with the range of plants here compared to Sydney, being quite similar to the range at Tresco, Isles of Scilly. Plants from areas such as South Africa, Chile, New Zealand and the Mediterranean grow very well here.

There are about twenty gardeners, each with their own section to take care of. Horticultural students also help with the care of the gardens as do convicts who do a sort of community service at the gardens doing most of the support work such as cutting the grass.



The Subantarctic Plant House was built in 2000 and displays plants from Macquarie Island. This unique flora is displayed against a panoramic mural of Macquarie Island. The flora is related to other subantarctic islands, especially those to the south of New Zealand. Plants rarely grow over 1 m in height, though the tussock-forming grass *Poa foliosa* can grow up to 2 m tall in sheltered areas. There are over 45 vascular plant species and more than 90 moss

species, as well as many liverworts and lichens. Woody plants are absent. The island has five principal vegetation formations: grassland, herbfield, fen, bog and feldmark.

The Subantarctic House measures is cooled by piping cold water at ground level, together with air conditioning and fogging mist systems which aim to replicate the harsh conditions of Macquarie Island.

Macquarie Island, now a World Heritage Reserve, is part of Tasmania's territory almost 1500 kilometres southeast of Hobart, and lies just outside of the antarctic convergence, about halfway between New Zealand and Antarctica where cold water from the southern ocean meets warmer northern waters. Located in a geologically active region notorious for earthquakes, the Island rose about 600,000 years ago making it very young geologically speaking. It's quite small, 34 kilometres long, 5.5 kilometres wide and up to 433 metres above sea level. Being in the path of the "Furious Fifties", it experiences cool, wet, windy conditions and considerable variation in summer and winter daylight hours. Air temperatures vary only 4 - 4.5 degrees centigrade from mid winter to mid summer. It receives about 1050 mm of precipitation per annum which falls on more than 320 days of the year!

The Island, which has no tree or shrub layer, is home to cushion plants, (*Azorella macquariensis* and *Colobanthus sp*), grasses(*Festuca contracta* and *Agrostis sp*) and the fern, *Polystichum vestitum* so grows here. Representative plants on display at the subantarctic house include the famous Macquarie Island Cabbage, *Stilbocarpus polaris* once used by whalers to ward off scurvy, *Poa foliosa*, a grass tussock which can reach 2 metres tall and gives the Island its lush green appearance, and the hairy rush *Luzula crinita*. *Acaena magellanica* is an attractive ground cover also from this area. Two refrigerator containers house extra stock for the sub antarctic house.

While at the gardens I mostly worked in the native area, some particularly nice natives for ornamental use included .



Baurea rubiodes

A member of the Cunoniaceae family, *B. rubiodes* occurs naturally in wet, shaded areas of New South Wales, Victoria, Tasmania, and Queensland



Outside the visitors centre is a good display of *Banksia integrifolia*, the display demonstrates how this species varies in form in different parts of the state.

Hibertia procumbens is an attractive native groundcover, a very compact species with prolific flowers. *Lepidosperma ensiforme*, the Arching Swordsedge is suitable for wet areas and a good architectural plant.

While at the gardens I was fortunate to be able to go on a number of field trips with staff:

On the 25th of October I went on a field trip to the foothills of the Dazzler Range to look for *Tetratheca gunnii*, commonly known as shy susan. I went with Lorraine, the propagator and Mick who works for Parks and Wildlife and has been monitoring this species for many years. Some areas with populations of *T. gunnii* have been fenced off to prevent browsing by animals. It was these areas and other unfenced areas that we went to look at.

Belonging to the Tremandaceae family, *T. gunnii* is generally the smallest leaved and flowered species of the genus. This perennial herb with a straggling growth habit is endemic to Tasmania and restricted to an area of less than 25km sq. The soil of the area is Serpentine, this soil type is internationally recognized for supporting high levels of endemism. As serpentine is often restricted in area, its associated endemics are often rare.

It is thought that *T. gunnii* is pollinated by a method known as 'buzz pollination', whereby the vibration from the 'buzz' of the native bee causes the flower to release pollen.

There are fewer native bees now however and bumble bees are too big for some native flowers, so instead of entering the flower for nectar they bore a hole in the side of the flower and don't pollinate it. This may be why plants like *T. gunnii* are not doing very well.

The first area we looked at had been burned two years previously. There was a lot of *Stackhousia monogyna* in flower under blackened *Eucalyptus* trunks and grass 'lawns' kept trimmed by wombats and wallabys. The enclosed area had very tall grass as it had not been grazed, here we found over thirty specimens of *T. gunnii*, 10 more than the previous year. This was the most successful area. Other areas numbers were much the same or had decreased, especially where fences had been damaged and animals could graze.

In most areas the habitat of *T. gunnii* seemed to be dominated by *Eucalyptus amygdalima*(black peppermint) and *E. ovata*(black gum) with a dominant understory of *Epacris virgata*, *Hibbertia riparia* and *Baeckea ramosissima*.



Myself and Mick looking for *T.gunnii*.



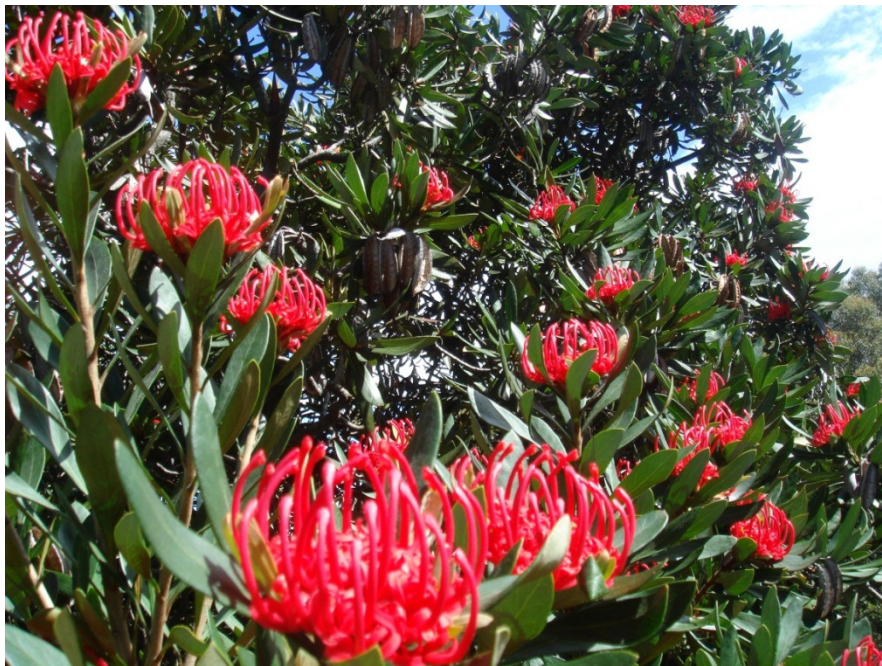
Hibbertia riparia was in full flower and abundant. It is a very attractive groundcover. It is pictured with *Drosera sp.*

In Tasmania it is a widespread and very common prostrate plant that is found in heathy vegetation ranging from coastal heath in eastern Tasmania to subalpine areas to button grass plains in western Tasmania. It is used as ground cover in the gardens and is very effective once established.



The drive up to the Dazzler Range was also very interesting. Driving from south to north through the midlands I passed through a lot of farmland and grassland. The lowland temperate grassland types have been recognised as some of the most threatened vegetation communities in Australia. As these areas were the easiest to cultivate and are also easily taken over by exotics. There was also a lot of dead standing eucalyptus trees throughout grassland areas. This tree die back as it's known is because of the intense pressure they are put under by livestock. Soil compaction, soil nutrient changes from animal droppings and exposure due to the removal or death of neighbouring trees are the main reasons for the large number of tree deaths in the midlands. In some areas new trees were being planted with protection from livestock.

While in Hobart, I made a few trips up Mt Wellington and exploring the surrounding area.



This is the Tasmanian Waratah, *Telopea truncata*. It was growing at Ferntree on the way up to Mt Wellington. Specimens higher up the mountain flower a bit later. In the mountains their

crimson red flowers enable them to be seen "at a great distance" which is the meaning of the Greek word from which *Telopea* is derived. It is a member of the Proteaceae family and very ornamental. While it should grow well in frost free areas in the UK once established, it would be too tender for colder areas. *Telopea "Braidwood Brilliant"* is a more hardy cultivar, grown in the gardens. It is a cross of *Telopea speciosissima* and *Telopea mongaensis*. *T. speciosissima* (the New South Wales Waratah) is the state floral emblem of New South Wales and *T. monogaensis* had smaller flowers but it a hardier species.



This is a west coast yellow form of *Telopea truncata* which I saw at the native nursery, Plants of Tasmania at Fern Tree.

Fern Tree (at 450 metres), is Tasmania's highest community of any size. The name Fern Tree is adapted from the common name of the plant *Dicksonia Antarctica*, which grows abundantly in the area.

This Fern Tree track up Mt Wellington follows the creek bed which had little water when I visited. The vegetation is predominantly 45 year old wet sclerophyll which has regenerated after the devastating wildfire of 1967 which burnt most of Mt Wellington. It consists predominantly of *Pomaderris apetala*, *Bedfordia salicina*, *Olearia argophylla* and *Eucalyptus obliqua* . These species are typically found on dolerite bedrock. There are some larger eucalypts from the predisturbance stand which bear burn scars from the fire. This track gets its name from the many large manferns, *Dicksonia antarctica*. This was my first time to see tree ferns in the wild and it was a very impressive sight. The Fern Glade is cool, closed and dark, with light filtering through the canopy and tree ferns lining the wet gully. Open areas were filled with young tree ferns while older ones had sizable trunks.





Hakea lissosperma was abundant along the track, in the lighter forest further up the mountain. Its very attractive flowers were sweetly scented. The fruit is a hard woody capsule, typical of hakeas. This species is widespread in high rainfall areas from sea level to high altitudes.



Bedfordia salicina was also common, it makes a shrub to small tree. Leaves have a dark green upper surface, and silver-hairy below. The young wood is hairy white. *B. salicina* is common and widespread in wet gullies and wet sclerophyll forests at lower altitudes and I saw a lot on the Pipeline track to Mt Wellington.



Richea dracophylla, is one of ten species of *Richea* native to Tasmania. A sparsely branched shrub often with one main stem, leaves are spirally arranged with bases sheathing the stem. Dense flowering spikes appear at the ends of a few branches and old blackened flowering spikes persist on branches. This is a very impressive plant. It has been cultivated in Tasmania, with propagation by seed more successful than by cuttings



Eucalyptus coccifera growing close to the top of the mountain, wherever it can find shelter.

E. coccifera was the dominant Eucalypt towards the top of the mountain. The Tasmanian snow gum or the Mount Wellington Peppermint, as it's locally known, is a native tree of Tasmania. It is a vigorous tree with attractive juvenile leaves which are rounded and green. Mature leaves are grey and elliptic and smell like peppermint. As a tree it develops peeling

grey and white bark often tinged with pink. It is grown in the UK and can be hard-pruned annually and kept as a shrub or to promote the juvenile leaves. Flowers are creamy white.



In other areas where it has managed to grow to tree size it shelters other plant species.



Acaena novae-zelandiae

Tasmania has seven species of *Acaena*. They are all herbs, sometimes slightly woody at the base and have pinnate leaves. They can make very effective groundcover.



On my last visit to Mt Wellington in January I walked along the Organ Track and saw the very lovely *Brachyglottis brunois*, a rare daisy tree found in only three areas in the state

On the 25th October I went for a walk around Chauncy Vale Wildlife Sanctuary, it is one of the oldest private conservation areas in Tasmania.

Chauncy Vale is located 40km north of Hobart and 4km east of the township of Bagdad.



Here I saw *Caladenia alpina*, a native species of orchid in flower.

Knocklofty Reserve

Knocklofty Reserve is an area I visited in the foothills of Mt Wellington. Dominantly a dry sclerophyll forest, it covers 140 hectares with over 300 species of native flora.

Eucalyptus was the dominant tree with an understory of Acacias, leptospermum and bedfordias. Where Eucalyptus wasn't dominant, acacias made taller trees.



Pultenaea juniperina, or Prickly Bush-pea, is a plant of the family Fabaceae native to Eastern Australia and Tasmania. It is a shrub to 3 metres with showy yellow-orange flowers with red markings. The leaves are 10 - 25 mm long and 1 - 4 mm wide with a pungent leaf apex (stiff pointy tip), hence the use of "Prickly" in the common name. It is widespread and common in heaths, sclerophyll forests and woodlands in Eastern Australia and Tasmania.



Stackhousia monogyna, commonly known Creamy Candles, is a perennial herb species in the family Celastraceae. It is native to Australia, including Tasmania. Plants grow to 70 cm high and produce a terminal spike of white, cream or yellow flowers between August and January in the species native range. It is found in a wide range of dry vegetation types, including grasslands, grassy woodlands and dry sclerophyll forests and heaths.



Delwynia glaberrima

Tasmania has three native species of Parrot Peas (*Dillwynia* spp.). All are erect shrubs with very narrow leaves that are cylindrical or nearly so, and with a channel along the top, where the midrib is. All three are quite common in heathy vegetation.



Pomaderris intermedia, belongs in the Rhamnaceae family. On mainland Australia, *P. intermedia* is found on the open forests on the east coast & ranges of northern New South Wales, through to the woodlands & heaths of southern - central Victoria. In Tasmania the population is much harder to find, with small populations in the northeast, on the east coast and Bass Strait islands so I was lucky to see these plants in full flower.

Relatively quick growing, *P. intermedia* makes a small tree or large shrub. The young branches, flowering shoots, capsule, leaf stalks and undersurfaces of the leaves are all densely covered in short hairs. The leaves are stalked and ovate in shape. The profuse yellow or bright creamy yellow flowers are clustered on terminal branches in large flower heads. The showy flowers and dark green foliage with a white underside are very striking. *Pomaderris apetala* or dogwood, is widespread and abundant tree or large shrub species. It is one of the main components in the canopy of wet sclerophyll forests.



Clematis aristata, known as Goat's beard or Old man's beard, is a climbing shrub of the Ranunculaceae, family, found in eastern Australia in dry and wet forests of Queensland, New South Wales, Victoria and Tasmania. It has attractive star shaped flowers with four narrow tepals of pure white or cream colour up to 70mm. The seed borne on the female plants are the typical fluffy seed-heads characteristic of many *Clematis* species as are the trifoliate leaves.

Acacia verticillata generally grows as a rounded shrub, it is hardy to about -7 degrees and can be pruned to make a hedge. *Acacia dealbata* was growing as an understory plant, though there were larger specimens where it was not dominated by *Eucalyptus*. *Leptospermum scoparium* was another common understory plant and *L. lanigerum* was also present, it generally grows in wetter areas.



Diplarrena moraea

<http://www.anbg.gov.au/gnp/gnp5/diplarrena.moraea500.jpg> *Diplarrena* is a monotypic genus, endemic to Australia. It is a widely distributed monocot, found growing naturally on a variety of soil types in Victoria and Tasmania and in the south-east region of New South Wales. It is common in Tasmania where it is known as the White iris. The stiff iris-like leaves are flat and linear in shape. Flower stems are usually longer than the leaves, reaching a height of around 100 cm. A number of flowers, from two to six, emerge usually one or two at a time from a single terminal head. *D. moraea* was flowering best in full sun, it is also frost hardy.



Lomandra longifolia

Tasmania has two species of *Lomandra*. These are both common sedge like species of dry, open forests and grassy areas. *Lomandra longifolia* is one of the most abundant species in grasslands and grassy woodlands in Tasmania, and grows to about 1m tall. The other species, *L. nana* is much smaller.

November 1st - Trip to Bruny Island

Bruny Island is an island off the south-eastern coast of Tasmania, from which it is separated by the D'Entrecasteaux Channel. Both the island and the channel are named after French explorer Bruni d'Entrecasteaux.

Geologically, Bruny Island is actually two land masses, North Bruny and South Bruny, that are joined by a long, narrow sandy isthmus. Outside its settlements the island is covered in grazing fields and large tracts of dry eucalyptus forest. Inland forests continue to be logged, but other large sections - mostly along the southeastern coast - are preserved as the South Bruny National Park.

I got the ferry across to Bruny from Kettering, a small town about 40 minutes north of Hobart. I went to South Bruny National Park for a walk around the Labillardiere Peninsula. The peninsula takes its name from Labillardiere, a naturalist with the French expedition led by Bruni d'Entrecasteaux. The walk was through some lovely coastal heathland and dry sclerophyll forests. In a recently burned area of Eucalypt scrub which was dominated by *Eucalyptus amygdalina*, black peppermint, I saw quite a few orchids. Most Tasmanian orchids flower in spring and are common on the Labillardiere Peninsula. One orchid I saw was *Calochilus robertsonii* or the Purple Beard Orchid, a very pretty terrestrial, orchid.



Caladenia alpina was another fairly common orchid as were leak orchids.



Prasophyllum concinnum

Commonly known as the Trim Leek Orchid, until 1992 it was believed to have been extinct as it had not been seen since 1947. In 1992 the Parks and Wildlife Service employed a special project officer to compile an atlas of Tasmanian orchids. Orchid enthusiasts assisted by sending specimens from all over Tasmania. These were sent to Canberra for identification and inclusion in the National Herbarium.

Among them was a small collection of leek orchids by Hans and Annie Wapstra of Blackmans Bay near Hobart, who regularly searched the sandy heath lands in the area to see what orchids were flowering. It was listed as rare under the Tasmanian *Threatened Species Protection Act 1995* but removed from the list following the 2000 review as it has since been found in quite a few areas. It has gone from extinct to rare to being de-listed in 5 years!



Drymophila cyanocarpa, Labillardiere Peninsula, Bruny Island

Drymophila cyanocarpa, also known as Native Solomon's Seal, is a species of flowering plant in the family Alstroemeriaceae. It is a herbaceous perennial, growing to about 60cm in height. Leaves are 3 to 8 cm long and 5 to 15 mm wide. Pendant white or cream flowers are followed by blue to purple berries. It occurs in Tasmania, Victoria and New South Wales.

I visited Cape Bruny on the southern tip of the island.



Pimelea nivae in flower at Cape Bruny.



Blandfordia punicea or Christmas bells are one of the particularly attractive heathland species found in the park and their flowers were just beginning to open.

Bruny's channel side is far more sheltered and contains some impressive stands of grass trees. *Xanthorrhoea australis*. The Grass-tree or Black Boy as its commonly known is a unique Australian plant. It is the most common species of the genus *Xanthorrhoea*. Its trunks are usually fire-blackened, can grow up to several metres tall and are often branched. *X. australis* is not often seen in bloom because of this species need for fire to stimulate its reproductive cycle. However, if it does flower, a large flowering spike grows out of the top of the plant. *X. australis* has leaves which are softer and generally less rigid than other Xanthorrhoeas. Old leaves hang down forming a distinctive skirt-like feature that partly covers the fire-blackened trunk. *Xanthoreas australis* is the only monocot with secondary root



formati
the sheltered side of Bruny Island.

Xanthorrhoea australis growing on

This amazing and ancient plant has been seriously reduced in number over the last two centuries for land clearance, land improvements and the spread of the phytophthora fungal disease.

I heard some sad stories of landowners digging up these very slow growing plants to sell, some in large numbers, only for them all to die due to their difficulty to transplant and their need for sandy, well-drained habitats.

Well having heard these stories and seen just small specimens it was great to see large, old grass trees on Bruny.

Cultivation is not easy with the seed taking up to a year to germinate and young plants growing at a rate of only a centimetre or so a year.

17th November- Cygnet

Cygnet is a small town 55 kilometres south west of Hobart, in the Huon Valley in Tasmania. I stayed here for the weekend after my work at Hobart Botanics. The Huon Valley follows the course of the Huon River as it flows into the D'Entrecasteaux Channel. Both the Huon Valley in Tasmania and the Bordeaux region in France lie at 43 degrees on the map of the world. Both have a maritime climate and the rainfall has a similar pattern. The Huon Valley is an important area for crop production. Traditionally it produced large quantities of apples. As they are mostly imported these days, soft fruits are now more commonly produced. I also noticed a lot of land in the area had been set aside for wildlife. The Land for Wildlife scheme (LFW) was established in Tasmania in 1998. The LFW scheme encourages and supports landowners who actively encourage wildlife on their land

A large proportion of Tasmania's wildlife species and habitat types which are poorly reserved on public land occur on privately owned land so it makes sense to encourage landowners to take care of their native flora. Benefits of membership to the LFW scheme include an assessment of the area and information and advice on habitats and species, a book which provides information on native fauna and their habitats, a regular newsletter and a sign to indicate membership in the scheme.

Mount Field National Park November 20th



Eucalyptus regnans, Mt Field National Park

Mt Field is one of Tasmania's most diverse national parks just 64km north west of Hobart. Tall Eucalyptus forests dominate the base of the mountain, the drive up the mountain goes through rainforest along the Lake Dobson Road, to alpine vegetation at the higher elevations Russell Falls is at the base of the mountain and is a forest of towering tree ferns, *Dicksonia antarctica*. The winding road that leads to the higher slopes of the mountain pass through an ever-changing succession of plant communities.



Dicksonia antarctica at Victoria Falls, Mt Field.



Eucalyptus johnstonii, yellow mountain gum is a tall forest tree found on the mountains and plateaus in southeastern Tasmania. It's smooth, colourful bark is very attractive. I saw some smaller specimens growing by the road on the way up to Dobson's lake.



The Pandani Grove near Lake Dobson. A grove of *Richea pandanifolia*. The dominant surrounding tree species are *Athrotaxis selaginoides*, the King William pine and *Nothofagus cunninghamii*, myrtle beech.

Richea pandanifolia, Pandani or giant grass tree is a species of flowering plant in the family Ericaceae, endemic to Tasmania. It usually grows as a single stem or occasionally branched. The species is more successfully propagated by seed than by cutting and should be suitable for cool climate gardens.



There was a lot of *Eucalyptus pauciflora*. The snow gum has beautiful coloured bark and is very hardy.

I walked around Lake Dobson. At the bottom of the mountain it had been a lovely day. By the time we reached Lake Dobson it was snowing!

Cushion plants were interspersed with pineapple grass bogs and were growing in very exposed areas. Sphagnum bogs were around the lake.



Astelia alpina, pineapple grass

Several Tasmanian endemic conifers were growing in sub alpine areas including *Athrotaxis cupressoides*, the pencil pine. *Athrotaxis selaginoides*, the King Billy pine and several dwarf pine species including *Podocarpus lawrencii*, mountain plum pine and *Microstrobos niphophilus*. Known as the dwarf pine.



Richea scoparia was flowering at higher altitudes at Mt Field. This hardy plant is endemic to Tasmania where it is an abundant plant of mountainous areas. It is a compact, often rounded shrub branching mostly from the base and in less exposed areas it can grow to 2 metres high. The plant is spiny to touch and can make impenetrable thickets. Its flowers are very attractive.

22nd November - Orford

I got the bus to Orford in order to get the ferry to Maria Island from nearby Triabunna. Orford is an attractive coastal hamlet situated on the east coast of Tasmania, some 73 kilometres northeast of Hobart. The village is centred around the mouth of the Prosser River. I spent a day following the river through dry sclerophyll forest.



Stylidium graminifolium was abundant in some areas, especially steep rocky parts. This trigger plant as it is commonly known has one of the widest ranges in the *Stylidium* genus, extending from Tasmania to Victoria, New South Wales, and Queensland over to South Australia. Its most common habitat is dry sclerophyll forests with nutrient-poor soil conditions. Triggerplants are so called because of the pollination ‘trigger ‘ mechanism, made up of a sensitive floral column which reacts to touch, showering pollen on intruders. This mechanism is unique to the Stylideaceae family. *S. graminifolium* is able to survive cold temperatures down to -10°C, making it suitable for growing in the UK and Ireland. It has a relatively long flowering period and as I saw in a local cafe makes a good cut flower. It can be a little difficult to germinate and this can be improved with specific conditions such as smoke treatments and higher temperatures to simulate a bushfire, though germination can occur without these conditions. These germination requirements reduce the risk that it will become an invasive species. It is also able to grow on nutrient-poor soils and withstand significant drought. *S. graminifolium* “Tiny Trina” is a cultivar found in the UK.



Banksia integrifolia in flower, showing new growth and old flower cones whose seeds were a favourite with the black cockatoo.

Maria Island - 23rd November

I got the ferry to Maria Island and took my bicycle as the island is quite large and the main tracks are well maintained for cycling.

Maria Island is a mountainous island off the east coast of Tasmania. The entire island is a national park. Maria Island National Park has a total area of 115km², which includes a marine area of 18.78 km² off the island's northwest coast. The island is about 20 km in length from north to south and, at its widest, is about 13 km west to east. At its closest point (Point Lesueur), the island lies four kilometers off the east coast of Tasmania.

The island has had a mixed history, including two convict eras, two industrial eras, a farming era and, finally, becoming the national park that it is today.

I arrived at Darlington Bay, this is the one town on Maria Island. It lies near the northern tip of the island. Darlington is beautiful and historic and has many wonderful old buildings, but it has no permanent inhabitants other than a few park rangers.

Maria Island takes the form of a figure-eight, with the northern section of the island significantly larger than the southern. Both parts of the island have some steep cliffs and they are joined by a tombolo about 3 km long known as McRaes Isthmus. The highest point, Mount Maria, is in the northern part of the island and stands 711 m above sea level. I went up this mountain the first day I got to Maria. It was about a five hour walk which gets steeper and more difficult the higher you climb but the view from the top made it all worthwhile.



On the way up the mountain I saw many interesting plants. *Callitris rhomboidea* or the oyster bay pine. It is a species of conifer in the Cupressaceae family. It is native to South Australia, Queensland, New South Wales, Victoria, and Tasmania and is on the ICUN list of threatened species. It is found on the east coast of Tasmania and Flinders Island. Although it will regenerate well after fire, frequent fires will eliminate it. It was more of an understory plant on Maria.



Tasmannia lanceolata showing stunted growth on the mountain.

Tasmannia lanceolata, known in Australia as the Mountain Pepper, is a shrub native to woodlands and cool temperate rainforest of south-eastern Australia and in alpine rainforests of Tasmania. The shrub varies from 2 to 10 m high. Stems are quite red in colour. The small cream or white flowers appear in summer and are followed by black globose, two-lobed berries which appear in autumn. The leaf and berry are used as a spice, usually dried.



Olearia archeri or the rock field daisy bush

Phyllocladus aspleniifolius, the celery top pine is an endemic gymnosperm of Tasmania, Australia. While I saw it growing as a shrub in alpine vegetation, it is found in rainforest as a dominant and in eucalypt forest as an understorey species. It is confined to areas of high rainfall and low fire frequency. Its unusual foliage is very attractive.



Open woodland was dominated by *Eucalyptus globules* or the blue gum, Tasmania's floral emblem. These gums, unlike many others are easy to distinguish because of their large single gum nuts. The young leaves have a waxy blue colour, are oblong shaped and form directly on squared stems. I also spotted some green swift parrots in the trees. This migratory bird returns to the east coast of Tasmania in August to nest in the hollows of trees and breed. It is a nectar-eater and has a specially adapted brush tongue, much like that of a honey eater, with which it obtains nectar from the large blue gum blossoms.

Understorey plants included *Acacia dealbeata*, known as Silver Wattle or Mimosa, a species of Acacia native to southeastern Australia in New South Wales, Victoria, Tasmania, and the Australian Capital Territory. It is fairly common at home, grown mainly for its bright and abundant flowers and is naturalized in some areas such as the Mediterranean. A fast growing tree, in the wild trees generally do not live longer than 30 to 40 years, after which where

they are succeeded by other species where bushfires are excluded.

Acacia melanoxylon, commonly known as blackwood was also present as was *Acacia terminalis* or the Sunshine Wattle and *Acrochiche depressa*, native currant. *Eucalyptus oblique* was also growing in this area. Commonly known as the browntop stringybark it has long furrowed fibrous bark, and a stringy appearance, the stringybark's nuts are smaller and form in small groups.

As I cycled north along the western side of the island, other common understory plants I found were *Bursaria spinosa*, prickly box *Bursaria spinosa* is an erect, prickly shrub to about 3-4 metres tall. The leaves are an elongated oval shape 20-45 mm long and up to 12 mm wide, green above and hairy beneath. The flowers are creamy-white, sweetly scented and borne in dense terminal panicles. Flowers are usually seen in mid summer, around Christmas time, which gives rise to the common name of Christmas bush in Tasmania and South Australia. Flowers are followed by flattened, purse-shaped seed capsules about 10 mm x 10 mm. The Prickly Box is a very attractive plant. It may not be so hardy however should grow in the milder areas of the UK and Ireland in a well drained moisture retentive soil in full sun. While it is known to be hardy to -7°C in Australian gardens this is not comparable to the UK due to our cooler summers and longer, colder and wetter winters.

Allocasuarina verticillata or drooping sheoak is a nitrogen fixing native tree of southeastern Australia and Tasmania. It grows as a small tree with a rounded habit, the largest I saw were about 10m in height.

Allocasuarina littoralis or the Bulloak was also common, easily distinguished from the other common species of dry areas, *A. verticillata*, by having erect branches. It is a widespread and common species that I found in relatively dry woodlands. Also in these areas was *Banksia marginata* and *Acacia mearnsii* or black wattle. *Exocarpos cupressiformis*, native cherry was also present, it is an Australian endemic commonly known as the native cherry. It is a small tree (or large shrub in the understory), hemiparasitic on the roots of other trees. It most commonly parasitizes Eucalyptus plants and it was around *Eucalyptus obliqua* that I saw it growing. Leaves are scale-like, and the flowers tiny. Its flowers are arranged in clusters on short spikes; the fruit is a globular nut on a short stalk. As it ripens the stalk swells and turns red. The fruits are sweet and palatable to birds, animals and people. The seed is found on the outside of the fruit, hence the name exocarpus, from the Latin meaning *outer*. It is a very attractive plant but unfortunately does not do well in cultivation although it may not have been grown around Eucalyptus species.



In the creeks and damper areas there was quite a bit of *Pomaderris apetala* and it was one of my favourite plants. Also known as Dogwood and a member of the Rhamnaceae family.

Leaves have a wrinkly appearance, the upper surface is dark green and the under surface lighter with a dense covering of woolly hairs and the flower head is loose and much branched with many yellow- green flowers. It makes a small tree to 10 m high with smooth grey- brown bark. While I saw it mainly in damp areas it did appear in some drier spots too. It's a very lovely tree and I hope will grow very well for me at home.

Bedfordia salicina, *Olearia sp.*, *Zieria arborescens*, *Dicksonia Antarctica* and *Cyathea australis* were also growing in these areas. *Dicksonia antarctica* is the most common tree fern planted at home but *Cyathea australis* should be quite hardy too. *C. australis* is also a robust tub plant and tolerant of salty winds. It is faster growing than *Dicksonia antarctica* and has an attractive black stem.



I camped at Frenchs' Farm. Camping areas here are in the cleared paddocks around an old farmhouse at the northern end of remote Chinamans Bay, 11 km south of Darlington. This farm was in use up until the sixties and the farm house and barn are still in good repair though not in use. The area around the old farm looks like a nice well kept lawn thanks to the wombats and wallabys who are numerous and not shy in this area. Further from the old farm area dry eucalypt woodland led to more heathy areas getting closer to the tombolo or McRaes Isthmus.

Epacris impressa or common heath was in flower around here. This little sharp leaved shrub had many bright pink flower clusters and is supposed to flower most of the year. It is common and widespread from sea level to montane. *Leucopogon collinus* and *L. virgatus*, the pink beardheath were also in flower. They typically flower from spring through summer and are found in dry heathy areas. *Leptospermum scoparium* which is also native to New Zealand, was in flower too.

In wetter areas *Callistemon viridiflorus* and *Melaleuca squamea* were quite common.

I also stayed at Encampment Cove. This very remote campsite overlooking Chinamans Bay and McRaes Isthmus is a 13 km, 4 hr hike south of Darlington. It was a lovely place to camp. Situated right by the beach surrounded by Eucalyptus bush.



Carpobrotus rossii or pink pigface is a native succulent groundcover occurring in the states of Western Australia, South Australia, Tasmania and Victoria. It grows year round and is very hardy and salt resistant.



The very attractive flowers and berries of *Dianella tasmanica*. It is grown a lot as an ornamental in Tasmania.

From Encampment Cove it is only a little more than a kilometre's walk to the ruins of Maria Island's second (probation-era) convict station ruin at Point Lesueur on the island's west coast. This area is quite exposed and mostly grassland, grazed by kangaroos, wallabies and wombats. There is a remnant stand of *Pinus radiata* from convict days.

29th November From Triabunna I cycled up the east coast to visit Freycinet National Park

Cycling along the eastern Tasmanian coast road towards Freycinet National Park, I saw a large patch of *Pimelea nivea* which does grow on the coast and up to 1,000 feet in the hills. *P. nivea* is also known as Round-leave Rice-flower. The cycle was great, cutting through a large

reserve area with lots of colonising species such as melaleuca and kunzea ambigua with lovely white flowers, I spotted lots of Echidnas on the way too. I took a detour to Friendly Beaches on the way, this less touristy area has a beautiful long beach and some fine stands of *Eucalyptus amygdalina* or black peppermint. It has fibrous, grey bark and some upper branches had pink and yellow streaks. Like all Tasmanian gums it has white flowers.

The Freycinet area is a dry part of the country with an average rainfall of 730mm. plants must cope with strong salt winds on the coast, fire is an important factor in these plant communities. The underlying rock is granite and soils are low in nutrients. Dolerite is also present and soils developed from this rock are higher in nutrients. Habitats include heathland, shrubland, woodland and coastal sand dunes.

I camped in Freycinet National Park at the official camping area overlooking Coles Bay, which provided a very nice view from my tent. From here I could explore the park. I went first to Wineglass Bay. Along coastal parts of the track I saw *Ozothamnus resticulatus*, some growing on quite steep, rocky areas. This plant has white stems with linear leaves that are deep green above and white below. Terminal clusters of white flowers are very attractive.

Monotoca elliptica was present also and is quite similar to Leucapogan.



Banksia marginata was in flower in many areas at Freycinet including exposed coastal areas..

At honeymoon Bay I saw *Westringia rigida* in flower, this dark green shrub was growing in sheltered areas of the dunes. It had white, some almost mauve coloured flowers in upper leaf axils. Commonly called the stiff coastal rosemary, it didn't have

an obvious smell like other members of the mint family but was very attractive and clearly a tough coastal plant.



Acacia mucronata was growing in more forested areas.

7th December – I cycled to Douglas-Apsley National Park

Douglas-Apsley National Park is beautiful and contains diverse habitats from areas of dry eucalypt forest and colourful heathlands to pockets of rainforest. Crystal clear waters run through this seldom visited park with some great swimming holes.



Water hole at Douglas- Apsley National Park with Eucalyptus forest in the background.

The south-east corner of the park receives as little as 600 mm of rain each year, while towards the north, rainfall approaches 1 000 mm. Forests of eucalypts grow on steep slopes and river flats, while pockets of rainforest survive in gullies and on protected ledges.

Fourteen species of eucalypts have been recorded in the Park; five of these species are endemic. Pockets of rainforest are dominated by *Atherosperma moschatum* and some *Nothofagus cunninghamii*.



Atherosperma moschatum is an evergreen tree found in areas New South Wales, Tasmania and Victoria. A member of the Atherospermataceae family, *Atherosperma moschatum* is also known by its common name of Sassafras. The tree can grow to a height of 30 meters and up to 10 meters wide. The preferred habitat is temperate rainforests and moist gullies up to the sub-alpine zone. It has been planted in the British Isles as far north as Northern Ireland and Scotland.



Nothofagus cunninghamii, the myrtle beech, is an evergreen tree native to Victoria and Tasmania. It grows mainly in the temperate rainforests. It is not related to the Myrtle family. In Tasmania, provided conditions are moist and sheltered, the trees flourish from sea level on parts of the west and northwest coasts, to the tree line on mountains. Myrtle beech has attractive fans of lacy foliage and new growth that is pink to bronze coloured in spring. The

leaves are glossy and smooth on both sides, dark green above but paler beneath, toothed and rounded at the tip.

10th December- Mt William National Park

I spent a day at Mt William National park.

Located 130km north-east of Launceston, Mt William National Park is reached by back roads from Gladstone. Nestled in the far north-east corner of the State, the park is an important area for the conservation of Tasmania's coastal heathlands and dry sclerophyll plants.

The walk up Mt William had an abundance of relatively young *Xanthorrhoea australis*, or grass trees.



15th December - South West National Park

The south West National Park is Tasmania's largest National Park and a core component of the Tasmanian Wilderness World Heritage Area which contains one of the largest regions of temperate wilderness in the world.

There are no roads in this area, access is by sea, air or by foot. I was lucky enough to get in contact with some local fishermen who I got a lift with from Hobart around the south coast just north of the Iornbound Range. I spent a wonderful five days on board a cray fishing boat travelling down the south coast. It was a great way to see this dramatic coastline and of course marine life such as dolphins, albatross and the many different fish and shellfish that were pulled up in the lobster pots.

On the fifth day I got dropped off at Deadman's Bay, to walk back to civilization along the south coast track which would take another five days. I camped at Deadman's Bay the first night in some coastal rainforest to spend the day exploring. *Nothofagus cunninghamii*, *Atherospermum moschatum* and *Eucryphia lucida* were dominant.



I followed a stream which was lined with *Dicksonia antarctica*. There were many different forms of the Tasmanian man fern, straight stemmed, arching stemmed or multi stemmed. All very happy to be growing in these damp shaded habitats and supporting epiphytic growth such as filmy ferns.



The next day I began the walk back to Cockle Creek. The track was very muddy in parts.



Drosera spatulata, favouring the damp areas off the track. This species is also found in New Zealand.



Acradenia frankliniae is a shrub from the citrus family found in western Tasmania. The Whitey-wood or Wirewood can grow to three metres in height, its habitat is the rainforest floor, I found it growing near a stream. An attractive plant which would make a nice

ornamental. The waxy leaves form in groups of threes. White flowers are delicate and stand out against the dark glossy leaves.



Agastachys odorata, commonly known as the white waratah is a member of the Proteaceae family. I saw it growing as a shrub or small tree in rock outcrops where trees were absent. Flowers are strongly scented. Unfortunately it is not thought to be easy to cultivate.

I made it back to Hobart just in time for Christmas.

December 27th – Visit to The Styx Valley

The Styx Valley lies about 100 km northwest of Hobart, it is a pristine wilderness in south western Tasmania. It is home to the tallest hardwood trees in the world averaging over 80 metres. Many of the trees are over 400 years old. In 1996 only around 13% of the original tree covering remained. A large area of south western Tasmania's pristine wilderness is world heritage and is therefore protected. Unfortunately the Styx Valley falls just outside the South West National Park and it is under attack from logging companies. Environmentalists, who have proposed the protection of the site as a National Park argue that a tourism-based economy would be more beneficial for the local economy than logging the area. The logging companies clear fell such areas in Tasmania and burn any remnant vegetation once they have removed any timber considered of value. The high quality timbers that are then removed are reduced to nothing more than wood chips that are then exported mainly to Japan for the price of AUD\$10 per ton of woodchips.



Eucalyptus regnans at the Styx Valley, measuring 72 meters

Eucalyptus regnans, known by the common names of Mountain Ash, Swamp Gum, Tasmanian Oak or Stringy Gum, is a species of Eucalyptus native to southeastern Australia, in Tasmania and Victoria. Historically, it has been known to attain heights over 100 metres and is one of the tallest tree species in the world.

It has a straight, grey trunk, smooth-barked except for the rough base of the trunk. The leaves are falcate to lanceolate and green to grey-green with a reddish petiole.

It occurs in cool, deep soiled, mostly mountainous areas to 1,000 metres altitude with high rainfall. They grow very quickly, at more than a metre a year, and can reach 65 metres in 50 years, with an average life-span of 400 years. The fallen logs continue supporting a rich variety of life for centuries more on the forest floor.

Unusually for a eucalyptus, it tends not to recover by re-shooting after fire, and regenerates only from seed. The seeds are released from their woody capsules by heat and for successful germination the seedlings require a high level of light, much more than reaches the forest floor when there is a mature tree canopy. Severe fires can kill all the trees in a forest, prompting a massive release of seed to take advantage of the nutrients in the ash bed. If, however, no fires regenerate an area, the trees die off after about 400 years and are replaced by other species.



Great controversy surrounds the logging of old-growth *Eucalyptus regnans* in its natural range in the Styx Valley and protesters camp out in this area to protect the forest and highlight the issue.

2nd January - I arrived in Christchurch, South Island, New Zealand to do 4 weeks of work experience at the Botanic Gardens. The Christchurch Botanic Gardens is located within the boundaries of the Avon River within Hagley Park, less than one kilometer of what was the city centre(pre earthquakes), on the east coast of the South Island of New Zealand, latitude 43 degrees. According to the Canterbury Tourist Council, the gardens are the single most popular tourist attraction in Christchurch with an estimated 2.1 million visitors a year.

The annual rainfall in the Christchurch Botanic Gardens is 658mm. The average temperature is 11.9 degrees Celsius, with 1974 sunshine hours recorded on average.

The soil at the gardens is slightly acidic, balanced and nutrient retentive but with a free draining structure and supports an abundance of biological life within, the earthworms here are not found in huge numbers(because of the acidity of the soil) but are the largest earthworms I've seen.

I worked in the native area of the gardens quite a bit but also moved around to other sections. European trees seem to do especially well in Christchurch, growing faster than they would at home.

Arthur's Pass

The first weekend I arrived in New Zealand I went to visit Arthur's Pass. Arthur's Pass, named after Arthur Dudley Dobson, who discovered it in 1865, connects Canterbury and Westland. Nestled in the Southern Alps the area receives an average rainfall of 4000mm a year. It is about a two hour drive west of Christchurch.

On the way I stopped at Castle Hill, Castle Hill is a location and a high country station in New Zealand's South Island. It is located at an altitude of 700 metres, between Darfield and Arthur's Pass. The hill was so named because of the imposing array of limestone boulders in the area reminiscent of an old, run-down stone castle. Castle Hill contains some interesting plants and micro climates in an otherwise exposed and harsh area. It is one of the driest area in the country.



Aciphylla aurea(Golden Spaniard)

Aciphylla is a genus of plants, native to New Zealand with one exception. It is a member of the Apiaceae family and though related to carrot, parsley, dill, etc., in appearance *aciphylla* has little in common with these vegetables but rather has thick, very hard, spiky foliage in rosettes. *A. aurea* is quite a large species that forms a hemispherical cluster of golden green, spiky foliage to more than 1 m and 50 cm tall. It is native to the drier, eastern side of the South Island of New Zealand.

It is growing at Christchurch Botanic Gardens and in cultivation it appears to do best in a sunny or only lightly shaded spot. It does not like high summer temperatures and is a perfect replacement for *Agave* and *Yucca* in such climates.



Celmissia armstrongii



Myosotis colensoi



Discaria toematoe



Drosera acturi



Drosera spathulata



Dracophyllum traversii

The 6-hectare Lance McCaskill Nature Reserve, in Canterbury's Broken River basin, by Castle Hill protects the habitat of the rare Castle Hill buttercup, *Ranunculus crithmifolius paucifolius*.



This limestone area is extremely dry and plants are adapted to these conditions with succulent leaves and grey foliage.

Beech Forest in the Bealey Valley at Arthur's Pass.



Nothofagus solandri var. *cliffortioides*

Nothofagus solandri is a species of *Nothofagus*, endemic to New Zealand, where it occurs on both the North Island and the South Island. There are two varieties, var. *solandri*, the New Zealand black beech, which occurs at low altitudes up to the mountains, and var. *cliffortioides*, the New Zealand mountain beech, which grows up to the treeline

Mountain beech (var. *cliffortioides*) is smaller (20 m) and near the treeline has stunted growth and trees are no more than 2 m tall.

The leaves are alternately arranged, ovoid, with smooth margins. In var. *cliffortioides* the leaves are more elongated and have a pointed end, while var. *solandri* has shorter rounder leaves. Var. *solandri* is known as Black Beech because it is prone to a sooty mold which covers the trunk and branches. This in turn is the result of a scale insect which sucks sap from the tree, and excretes honeydew a sweet liquid in small droplets on the end of stalks. This feeds the sooty mold, and also forms a valuable high energy food source for various birds and insects including native Bellbirds who were feeding happily around me.

Both varieties have been planted in Great Britain and var. *cliffortioides* is more cold hardy.



Astelia nervosa

Drosera stenopetala is an insectivorous, rosette-forming perennial sub-alpine or alpine herb. A species of sundew, it is unique within its genus in being endemic to New Zealand. It is one of New Zealand's two alpine species of *Drosera*, the other being *Drosera arcturi* which also occurs in Tasmania. Its range extends from the Ruahine and Tararua Ranges in the north down the Southern Alps to Stewart Island.

Hinewei Reserve

The next weekend I went to visit Hinewei Reserve, on Bank's Peninsula south of Christchurch. It is a 1250 hectare reserve in the south eastern corner of Bank's Peninsula.

Hinewai. It started off as a 109 ha block of farmland bought by the Maurice White Native Forest Trust in September 1987 and is now 1230 ha of gorse and regenerating native bush.

The reserve was completely forested in pre-human times but, as with much of Banks Peninsula, the forest cover was severely reduced, especially after European settlement. The transformation from open pasture and gorse to native vegetation has occurred rapidly. *Ulex europeaus* or European gorse is very invasive in most parts of New Zealand. While the approach of most people has been to continuously cut it down or use chemical sprays as a control, Hugh Wilson who manages the reserve used the gorse to act as a nurse crop for native plants. It has been very successful and an inspiration to many land owners around the country.

Hugh Wilson, who hand-writes and illustrates a newsletter about the reserve, Pīpipi, which the Trust publishes several times a year is a botanist and author of books on New Zealand flora.

One-third of the reserve was burned on 13 July 2011, possibly due to a lightning strike. I met Hugh Wilson at Hinewai and he very kindly showed me around part of the reserve.



Metrosideros fulgens at Paparoa National Park, West Coast.

Metrosideros fulgens is a forest liane or vine endemic to New Zealand. It occurs in coastal and lowland forest throughout the North Island and on the west coast of the South Island. It is one of a number of New Zealand metrosideros species which live out their lives as vines.



My camp at Paparoa National Park with *Dicksonia squarrosa*, *Rhopalostylis sapida* and *Metrosideros umbellata* in the background. *Rhopalostylis sapida*, is commonly known as the Nikau palm, it is the only palm species endemic to mainland New Zealand. Its natural range is coastal and lowland forest on the North Island, and on the South Island as far south as Okarito (43°20'S) in the west and Banks Peninsula (43°5'S) in the east. It also occurs on Chatham Island and Pitt Island/Rangiauria to the south-east of New Zealand, where it is the world's southernmost palm at 44° 18'S latitude.

Dunedin Botanic Gardens



Grisselinia littoralis

On the way to Stewart Island I stopped at Dunedin Botanic Gardens. These huge grisselinias are the biggest I've seen and show what a lovely specimen plant this typical British front garden hedge can make.

3rd February- Stewart Island

Southernmost and smallest of the three main islands of New Zealand, Stewart Island lies under the 'heel' of the South Island. Although quite small, the island's 1720 sq km contain a varied landscape of hills and valleys, rivers, streams, lakes, plains, dunes and a long intricate coastline. Unlike most of the North and South Island, the island is relatively unmodified by human activity. Introduced browsing animals, weeds and birds and old milling and fires have resulted in the loss of some native wildlife.

Stewart Island lies 35km across the Foveaux Strait from Bluff, the nearest mainland town. The island's primary human settlement is tiny Oban (oh-BAN), also known by its location as Halfmoon Bay. Elgin Terrace curves along the bay, while Ayr Street, Main Road, and Horseshoe Bay Road branch inland. Nothing in town is farther than a 15min. walk

Forest covers most of Stewart Island, mostly rimu and kamahi, with much rata and miro. While species of *Nothofagus* dominate large tracts of the North and South Island, there is no beech present on Stewart Island. This is related to the last ice ages, while very little of the island was glaciated, it was affected by climatic fluctuations and repeatedly lost its tree species. Beech with its slowness to spread did not have time to reach the southernmost part of the South Island before the sea levels rose and it was cut off from the mainland. Other species which never made it across include *Phyllocladus alpinus*, the celery pine, *Libocedrus bidwillii* and *Sophora microphylla*. All of these plants are however successfully cultivated in island gardens as are a large range of exotic species such as Canary Island *Echiums*, Chilean fire trees (*Embothrium*) and North Island *Kauris*. This subtropical range is similar to mild coastal areas of the UK and Ireland. It lies on the same latitude as Treviso, Isles of Scilly but on the opposite side of the equator.

Stewart Island contains 580 native vascular species and about 28 of them are endemic. The flora represents a relict of the Gondwanaland forests, widespread before continental drift began to break up the southern lands some 130 million years ago

We got a taxi boat from Half moon Bay to Freshwaterhut which would otherwise be two days



of tramping.

Cortaderia richardii, Toetoe in Maori, growing on the rivers edge with *Leptospermum scoparium* or manuka in the background, on the way to Freshwater hut.

We walked from here for two days along the North Circuit Track and then back, camping overnight on the way. Instead of getting a boat back from Freshwaterhut we walked back to the town for a further two days. The walk took us through some pristine rainforest. Dominated by *Dacrydium cupressinum*, or rimu, *Weinmannia racemosa* and *Metrosideros umbellata*, the southern rata. Ratas were the biggest I've seen as were the *Weinmannias*, with old, gnarly roots and trunks and resprouting where they had fallen over. In the rainforest in New Zealand, it seems even more so than Tasmania that every plant either hosts other plants or does itself begin life in another plant. *Grisselinia* are common epiphytes



Gunnera prorepens, this very attractive groundcover was common along the semi shaded, damp manuka lined tracks.



Dracophyllum longifolium, this plant looked completely different to the other *D. longifolium* I had seen but the coastal form does tend to have much larger foliage. As with a lot of New Zealand plants it is not just the environment where they are growing that causes different forms but a lot of plants go through a juvenile, intermediate and mature stage.



This is the juvenile foliage of *Pseudopanax crassifolius* or lancewood. It is a New Zealand native tree belonging to the family Araliaceae. It is found throughout New Zealand from sea level up to about 750 m. The juvenile form, which lasts for between 15 and 20 years, is very easily recognized. The leaves are stiff and leathery with a prominent central rib, about 1 cm wide and up to 1 m long with irregular teeth, all growing downwards from a central stem. The young trunk has characteristic vertical swollen ridges. As the tree gets older the stem begins to branch producing a bushy top, and the leaves become wider and shorter, losing their teeth. It is only when the tree is mature that it adopts a typical tree shape. One of the theories about this curious change of appearance is that the young plant had to protect itself against browsing by the moa, the giant flightless bird that roamed New Zealand's bush in prehistoric times. Once above moa height, it was out of danger and turns into a "regular" tree.



This is a *Weinmannia racemosa* trunk, usually a medium-sized tree of the Cunoniaceae family, is a very common tree in New Zealand, occurring in lowland, montane, and subalpine forests and shrubland from the central North Island south to Stewart Island. It does particularly well in this climate, especially where podocarps are not so dominant. I also saw it as an epiphyte growing from tree ferns. It is a very attractive tree with creamy white flowers in erect spikes.



View of northern coastline, with *Metrosideros umbellata* new red growth in the bottom left.



Olearia colensoi var *argentea* is quite common on Stewart Island, I saw it in subalpine scrub, shrubland, forest and almost down to the sea along a stream.



Earina autumnalis, I could smell this pretty, strongly scented orchid before I saw it.



Sticherus cunninghamii is a very attractive fern which was growing mostly under *Dacrydium cupressinum* or Rimu.

