# Botanical Society of Otago Newsletter

Number 49

# **BSO Meetings** and Field Trips



- 11 October, Wednesday 5.20 pm. NOTE SPECIAL VENUE, Castle 1 Lecture theatre, Otago University. In conjunction with Department of Botany, Otago University. Hugh Wilson, 5<sup>th</sup> Geoff Baylis Lecturer, will present: Banks Peninsula's Botany; the past, the present and the future. See website for details.
- 14 October, Saturday 8.30 am. Aramoana salt marshes. A half-day trip to visit the Aramoana salt marshes. This salt marsh is one of the best remaining examples in the Otago area and is a prime example of a habitat increasingly under pressure elsewhere from land development. We'll also check out the population of Cook's scurvy grass on the Aramoana Mole. Leaves 8:30am from Botany Carpark, returning 12:30pm. Leader: Mike Thorsen 4536800
- **30 October,** Monday 6 pm. *Eagle's Complete Trees and Shrubs of New Zealand* will be launched by Professor Alan Mark in Dunedin to coincide with an exhibition of Audrey Eagle's artwork at the Otago Museum. Audrey warmly invites all BSO members to join her in celebrating the publication of her decades of dedicated botanical drawing.
- 11 November, Saturday 8.30 am. Trip to Lammerlaw Range with Prof. Alan Mark:
  - 1. Black Rock Scientific Reserve;
  - 2. DCC water catchment area to look at the **snow tussock burning study** of Landcare/AgResearch/DoC/Forest Research plus the controversial 30 ha reservoir currently under construction for TrustPower's Deep Stream Hydroelectric Augmentation project;
  - 3. TrustPower's Mahinerangi Windfarm proposal;
  - 4. **Deep Stream Scenic Reserve**/Te Papanui Conservation Park

The recently published results of 30 yrs of monitoring at Black Rock (Mark & Dickinson *New Zealand Journal of Botany* **41**: 655-668 - it has a species list) will be discussed in relation to the issue of the degree of sustainability of low-mid altitude snow tussock grasslands, as well as the water yield potential of alternative land uses on

these uplands. The road also gives access to the edge of Te Papanui Conservation Park (in the Deep Stream gorge area, where we can see the intake for Dunedin's water supply) plus the area of the controversial TrustPower's 30 ha water reservoir (currently under construction) for its Deep Stream Hydroelectric project. There is also a good overview of their proposed Mahinerangi Windfarm envelope that's currently receiving publicity. Vehicles powerful enough for a steep gravel road will be helpful. Fallback date if weather bad: Sunday 13 November.

- 15 November, Wednesday 5.20 pm, Dr Colin Meurk, Landcare Research New Zealand Biodiversity Recording Network. Colin will bring us up-to-date with this exciting new web-based system to record and process natural history observations (birds, plants, butterflies, mushrooms, reptiles, frogs and mammals). This is a way of providing secure storage for data outside of institutional plot-based databases which can then be used to create distribution maps, graphs and species lists. The system is adapted for New Zealand from the highly successful Swedish Artportalen (species gateway) system.
- 11 December, NOTE SPECIAL DAY Monday 5:20 pm 'Western Australia's ironstones caught between a rock and a hard place!' a bonus talk by Dr Adrienne Markey. A presentation on the flora and conservation (or lack thereof) in banded ironstone formations, Western Australia. More talk details coming soon on the web site: http://www.botany.otago.ac.nz/bso/.
- **11 December**, **Monday** 7:30 pm. **End of year dinner** at the Asian Chinese Restaurant (43 Moray Place) following Adrienne's talk. RSVP to Robyn Bridges (*robyn.bridges@otago.ac.nz*) by 8 December.

**Meeting details**: Talks are usually on Wednesday evening, starting at 5.20 pm with drinks and nibbles (gold coin donation), unless otherwise advertised. Venue is the NEW Zoology Benham Building, 346 Great King Street, behind the Zoology car park by the Captain Cook Hotel. Use the main entrance of the Benham Building to get in and go to the Benham Seminar Room, Rm. 215, 2<sup>nd</sup> floor. Please be prompt as we have to hold the door open. *Items of botanical interest for our buy, sell and share table are always appreciated. When enough people are feeling sociable we go out to dinner afterwards everyone is welcome to join in. Talks usually finish around 6.30 pm, keen discussion might continue till 7 pm.* 

**Field trip details**: Field trips leave from Botany car park 464 Great King Street, unless otherwise advertised. Meet there to car pool (10c/km/passenger, to be paid to the driver, please). 50% student discount now available on all trips! **Please contact the trip leader before Friday for trips with special transport, and by Wednesday for full weekend trips**. A hand lens and field guides always add to the interest. It is the responsibility of each person to stay in contact with the group and to bring sufficient food, drink and outdoor gear to cope with changeable weather conditions. Bring appropriate personal medication, including anti-histamine for allergies.

Note trip guidelines on the BSO web site: http://www.botany.otago.ac.nz/bso/

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**President's notes** 

John Barkla

It's been a busy and exciting time for the committee with several new projects underway. Perhaps most significantly the Society will soon publish a supplement to Audrey Eagle's new book. This supplement contains a wealth of fascinating botanical information which we hope will be an essential companion to Audrey's artistic volumes. Particular thanks are due to Mike Thorsen for co-ordinating this ambitious project.

I hope members will support our new photographic competition. Abe Gray has designed the entry form which you can download off the website. There will be stiff competition if the photos in the newsletter are anything to go by!

A quick read of the many and varied trip and talk reports confirms that the Society has indeed been active over the winter. Local trips especially have proved popular and we will endeavor to provide more of these. Talks too have been well attended and, judging by the ensuing discussion, stimulating and inspiring. Many thanks to all the leaders, speakers and report writers.

This newsletter takes us through to Christmas and for some members that will mean joining forces with our Wellington Botsoc friends on our combined summer trip to Stewart Island and the Catlins. With luck we'll all get to hear about it in a talk early next year.

#### **Treasurer's Notes**

Lyn Bentley

Students please note – our committee has decided to cover half the cost of your transport on trips, by refunding the drivers the 50% you don't have to pay.

Editor's notes

Allison Knight

Newsletter 49 has been a long time coming. Only one more to go, because I will stop at no. 50 – the lichens are calling. But I can share a secret now. Last newsletter, No. 48, was our first totally electronic issue, thanks to the expertise of David Orlovich. David has put it on the web as a PDF file. You can see each issue on the BSO website when the next one comes out. As usual there are more interesting things than I can mention. Lists are a feature – amazing how many rare and unusual native plants Cliff Donaldson has nurtured in his garden. Amazing, too, how many fungi were fruiting under the eucalypts at Orokonui, and how many lichens we identified at Sutton Salt Lake, and how many vascular plants were at Waipori. Original drawings also feature, with Kathleen Graham's entries in last year's Art competition featuring front, back and middle. Anthony Harris has been generous with his skilled drawings, and the launch of Audrey Eagle's Complete Trees and Shrubs of New Zealand, with over 800 over her meticulous drawings, has to be one of the most significant features on the botanical calendar. Original photos look so colourful in our PDF newsletter, and will look good in a BSO calendar as well, so keep our new Photographic Competition in mind over the summer.

Editor's guidelines Contributions are always welcome, but newsletter space is a little limited. Please note these few gentle guidelines. Please try and aim for a 0.5 - 1 page of 14 pt Times New Roman for trip and meeting reports and book reviews, and 1 - 2 pages, including illustrations, for botanical notes. Original articles, if they are exceptionally relevant, could stretch to 4 or 5 pages of 14 pt, including illustrations.

## Please submit copy for next newsletter by 10 February 2007

**Disclaimer** The views published in this newsletter reflect the views of the individual authors, and are not necessarily the views of the Botanical Society of Otago. Nor do they necessarily reflect the views of the Department of Botany, University of Otago, which is supportive of, but separate from, our society.

#### Letters

#### Barringtonia

Lloyd Esler, September 2006

On 19 August I picked up this fruit on Oreti Beach. I recognised it as Barringtonia or Fish-poison tree which I had found once before on Muriwai Beach west of Auckland and have seen growing in Queensland. It has drifted a long way and has lost its seed but the husk is fairly intact. Cuttlefish shells are common on the beach here and plenty of manmade material comes ashore after drifting a long way but little plant material is likely to survive for long in the sea. I found a coconut on Oreti Beach once and assumed it had been thrown off a ship but it may have drifted here also.

Photos show the specimen on Oreti Beach (right) and a selection of washed up fruits I photographed near Cairns in 1999. There are a couple of fresh Barringtonia fruits in the photo (left).





In September my wife and I are reluctantly selling our property at 21 Glenmore St, Glenleith. Our home contains 3 bedrooms etc., facing north, and stands on an area of garden .3735 hectares (about ¾ acre). A spring runs through the garden, which contains nearly 120 native plants (listed below). Many of them are rare or unusual for Dunedin. There are also 60 camellias, 40 rhododendrons, 10 magnolias and 150 fuchsias as well as other interesting shrubs, and gooseberries, blackcurrants and other fruit, with a 9 x 3 m tunnel-house containing grapes.

#### NZ Native Trees and plants at 21 Glenmore St, Glenleith, Dunedin

Ackama rosifolia Agathis australis Alectryon excelsus

Ascarina lucida

Beilschmiedia tarairi Beilschmiedia tawa (P) Brachyglottis hectorii Brachyglottis rangiora

Carmichaelia sp.

Carmichaelia williamsii Chordospartium 'wissellii' Chordospartium stevensonii = Carmichaelia stevensonii (P)

Coprosma chathamica Cordyline banksii Cordyline kaspar (R) Cordyline kirkii (cultivar)

Corokia cotoneaster Corokia macrocarpa Corynocarpus laevigatus

Cyathea medullaris
Cyathodes 'chatamica'
Dacrydium bidwillii
Dacrydium biforme
Dacrydium colensoi
Dacrydium kirkii
Dacrydium laxifolium

Dacrydium or Libocedrus sp. Dendrobium cunninghamii

Dodonea viscosa Doodia aspera Doodia media Dracophyllum traversii Dysoxylum spectabile Earina autumnalis Earina mucronata

Elaeocarpus dentatus (P) Elaeocarpus hookerianus Elingamita johnsonii (R)

Etingamita johnsonti Entelea arborescens Freycinetia banksii Fuchsia procumbens Griselinia lucida Hebe speciosa

Hedycarya arborea

Hymenanthera chathamica

Knightia excelsa (P)

Laurelia novae-zelandiae

Libocedrus bidwillii Libocedrus plumosa

Libocedrus sp. Litsea calicaris

Macropiper excelsum Macropiper excelsum subsp. psittacorum

Marattia salicina (king fern)

Melicope ternata Melicytis lanceolatus Melicytus macrophyllus

Meryta sinclairii

Metrosideros bartlettii (P) Metrosideros carminea Metrosideros excelsa Metrosideros fulgens

Metrosideros kermadecensis Metrosideros parkinsonii Metrosideros robusta Myrsine salicina Nestegis apetala

Nestegis cunninghamii Nestegis lanceolata (coloured hedge) Nestegis montana

Nothofagus fusca Nothofagus menziesii Nothofagus solandri Nothofagus solandri v. cliffortioides

Nothofagus truncata

Notospartium carmichaeliae = Carmichaelia carmichaeliae

Notospartium glabrescens = Carmichaelia glabrescens Notospartium 'coralloides'

Olearia cheesmanii Olearia rani

Paratrophis banksii Paratrophis smithii Parsonsia heterophylla

Pennantia baylisiana (R) Phebalium nudum = Leionema nudum Phyllocladus alpinus

Phyllocladus trichomanoides Pittosporum cornifolium Pittosporum crassifolium

Pittosporum dallii

Pittosporum huttonianum

(or fairchildii) Pittosporum kirkii

Pittosporum obcordatum

Pittosporum ralphii Pittosporum umbellatum Plagianthus betulinus Plagianthus or Hoheria Podocarpus acutifolius Podocarpus ferruginea Podocarpus hallii Podocarpus sp.

*Podocarpus totara* (NZ) Pomaderris apetala Pomaderris rugosa Leptopteris superba (Prince of Wales fern) Pseudopanax chatamica Pseudopanax crassifolius Pseudopanax edgerleyii Pseudopanax laetus Pseudopanax simplex Pseudowintera axillaris Quintinia acutifolia Rhopalostylis sapida Sophora x early gold

Syzygium maire

Tecomanthe speciosa Tetrapathea tetranda = Passiflora tetrandaTeucridium parvifolium

Toronia toru Vitex lucens

Weinmannia racemosa Weinmannia silvicola

synonym = new name

NZ: New Zealand Registered Notable

tree

P: DCC Protected list

R: Rare



Celmisia spectabilis and Bulbinella angustifolia drawn in front of the old Powell Hut, Tararua Range, in 1965. Anthony Harris



**Powell Hut**. This sketch shows the old Powell Hut in 1965, just above the bush line on the Mt. Holdsworth Track, Tararua Ranges. In the spot where this sketch was drawn I found the flax weevil *Anagotus fairburni* in *Phormium*. The *Astelia* weevil (*Anagotus o'connori*) occurs on *Astelia* behind Powell hut.

Anthony Harris

#### **Articles**

#### **Historic Powell Hut**

Anthony Harris

The first time I stayed in Powell Hut was 1961-2 summer. As a Taranaki school boy, I had cycled to Masterton, thence to Bannister Hut and on up past the Mountain House and Powell Hut to the tops, where I was collecting specimens of the giant weevil, *Anagotus* o'connori in Astelia, to dissect, as I wished to study New Zealand's weevil fanua. Tony Druce walked past and said "Is that little, shiny, billy in Powell Hut yours?" "Yes" "Well, it's a little black billy now!" I asked his opinion on whether I should continue collecting with mist appearing. "Of course!" he said. "Just don't go down Rough Ridge - keep to the left and remember, if you have to spend a night on the tops, all you have to do is tie together the tops of adjacent tussocks- make a sort of tunnel, put your sleeping bag in there and get into it- water will pass underneath without entering the bag-that's what I do." That evening in Powell Hut I met Tony and Helen Druce, Owen Druce, Fenella Druce (aged about 9 and doing handstands), and Geoff Park, aged 14, who was very interested in orchids. Tony Druce said he never took a tent in the Tararuas and frequently spent the night above the bush line in tussock tunnels, made by tying together the ends of adjacent tussocks. In mountain flax where I did this sketch of Powell Hut, I found the first high altitude specimens of the flax weevil, Anagotus fairburni.



Hyla boans, San Miguel del Bala, Bolivia – Stephan Halloy

#### An insight to South American Flora and Fauna

My journey started in Brasilia. Although Brasilia is famous for its modern architecture, one can still see in the numerous city parks the national tree of brazil: *Caesalpina echinata* (the Brazilwood or Pernambuco wood). Brazilwood is also known as red-dye wood and was harvested by the Portuguese on the Atlantic coast (Mata Atlantica) to be used as a natural dye in the textile industry. With the introduction of synthetic dyes at the end of the 18<sup>th</sup> century, the brazilwood market collapsed. By that time, brazilwood had become rare throughout the whole range of its natural habitat. It is currently registered on the IUCN World List of Threatened Trees. To this day, it is still used for the making of string instrument bows and violins.

But the highlight of this trip in Brazil was for sure the visit to Parque Nacional Serra do Cipó, in Minas Gerais. This 130 km perimeter and 33,800 hectare national park was created in 1984 in order to protect rare and endemic plant species. The landscape is characterized by high canyons and waterfalls more than 70 m high. It is referred to as cerrado (similar to savannah). Within the park, altitude varies between 650 and 1800 m. In this region, temperature varies between 9.6°C (July) and 30°C (January/February), and rainfall from 281 mm (January) to 11 mm (July). Vegetation in Serra do Cipó is classified as submediterranean and includes 5 vegetation types: rock savannas, alpine, cerrados, riparian and atlantic forest. Since 1987 the Botany department at the University of Sao Paulo have recorded around 11,000 species. The Park was mainly created to protect two species endemic to Serra do Cipo: Vellozia piresiana (Canela-de-ema) and Constantia cipoensis (a rare species of orchid). Numerous species of Paepalantus (Sempre-vivas, named for being "always alive") are a distinctive feature of cerrado flora, and can be found throughout the park. Sempre-vivas were heavily collected for floral arrangement and decoration, which has lead to the extinction of local species. Little is still known of Hyptis species found in Serra do Cipó and in recent years this family is getting the attention of botanists at the University of Sao Paulo. Essential oil of Hyptis species has medicinal properties and can be used for the treatment of gastrointestinal infections, cramps and pains, and skin infections. Serra do Cipó appears as a wonderful wild rock garden with colourful Bromelideae and Iridaceae, and strangely shaped Capim-estrela (Star-grass, Rhynchospora consanguinea). Hot rocky outcrops made the ideal habitat for reptiles, but bird life was restricted to watercourses.

My journey continued to Argentina, where the national tree, *Erythrina crista-galli* (Ceibo), can be seen along rivers and in flooded areas of Costanera Sur Ecological Reserve in Buenos Aires. Within this 353-hectare sanctuary and recreation area, 250 species of birds, 9 species of amphibians, 23 species of reptiles, 10 species of mammals, 50 species of butterflies and 245 species of plants are accounted for. The most picturesque tree in the reserve was *Bombax vitifolium* (Palo borracho or drunken stick/log), a floss silk tree whose large pods emit cotton like material, used for stuffing pillows.

I also visited San Carlos de Bariloche and the surrounding beech forest and savannah. Parque Nacional Nahuel Huapi, the first national park established in Argentina, was created in 1934. Of the 710,000 hectares, 55,700 are water and thus water determine the environment through rainfall and snow. The park expands from the Andean mountains to the Patagonian savannah. Altitude varies from 600 to 2000 m. *Nothofagus dombeyi* 

(Coihue) is the dominant beech species in the lowland forest. It is resistant to humidity, thus grows in wet soil, along lakes and rivers and up to 1000 m altitude. The oldest trees recorded were up to 500-600 years old. It is the tallest native tree species in the park and can reach up to 40 m height. Evergreen, it shadows and thus allows the dense undergrowth of *Chusquea culeou* (Caña Coligüe-bamboo) that may reach up to 5 m height. Caña flowers every 17 and 20 years and is traditionally used by Mapuche people for the making of lances and music instruments. Coihue is also associated with *Tristerix corimbosus* (el Quintral), a hemiparasite which flowers in January, thus providing the main food supply for hummingbirds (Picaflor Rubi, *Sephanoides sephanoides*) in winter.

Nothofagus pumilio (Lenga) is the next most common beech species found in Parque Nacional Nahuel Huapi where it grows up to 30-35 m height in low altitudes, and as a shrub above 1000 m. Luma apiculata (Arayan) is also often found in very humid sites near rivers and lakes. However Embothrium coccineum (Notro) is the most common species. It is a small tree (up to 7-8 m height) that flowers from October, providing food for humming birds in the summer. The Hummingbird (Picaflor Rubi, Sephanoides sephanoides) is unique because all its diet is based on nectar and thus it is an important pollinator in the area. Amongst 14 species that produce red and tubular inflorescences, hummingbirds feed on Quintral, Notro and Chico.

Two species dominated the dry savanna: *Mulinum spinossum* and *Stipa speciosa* (Coiron). South of Bariloche, raptors such as *Vultur gryphus* (Condor) and *Gernanoaetus melanoleucus* (Aguila mora-Eagle), were abundant in this environment, and chinchillas elusive on rocky outcrops.





Brazilwood -Watercolor from Marcos Antônio dos Santos Silva. Marcos Antônio is a botanist and artist teaching botanical illustration at University of Brasilia. He generously contributed to the identification of Brazilian plant species presented in Pascale's talk.



# **Original Art Feature**

# Coprosma lucida

Kathleen Graham

*Kathleen* won second equal prize in the 2005 BSO Audrey Eagle Botanical Drawing Competition

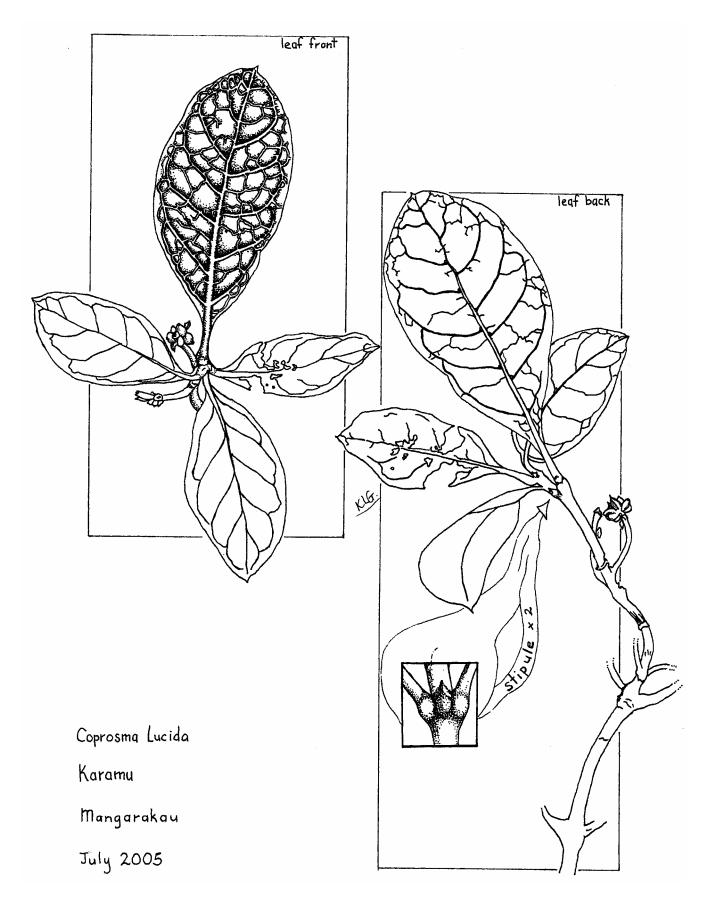
Coprosma lucida (Karamu, Shining Karamu) occurs throughout the country in lowland to mountain forest and shrubland, sometimes as an epiphyte. It is a shrub up to 3 m tall and its leaves are thick and shiny with the fine vein work clearly visible. Leaves are 5 – 13 cm long by 3 – 4 cm wide with tip often drawn out into a point. The stipules of *C. lucida* have small greenish tips (distinguishable from those of the other Karamu, *C. robusta*, which have black tips) and the berries are orange red. (Dawson and Lucas 2000)

Domatia occur at the junction of main and lateral veins and are most easily seen on the leaf underside.

Although, according to Dawson and Lucas, *C. lucida* usually grows in drier habitats than Karamu (*C. robusta*), this *C. lucida* fell on to the road in a slip from forest in Kahurangi National Park (July 2005). This road passes between Kahurangi and Mangorakau Swamp in North West Nelson and is in a very high rainfall area.

The fruits in the drawn plant are still all green except one, and are not present in the profusion common with this species.

Coprosma lucida Kathleen Graham



## **Meeting & Trip Reports**

A magnificent obsession: the botanical life and legacy of Tony Druce
A talk by Geoff Rogers.

Audrey Eagle

Dr Geoff Rogers described Tony Druce as "Our most prolific botanical explorer". By the end of the talk we could appreciate why he was awarded this accolade. Tony's research into the distribution of native plants and their relationship with the geology and climate of the various areas took him from the North Cape to The Bluff.

Not only did he observe and list the plants but he also collected specimens and sent them to Botany Division (now Landcare Research) Herbarium at Lincoln. These carefully pressed and well-documented specimens finally totalled an amazing 37 794 entries. Tony's 334 plant lists were made readily available to all and are invaluable to botanical science. When Tony retired he collated them into a master list and this he yearly revised as areas were revisited and more discoveries made. From these lists 90 000 entries have been entered into a data base by Geoff. These can now be readily used to analyse national patterns of plant richness, radiation, and endemism.

During Tony's lifetime of both intensive explorations, and of growing numerous plants, he discovered many new species. A number of these have now been named and others still bear his tag names.

As an example of Tony's thoroughness he made 38 field trips to Taranaki/Egmont N.P and completed a major study of the Park. A plant found only in this one locality now bears his name *Melicytus drucei*. Even so he was very modest and refused to accept any Awards. From first hand experience over many years Geoff was able to describe how unselfish and helpful Tony was to all, amateurs and professional botanists alike. As an example on the Wellington Botanical Society Camps, people would be continually asking Tony's opinion on, or names of, plants. He patiently gave full replies however many times he was asked the same question.

Geoff told us that Tony was completely at ease in the mountains, he was at one with peace and contentment, quietude and reflection. This at-oneness with the mountains was also evidenced in his superb sense of direction - he always knew where he was. There were no worries about getting lost if Tony was within sight. On these camps his practical skill at lighting fires in pouring rain and with sodden undergrowth was legendary.

We were also given a few examples of Tony's wit, both verbal and in his writing. Geoff said that Tony was criticized for not writing up more papers on his research conclusions but one lifetime can only do so much. No one could have spent more hours a day on his life's work than did Tony.

He was single minded but never at the expense of his humanity.



Orokonui fungi. Left: 1. Pagoda fungus Podoserpula pusio, Top right: 2. 'Matchstick' Mycena sp., Bottom right: 3. Cortinarius (Dermocybe austroveneta). Photos: 1 by Ken Allen, 2 and 3 by Bill Wilson.





Fungal Foray to Orokonui, 27 May

Bill Wilson

Twenty-one members, friends and families, led by Dr. David Orlovich (as seen on TV), met at the Orokonui car park under threat of deteriorating weather. Fortunately it didn't, which added to the pleasure of the day. Previous rain made it ideal as the fungi were prolific and they look their colourful best when wet.

The Orokonui Reserve has a wide variety of tree types: eucalypts, pines and native bush, so promised a good range of fungi associated with them. The group began to split up soon after entering the reserve. Some were content to burrow into the leaf litter just inside the entrance finding a wide variety of small fungi like the pagoda fungus *Podoserpula pusio* (Fig. 1) *Mycena*, and a matchlike little *Mycenae* (Fig. 2) Other groups went further into the bush and found different fungi including the *Cortinarius* (*Dermocybe*) *austroveneta* (Fig. 3). Combining treasure hunt and ecological study, the day was particularly satisfying.

After the hunt a smaller group went back to the lab in the Botany Department to identify the large number of fungi found, and record the names. All were found under the eucalypts, mostly on soil, except *Cortinarius bellus* and one *Tricholoma* sp., which were associated with *Kunzea ericoides*.

#### Fungal collections from Orokonui, 27 May, 2006

Genus	Species	Lactarius	sp.
Dermocybe	austroveneta	Weraroa	erythrocephala
Scleroderma	sp.	Russula	sp.
Cortinarius (Telamonia)	sp.	Barya	
<i>Psathyrella</i>	sp.	Ramaria	aureorhiza
Crepidotus	sp.	Cortinarius	taylorianus
Podoserpula	pusio	Laccaria	sp.
Dermocybe	austroveneta	Cortinarius	tigrellus
Flammulina	velutipes	Cortinarius	taylorianus
Cortinarius	rotundisporus	Cup fungus	
Marasmius	sp.	Coral fungus	
Cortinarius	rotundisporus	Mycena	sp.
Coprinus	pucatilis	Trametes	versicolour
Cortinarius	bellus	Coral fungi	
Hygrocybe	sp.	Coral fungi	
Cortinarius	sp.	Dermocybe	austroveneta
Dermocybe	splendida -	Laccaria	sp.
Dermocybe	splendida -	Russula	sp.
Dermocybe	splendida -	Laccaria	sp.
Dermocybe	splendida -	Cortinarius (Telomonia)	sp.
Dermocybe	splendida -	Tricholoma	sp.
Dermocybe	splendida -	Cortinarius	sp.
	<i>splendida</i> brown	Tricholoma	sp.
Dermocybe	(variant)	Melanoleuca	sp.
Lactarius	sp.	Cortinarius	sp.

#### Fungi: New Zealand's hidden diversity

Bill Wilson

Dr David Orlovich overcame an adolescent obsession with carnivorous plants to become a born-again fungophile. In the meeting on June 14<sup>th</sup>, he gave us a brief look at some fungi and touched on some problems of their identification, the relationship of some fungi with NZ trees and problems with establishing the way many distribute themselves. The talk was illustrated with spectacular photographs of many NZ native and introduced species discovered on annual fungal forays or in research by himself or his students.

The show began with a photo of the spectacular *Entoloma hochstetteri*, the most iconic of NZ mushrooms because of its beautiful blue colour and comparative rarity outside the West Coast. He continued with examples of *Gymnopilus junonius* and illustrated how examination of spores could supplement other characteristics in differentiating it from other genera. DNA analysis also helped to locate each species and establish it within the genus. As DNA testing has only recently become available and as some species seem to have worldwide distribution there has been a great deal of renaming of species and how they spread is not clear. He showed us the attractive purple *Lepista fibrosissima*, which is in NZ but it is unknown whether it is introduced or not. All these mushrooms lived off rotting wood.

David then went on to look at the symbiotic relationship of mycorrhizal fungi with trees,

and their role in helping the tree take up nutrients. The fungi were generally of two types. ectomycorrhiza, which cluster on the outside of root tips, and arbuscular mycorrhiza, which penetrate the plant. Of ectomycorrhiza, which are associated with beech, manuka, kanuka and many introduced trees, a recent study identified some 76 genera, though many more have subsequently been found. Of the 76, 42 were associated with NZ native trees, 10 with introduced, and 24 with both.

Next we looked at *Amanita muscaria* or Fly Agaric, the red and white spotted mushroom that is associated with exotics, especially pine. The issue was the extent to which it has invaded native bush and whether it spread through spores or vegetatively. David described a complex research process involving the collection of 107 basidiocarps from a small, grassed area, their DNA analysis to show the source of each plant and subsequent plotting of each group, by colour, on a plan which revealed little about how they spread but certainly enriched the world of modern art. A study from Sydney concluded that human disturbance probably dictated the distribution.

The show concluded with a look at a number of colourful fungi. Many of these were species of *Cortinarius*, where recent DNA analysis has shown that fungi previously thought to be separate species, like *Thaxterogaster* and *Dermocybe* were in fact *Cortinarius*. What with changing nomenclature, individual variations, new discoveries and introductions it is becoming increasingly difficult to be omniscient about NZ fungi.

24 June, Prof Bastow Wilson's trip to **Swampy Spur** on 24 June was postponed due to wintry weather.

19 July, Aalbert Rebergen, Biodiversity Officer with the Otago Regional Council didn't talk on "The voluntary protection of native biodiversity in general and botanical values in particular, on farms and other privately owned land in Otago", due to illness.

Instead, thanks to **Mike Thorsen**, we had a much-appreciated talk on: **Desert island botany: plants, pests, and 750 000 seabirds.** Mike gave an impromptu talk on the flora of the equatorial Pacific Phoenix Islands and the impacts from pests (people, rats, and rabbits) and the phenomenal density of ground-nesting seabirds.

# **Ross Creek-Woodhaugh Garden Track Network,** 16 July. *Cliff Donaldson*

Seventeen keen members and friends attended this trip on a cool frosty morning. Our leader, John Barkla, gave a summary of the Woodhaugh Garden vegetation, pointing out that there are only remnants remaining of the original forest cover, namely:-White Pine/Kahikatea (*Dacrycarpus dacrydioides*), Lowland Ribbonwood, (*Plagianthus betulinus*) – one of our few indigenous deciduous trees, and Totara (*Podocarpus totara*). However plantings of different native beeches (*Nothofagus* spp.) are thriving. Walking alongside the Water of Leith (the correct title – after its Edinburgh counterpart) we noticed some good specimens of Totara and Kahikatea across the creek in an adjacent patch of bush which is actually part of the Garden but not easily accessible. At the top end of the Garden we saw an excellent specimen of Kahikatea and large Red Beech (*Nothofagus fusca*).

On reaching the Millennium Track upstream we observed how rapidly the native plantings had grown in six years, obviously relishing the riverbed silt. Among these plants was a healthy specimen of *Teucridium parvifolium* (Teucer's medicine). Across the bridge the invasion of Sycamore (*Acer pseudoplatanus*) was obvious where the old quarry was situated. We crossed the junction of Ross Creek and School Creek without getting our feet wet, but a bridge over Ross Creek just below the junction would be an asset to the track system. At the junction a fine Kahikatea was seen, and on the side of the track up School Creek ferns were plentiful, including *Leptopteris hymenophylloides*, while on an overhanging tree we espied a good clump of *Earina mucronata* tree orchid. *Polystichum richardii* was seen on the dry bank of Burma Road where nothing else much was growing. We enjoyed the view from the lookout at the aptly named Prospect Park, where John pointed out the uncommon Mistletoe, *Tupeia antarctica* growing in a Tree Lucerne. From there we walked down the Bullock Track having learned a bit more about these valuable reserves that we often take for granted.

Those attending were:- John, Kirsten, Rebecca and Marilyn Barkla, Yanbin Deng, Joel Tyndall, Karl Perry, Lyn Bentley, Alf Webb, Allison Knight, Kirsa Webb, Janet Ledingham, Francis Beggs, Judy Russell, Nina Hewitt, David Orlovich and Cliff Donaldson.

#### Lichen trip to Sutton Salt Lake, 5 August

Allison Knight

One fine frosty morning 8 keen lichenophiles set off for Sutton Salt Lake. Sun was shining so brightly we could see the snow on the Blue Mountains and the big burnt patch on the Rock and Pillar Range. Alas, then we came into the "Middlemarch blanket" of fog, which extended just as far as Sutton. So it was a cool, misty start to the trip, perfect conditions, as David Galloway said, for giving colour and life to the lichens. First stop was an old stone gatepost and bird perch, covered in ornithocoprophilic lichens, such as *Teloschistes velifer*, *Physcia caesia*, *Caloplaca* and *Rinodina* spp. Obviously grass isn't the only thing that responds to nitrogenous fertiliser. Large foliose *Xanthoparmelia* spp. and the more yellow *Flavoparmelia* spp. were abundant on the schist tors and outcrops.

The saxicolous brown foliose *Neofuscelia* species are now included in *Xanthoparmelia*, making that large genus even more unwieldy in the field. *Peltula euploca* was notable in drainage cracks on the tors, not to be confused with the rock tripe: *Umbilicaria hyperborea* and *U. vellea* on the exposed faces of a few tors. Other lichens on rocks included the bright yellow *Rhizocarpon geographicum* beside a subtle dark brown *Rhizocarpon* sp.; the greeny yellow *Rinodina thiomela* and the hair-like *Bryoria austromontana*. Orange *Caloplaca* sp. made a very distinct splash zone on the rocks around the lake. *Caloplaca erecta* grew in orange humps on a bird perch rock by the lake, *Caloplaca lutea* was more of an egg yolk yellow while *Caloplaca rubelliana* (formerly *C. amylacea*) was a redder orange.

Eight pairs of eyes to the ground turned up a surprising number of terricolous lichens: *Endocarpon* squamules; *Bilimbia australis* and *Micarea* sp. with black, convex apothecia; *Peltigera didactyla* hosting a fluoro pink lichenicolous fungus (*Illosporium carneum*); at least 6 species of *Cladonia*, including the pixie cup *C. pleurota*, and the reindeer lichen *C. confusa*; the ubiquitous perforated *Cladia aggregata* and, on the shore of the lake, the red-

orange crust of *Caloplaca cirrachroaoides*. All of these colonise disturbed areas and help consolidate exposed soil.

Corticolous lichens on the spiny Matagouri (*Discaria toumatou*) and Porcupine shrub (*Melicytus alpinus*) were rather sparse. In one small area branches were festooned with *Ramalina glaucescens*. We saw a little *Physcia adscendens*, a tiny spot of *Haematomma babingtonii* and one small thallus of *Xanthomandoza novozelandiae*. The few lichens with cyanobacteria as their photobiont we saw were *Pseudocyphellaria crocata*, *Coccocarpia palmicola* by a damp rock, *Leptogium/Collema* by the lake shore and the *Peltigera didactyla*. All the rest were associated with green alga. David pointed out that lichens are a very ancient life form, the first evidence of them being found over 400 million years ago in the early Devonian, which pre-dates land plants. The ability of fungi to effectively 'farm' algae makes such a successful combination that lichens are often the first coloniser on bare soil and rock.

Altogether a wonderfully interesting day, thanks to David sharing his vast store of knowledge so generously. Lucky participants (left – right below) were: David Galloway, Annette Joel, Alf Webb, Kirsa Webb, Judy Russell, David Lyttle, Allison Knight, Janet Ledingham, and Yanbin Deng (shadow!).





Lichen List, Sutton Salt Lake, 5 August 2006 David Galloway and Allison Knight

	Lepraria sp.
Acarospora schleicheri?	Leptogium/Collema (lake shore)
Acarospora sp. (rock)	Parmelia signifera
Acarospora sp. (soil)	Parmelia sulcata
Aspicilia sp. 1	Parmotrema reticulata (was Rimelia)
Aspicilia sp. 2	Peltigera didactyla
Bilimbia australis (was Mycobilimbia)	Peltula euploca
Bryoria austromontana	Pertusaria sp.
Caloplaca cirrochroaoides	Physcia adscendens
Caloplaca erecta	Physcia caesia
Caloplaca lutea	Physcia dubia
Caloplaca rubelliana	Pseudocyphellaria crocata
Caloplaca rubelliana agg.	Pseudocyphellaria glabra
Caloplaca sp. 1 orange	Ramalina glaucescens
Caloplaca sp. 2 orange/red, sessile fruit	Ramboldia petraeoides
Caloplaca sp. 3 reddish, immersed fruit	Rhizocarpon geographicum agg.
Candelariella sp.	Rhizocarpon sp. (dark brown)
Cladia aggregata	Rinodina sp.
Cladonia capitellata	Rinodina thiomela
Cladonia melanopoda	Stereocaulon corticatulum
Cladonia mitis (was Cladina)	Teloschistes velifer
Cladonia pleurota	Tephromela atra
Cladonia sp. 1	Umbilicaria hyperborea
Cladonia sp. 2	Umbilicaria vellea
Cladonia sp. 3	Usnea sp. 1 (was Neuropogon)
Coccocarpia palmicola	Usnea sp. 2
Diploschistes scruposus	Xanthomendoza novozelandica
	(was Xanthoria)
Endocarpon sp.	Xanthoparmelia australasica
Flavoparmelia sp. 1	Xanthoparmelia mougeotina
Flavoparmelia sp. 2	Xanthoparmelia tasmanica
Haematomma babingtonii	Xanthoparmelia petriseda (was
	Neofuscelia)
Hypogymnia lugubris	Xanthoparmela sp. 1 (was Neofuscelia)
Hypotrachyna sp. (sorediate)	Xanthoparmelia sp. 2
Lecanora dispersa	Xanthoparmelia sp. 3
Lecanora farinacea	Xanthoria candelaria?
Lecanora galactiniza	Xanthoria elegans?
Lecanora rupicola	Xanthoria ligulata
Lecidea fuscoatrula	Xanthoria parietina
Lecidea lygomma	*Illosporium carneum
	*Lichenicolous fungus

#### **Insights of South American flora and fauna.**

Judy Russell

Pascale was recently in Brasil to deliver a paper and she bought us back her insights and much interesting information on South American flora and fauna. I found it all the more impressive as she spoke fluently in English, her second language. How many in the audience, I mused, could do that? Pascale's many friends in South America enabled her to see many rare plants during her stay.

In the discussion afterwards kapok trees that provided the stuffing for pillows and mattresses of our past were mentioned; also the ease with which the colourful Chilean flame tree (*Embothrium coccineum*) is 'at home' here in New Zealand.

If you are a keen cyclist don't set your sights on visiting the parks Pascale mentioned – National Parks are for keen observers, not wheelers. For more detail, Pascale has kindly made her notes available as an article in this newsletter.

Muchas gracias a ti Pascale y Buena suerte.

## Waipori River Valley, 16 September 2006

Peter A. Robb

A fine day [early on] at 8.30 AM in Dunedin this Saturday, the sixteenth of September brought out five intrepid Botanical Society of Otago members enthusiastic for the trek into the hinterland. Our objective was to proceed through the Waipori broadleaf forest along the marked track across the fenced grass pasture firebreak and on to the native Silver Beech stands beyond. We were going through a diverse range of forest types according to John Barkla our team leader. Myself [new chum and BIOL 113 student], along with Janet Ledingham and Bill and Diana Wilson, all meandered up the steady incline of the old 1860s Government standardised track [for drays and horses to the Central Otago Goldfields]. There were numerous species to attract our attention. This was greatly aided by the acuity of John Barkla. Initially in the mixed broadleaf forest there were many Coprosma species and juvenile Totara and Lancewood [Pseudopanax crassifolius]. There were many flowering Kowhai or South Island Sophora with bellbirds and tuis in attendance. We moved into Kanuka dominated forest with many huge Matai and Totara trees that impressed us greatly. Emerging from this section we came upon a number of Olearia fragrantissima and Pseudopanax ferox. Fighting wind and rain, we traversed the fenced pasture leg and the cattle were tiny specks below in the valley. Two rainbows appeared in the misty gorge below. Beyond the pasture we began to encounter the Silver Beech Forest and observed a native orchid [Nematoceras trilobum (previously known as Corybas trilobus)]. We had lunch at a lush tree fern grotto and headed back as the rain had set in. Look for John Barkla's species list in the next Newsletter.



John Barkla with Matai trunk - Waipori Forest. – *Peter A Robb* 

#### **Book review**

#### An Illustrated Guide to New Zealand Hebes by Michael Bayly and Alison Kellow.

Te Papa Press

Reviewed by Mike Thorsen

Having eagerly awaited the publication of this book on the New Zealand *Hebe* species, I was not disappointed when my copy arrived. First impressions were that this is a very comprehensive and excellently illustrated book on this large and diverse group of plants. Information is provided on *Hebe* classification and evolution, distribution and biogeography, morphology, biochemistry, chromosomal data, reproductive biology, conservation, and a large section on species descriptions and information. The quality of information is indeed comprehensive and, more importantly, easily understood (even the chapter on flavonoid biochemistry!). Identification keys are provided and having only tested these a few times, I found that they generally work well. They are not reliant on floral characters until further on in the keys - a nice feature allowing you to decide to what group of Hebe a scrappy, hurriedly collected fragment may belong. Identification characters are accompanied by a clear photo or illustration. The species descriptions are excellent and accompanied by a range of mostly stunning photos principally by Bill Malcolm. Photos illustrate leaf, floral, capsule, seed, and growth form characters, as well as additional photos as necessary. Being in colour, they are easy to match to fresh specimens. The not- so good sides of the book? Very few. Like any taxonomic treatment, there will always be disagreement about placement of different taxa (as the Authors admit). The Authors have not evaluated taxonomic ranks below species in most cases and have retained previous ranks, sometimes in new combinations. Some taxa have been discarded, often with good reasoning, but in the case of *Hebe anomala* p.p. considered by some botanists as distinct from *Hebe odora*, no reasoning is given. Overall, an excellent book and worth the \$100 (\$90 for NZPCN members, and NZ Botanical Society members, with voucher).

NB: Claire Murdoch, Te Papa Press has generously extended the deadline on the 10 % discount until 31 December for BSO members. Use vouchers on page 29.

## **New publications**

# Supplement to Eagle's Complete Trees and Shrubs of New Zealand - additional notes. By Audrey Eagle

The Botanical Society of Otago is publishing a supplement to Audrey Eagle's superb revision of her two previous books containing her paintings and information on nearly all the trees and shrubs found in New Zealand.

The Supplement contains additional information on many of the species in Audrey's books. Additional information is given on distribution, habitat, ecology, morphometrics, taxonomic history and relationships, plant uses, discoverer(s), and bibliographic notes amongst other subjects. This information has been collated from Audrey's notes as well as those provided by many of New Zealand's leading botanists such as Colin Ogle, Brian Molloy, Peter de Lange, Shannel Courtney and many others. The quality and amount of information is stunning, and as such is a valuable addition to accompany Audrey's books.

Publication is timed for mid-November to coincide with Eagles Complete Trees and Shrubs of New Zealand. Price is yet to be established, but it will be at about cost price. Further information on the Supplement, including an order form, will be on the Botanical Society of Otago's website www.botany.otago.ac.nz/bso/ from late October.

# EAGLE'S COMPLETE TREES AND SHRUBS OF NEW ZEALAND Botanical Paintings and Descriptions by Audrey Eagle

An outstanding contribution to the study of botany in New Zealand and essential addition to any library.

The first volumes of *Eagle's Trees and Shrubs of NZ* were published in New Zealand in 1975 to universal acclaim, and quickly became classic references for New Zealand botanists and plant-lovers.

This long-awaited new edition brings Audrey Eagle's botanical artworks together for the first time in over 40 years, depicting every native tree and shrub. The books are full of new paintings, including 173 new species and subspecies, bringing the total number of plants illustrated to 806.



All plants are all depicted at life-size and include many detailed enlargements, showing all aspects of the twigs, flowers, fruit, nuts and flowers of each plant in technically superb detail.

Comprehensive notes, drafted in consultation with expert botanists from around New Zealand, provide up-to-date botanical and identification information on every plant, including descriptions and notes on habitat, distribution, synonymy and nomenclature.

#### THE AUTHOR

Audrey Eagle has been painting New Zealand native plants since 1952. She was born in Timaru and spent her teenage years in the Oxfordshire countryside, returning to New Zealand after her marriage in 1949. Author of *Eagle's Trees and Shrubs of New Zealand in Colour* (1975) and *Eagle's Trees and Shrubs of New Zealand Second Series* (1983) and a number of other books, Eagle is an active member of botanical and conservation societies such as the Royal Forest and Bird Protection Society, the Nature Conservation Council and the Loder Cup Committee. *Eagle's Complete Trees and Shrubs of NZ* represents her life's work and the achievement of her goal: to illustrate representatives of all genera of native trees and shrubs.

Published by Te Papa Press on 3 November 2006. NZ RRP (incl. GST): \$200.00 Extent: Volume I 544 pp, Volume II 592 pp, in a slipcase ISBN: 0909010080 Illustration: 500 full-colour plates Format: 280 x 230 mm portrait 10% discount for BSO members until Dec 31. Use discount voucher on p 30.

Remember: University Book Shop also offers a 10% discount to University staff and students, and to members of the Dunedin Public Library. BSO members can also get this discount for this book if they bring their Newsletter as proof of identification.

What you save on the discounts, you could use for the Eagle Supplement.

#### Web Sites

#### **Botanical Books from India**

Thirteen books with a botanical (and Indian) theme are available from: www.akhilbooks.com. Subjects include ferns, fungi, lichens, mosses and medicinal plants.

#### **NZPCN** Website developments

John Sawyer

This is a short update on the website of the New Zealand Plant Conservation Network (see www.nzpcn.org.nz). This is the most visited, accurate and up-to-date repository of information about New Zealand's plants and their threats.

The Network has now added:

- \* An animal pest database see: http://www.nzpcn.org.nz/animalpests/index.asp
- \* A tool to search the threatened fungus database by place name. So for example, if you type in Canterbury into the District field you will get all the threatened fungi that occur there. See: http://www.nzpcn.org.nz/fungi/advanced\_search.asp

- \* A threatened moss and liverwort (bryophyte) database (under Threatened Species) see: http://www.nzpcn.org.nz/liverwort/advanced\_search.asp
- \* An author field to the Publication search engine. So you can type in a name and see if the network has any plant lists or reports online,
- e.g., Druce. See: http://www.nzpcn.org.nz/newsletter\_publications/index.asp

In addition in the next week we are about to add:

\* A tool to allow threatened plant lists to be downloaded for each territorial local authority and regional council.

#### **NEWS**

#### A Bot Soc Hebe!

Surely this is a first – a plant named for a Botanical Society. In February 2000 the Nelson Bot. Soc. discovered a new *Hebe* growing on Mt Murchison in the Braeburn Range. It has been named *Hebe societatis* Bayly et Kellow. 'Societatis' means 'for the society'. Check it out in the new *Hebe* book.

(adapted from the Auckland Bot Soc Newsletter, Sept. 2006)

#### Awards to Botanists

#### Queen's Birthday Honour

Congratulations to Peter Wardle, one of our first Baylis Lecture speakers, who received The Order of Merit, ONZM in the last series of honours. He received this very high merit award for services to plant ecology.

#### **HH Allan Mere Award**

Peter de Lange, DOC, Auckland, is the deserving recipient of this year's Allan Mere Award, judged by the New Zealand Botanical Society. Peter works as a Threatened Plants Scientist and is a leading figure in NZ taxonomic botany. The Botanical Society of Otago supported his nomination.

## **Cover Pictures**

#### Front cover.

*Microsorum pustulatum.* Detail of drawing by Kathleen Graham, entered in the 2005 BSO Audrey Eagle Botanical drawing contest.

#### Back cover

*Corokia cotoneaster*. Detail of drawing by Kathleen Graham, entered in the 2005 BSO Audrey Eagle Botanical drawing contest.

# **Botanical Diary**

#### **National**

#### CHATHAM ISLANDS BOTANICAL TOUR

An opportunity for travellers interested in plants to enjoy an informative week on the remote Chatham Islands.





**Dates** 15–22 November 2006 (depart/return Wellington)

**Leader** Dr Peter Johnson

Botanist and plant ecologist; author of books on New Zealand plants, wildflowers, and wetlands; enthusiastic tour guide; and a regular visitor to the Chathams as a member of the Chatham Islands Conservation Board

#### **Tour Summary**

This is a special version of the high standard tours run by Hotel Chatham. We visit coastal sites, dune country, wetlands, the huge Te Whanga Lagoon, vegetation both windswept and sheltered in forest, heathland, and bog. Many endemic, colourful, and interesting plants. Also lots of landforms, birds, and history. Stimulating discussions balanced with ample free time. Plenty of outdoor exercise plus fine food and admirable accommodation.

Package price (per person) \$2655 (share twin), \$2555 (single)

**Contacts** For further information, including itinerary, optional extras, etc.:

Peter Johnson, 5 Matariki St., Broad Bay, Dunedin Phone (03) 478 0376. <a href="mailto:pnjay@actrix.co.nz">pnjay@actrix.co.nz</a>
Seymour Tours

Phone 0800 273 366. www.seymourtours.co.nz





#### Cheeseman Botanical Symposium, Auckland 20-22 Nov 2006

Including Presentation of the HH Allan Mere and Official Launching of Audrey Eagle's monumental *Complete Trees and Shrubs of New Zealand*.

See BSO noticeboard or email Mei Nei Lee, mnlee@aucklandmuseum.com for more details.

# 28 Dec – 11 Jan. Combined Wellington and Otago Botanical Societies Summer trip to Stewart Island and the Catlins. Update.

#### 28 December 2006 - 5 January 2007. Rakiura National Park/Stewart Island.

The reservations we have for accommodation and transport for Stewart Island are mostly taken but we may be able to expand these bookings - If you want to join Stewart Island part of the trip and have not already booked please contact Rodney to discuss what can be done. The sooner you contact him the better the chances. If you are fit and adventurous there may even be one or two spaces left to fly into Mason Bay and walk across to Freshwater Hut, climb Rocky Mt then water taxi to Oban. Ulva Island is on the trip list for everyone.

#### 5 January 2007 - 11 January 2007. Catlins, eastern Otago

There is ample room in the Catlins accommodation. We need to know by the first week of December for that part of the trip. Contact Rodney Lewington. (tel (04) 4753145 e-mail rodneyjl@xtra.co.nz . 4 Highbury Crescent, Wellington 6012.

#### Local

#### With Enchanted Eyes: Artistic Depictions of New Zealand Flora

An exhibition of favourite botanical art spanning three centuries, featuring treasured books and prints from the Heritage Collections, a selection of original water-colours by botanical artist Pat Brooke of Dunedin, and the scrapbooks of John Buchanan. As a further treat, some contemporary botanically inspired art and craft from Dunedin will be on show.

In conjunction with the exhibition, we will be hosting floor talks by Peter Johnson, botanist, and Jo Ogier, artist, when they will discuss various aspects of botanical art.

20<sup>th</sup> October 2006 - 11 February 2007 9.30 am to 8 pm Monday to Friday 11 am to 4 pm Saturday and Sunday Reed Gallery Floor 3, Dunedin City Library 230 Moray Place, Dunedin

# **Order Form**

Botanical Society of Otago

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10% discount	\$10.00			
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Museum of New Zealand Te Papa Tongarewa Cable Street, PO Box 467 Wellington, New Zealand Phone: +64 4 381 7470 Fax: +64 4 381 7280



# 10% Discount from Te Papa Press – expires 31 December

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# **Botanical Society of Otago:**

PO Box 6214, North Dunedin, NZ

http://www.botany.otago.ac.nz/bso/

Patron: Professor Peter Bannister

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Please submit copy for next newsletter by 10 February 2007

#### This Newsletter was published on 10 October 2006. ISSN 0113-0854

Membership form: Botanical Society of Otago, 2006

This form is also available on our website;

http://www.botany.otago.ac.nz/bso

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