

Botanical Society of Otago Newsletter.



Number 28
Sept - October 2001

BSO Meetings and Field Trips

- 12th September, Wed, 12 noon. Combined BSO/ Otago University Botany Dept seminar. Prof Alan Mark's illustrated talk on **Tibet, Mongolia and Russian Caucasus: Seven weeks with local ecologists**. Union St Lecture theatre, upstairs, corner of Union St. West & Gt King St.
- 26th September, Wed, 7 pm. **Barbara Anderson** talks on her botanical experiences in **Patagonia**. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.
- 20th October, Sat, 1.30 pm. Tour of **Emeritus Prof. Geoff Baylis' Garden**. 'Threave', 367 High St. A chance to have a look in later spring at this special garden with a history of nearly a century of extensive plantings of both exotic and native treasures, including rare endemics from the Three Kings islands.
- 24th October, Wed, 7 pm. **Sue Bennett** talks on **Botanical Conservation Volunteer Work on Raoul Island**. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.
- 15th November, Thurs, 7 pm. **Dr Jill Rapson**, Massey University, talks on **Barrier Islands and Coromandel almost-island**. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.
- 18th November, Sun, 9 am. **Anni Watkins** will lead a full day **workshop on grasses**. Meet in the Botany Dept carpark, 464 Gt King St.

Contact details for any enquiries are inside the back page

Notes from Head Office

The international theme continues with members ranging far and wide. The South American theme continues with an article by Chris Lusk, and a talk by Barbara Anderson. Your editor has just come back from a trip to Ecuador and the Galapagos Islands, while the chairman has been in Wales, Germany and Romania, hence the lateness of this newsletter. Hopefully there will be more about the effect of toothless browsers on plant form in the Galapagos in the next issue. Even further afield, Prof. Alan Mark has just spent 7 adventurous weeks looking at the ecology of Tibet, Mongolia and Russian Caucasus, so his talk next week will be filled with interest.

Closer to home, our congratulations go to Audrey Eagle, who received the NZCSM for services to botanical illustration in the Queen's Birthday Honours. We are very fortunate to have the opportunity to see Prof Baylis' garden at a later stage in spring. His endemics from the Three Kings carry on the island botany theme, as do talks from Sue Bennett on Raoul Island and Jill Rapson on Barrier Islands, while Anni Watkins' grass workshop will provide welcome guidance on using the new grass Flora.

Summer trips are in the pipeline – once again we are privileged to be invited to join the Wellington Botanical Society, this time based at Twizel and Lake Ohau. See diary section for more details. Meanwhile, make the most of all the local botanical activity.

Bastow and Allison

Cover picture First entry in the BSO logo competition, by *Adrienne Markey*. **Back cover:** 'icicle' fungus seen on Birch Island trip.

CONSERVATION REQUEST – *your chance to comment*

Draft Recovery Plan for the rare, small-leaved daisies

BSO has received a copy of the draft Recovery Plan for six of the rare, small-leaved daisies. These are *Olearia gardneri* (critically endangered), *O. hectorii* (endangered), *O. polita* (endangered), *O. fimbriata* (declining), *O. fragrantissima* (declining) and *O. capillaris* (sparse).

The DoC recovery group is seeking comment on this draft before finalising and publishing their plan. Bastow is holding our copy.

If you wish to comment please do so before 2 November this year, to the the following address:

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LETTER TO THE EDITOR

New Southland Natural History Field Club

In August 2000 the Southland Natural History Field Club was launched. It was decided that there were too few local members of the Entomological, Botanical and Ornithological Societies to make separate meetings worthwhile so we have combined forces to produce a general natural history club that aims to study, educate, collect data and visit places of interest in Southland. We have noticed that botany and ornithology often go together so it seems logical to cater for both at once. We have monthly meetings followed by a fieldtrip. So far we have been to Lake Hauroko, Mason Bay, Orepuki, Waipapa Point, Dunsdale and Lake Monowai. Our meeting topics have included coastal birds, mosses, life in a drop of water, ferns, lizards and Subantarctic Islands.

One of the problems with an organisation like this is making it sufficiently different from Forest and Bird. We are not a conservation organisation and we are doing many of the practical bird activities such as surveys and banding that Forest and Bird is not involved with. Although less than a year old we have 30 members and we are hopeful of growing and extending our range of activities. The Southland Explorers Club, a natural history club for children, has been wound up and reinvented as the junior section of the fieldclub. We are planning to have fortnightly meetings of the junior section with a programme of games, fun activities and practical work aimed at getting the Science Badges passed. One child has completed four badges. These include botany, mycology, ornithology, geology, meteorology, astronomy, entomology, home chemistry and arachnology. We considered taraxacology but after you have excavated, measured, drawn and eaten a dandelion there isn't much else you can do with it.

One of our projects that we need a hand with is the nationwide bird survey currently being carried out by the Ornithological Society. Each of the 10 × 10 km squares on the 1:250,000 scale map needs a bird list. Otago and Southland are both making good progress - Southland has lists from 206 of its 485 squares so far, already extending the range of some species. Any birds from any locality are useful but we are particularly keen to cover squares in the remoter parts of Southland such as the Eyre Mountains, Fiordland and Stewart Island. I can provide maps and forms.

Got a project you need a hand with? That's the fieldclub's job!

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ARTICLE

Barbara Anderson's article in the previous issue compared her immediate impressions of South American and New Zealand rainforests. To follow on, we have the benefit of ex-patriate Chris Lusk's longer-term perspective.

Reading between the leaves: Chilean and New Zealand rainforest

By Chris Lusk, Depto. de Botánica, Universidad de Concepción, Chile.

Take a look at one of 'biomes of the world' maps, and you'll see 'Temperate evergreen rainforest' shown for most of southern Chile. Same as what's shown for home. Then enrol in Kath Dickinson's 4th year ecology course and you'll probably feel like screenprinting a whole batch of "Reunite Gondwana" t-shirts in English, Spanish and proto-Polynesian. *Nothofagus*, *Podocarpus*, *Griselinia*, *Luzuriaga* and any number of other familiar names, growing on the faraway other side of the Pacific.

When you actually get to southern Chile on your next summer holidays, or on fieldwork, in many cases you won't need Plant Taxonomy 501 to recognise Chilean kith and kin of totara, beech, wineberry etc. What's more, you'll find a landscape that is reminiscent of home. Except, try to imagine Lake Wanaka with its solid Alpine backdrop, conflated with Taranaki's lonely igneous silhouette and rain-fed dairy pastures.

It's not only the landscape and the recognition of individual plants that remind a New Zealander of home. The forest has the same Gondwanan feel, at once familiar and ominous. That complexity and mystery that are missing from Europe's park-like deciduous glades, or from the coniferous monotony of the north.

Poet Pablo Neruda explored the secret corners of the Chilean rainforest and marvelled at its endless small surprises. You'll find his pages peopled by shiny beetles, giant mosses, aromatic leaves. Epiphytes perch in nooks and crannies, sending roots sprawling down trunks. Filmy ferns are everywhere. There are a few vines to swing on, although not as many as in northern New Zealand. The same evergreen hues predominate, not the spring-green of the northern temperate deciduous forests. White flowers are in the majority, although there are also plenty of red tubular ones, most of these pollinated by 'picaflores' (humming birds).

The forest roof is pierced by towering emergent trees with ragged crowns, not unlike podocarps in New Zealand. But you'll soon realize that these lords of the Chilean forest are not in fact podocarps, but usually *Nothofagus* or other broadleaved trees. There are a couple of really big conifers, although neither is widespread. One is the unmistakable monkey-puzzle tree (*Araucaria araucana*), probably Chile's best-known botanical ambassador. The other is the Methuselah-like 'alerce' (*Fitzroya cupressoides*), the second-longest-lived tree on earth, which looks and acts much like an outsize kaikawaka (*Libocedrus bidwillii*).

As in New Zealand, the birdlife in Chilean forests is usually discreet in appearance and habits. The exceptions are the local avian stars – the woodpeckers ('carpinteros') and the hummingbirds. The latter can appear soundlessly out of nowhere, to hover a few inches in front of your eyeballs. Why me? Then you remember that today you're wearing a large reddish 'flower' on your head or round your neck. And then there are native mammals in the Chilean forest. Foxes (*Pseudalopex* spp.) loiter around camping grounds and rubbish bins in national parks, sometimes sporting the latest fashion in radio-trackers. If you're lucky you might catch a glimpse of a pudu (*Pudu pudu*), reputedly the smallest deer in the world. You're very unlikely to see a puma (*Felis concolor*), although you probably will hear stories about the rustling exploits of these elusive felines.

So you already knew about the picaflores and the carpinteros, having seen the BBC's 'Flight of the Condor'. Standard New World fare, even if not exactly Gondwanan. But did anybody warn you about the hazards of stumbling into a **bamboo** thicket?! The tree horizon disappears, you begin to lose faith in your compass, there is a momentary flutter of panic. Southern Chilean forest is full of bamboos (genus *Chusquea*) that form impenetrable thickets in treefall gaps. Remember the Zen riddle about whether a tree falling in the forest makes a noise if there's nobody around to hear it? Well, as Chris Knox pointed out recently, those Zen bores should be sent to study Forest Ecology 101. Whenever a big tree falls in southern Chile, the bamboo moves in rapidly, extinguishing most other vegetable life in the gap. There it holds sway for at least 15 yrs, the tallest species (*C. coleou*) reaching heights of up to 8 metres. Until one summer, without warning, the whole local bamboo population flowers, seeds and dies en masse, an event which is at least as portentous as the toppling of the tree 15 to 25 yrs earlier. Rodent population numbers sky-rocket, gorged on the glut of bamboo seed. Almost unbelievably in these wet forests, fire becomes a real possibility, as the dead bamboo stems dry into ideal kindling under the next summer's sun. And light reaches the ground again in the treefall gap, giving the seedlings of the forest trees a chance to reclaim their inheritance from the usurper. But the respite is brief, as the next generation of bamboo seedlings is quickly underway. So the succession back to tall forest can take many decades.

It's not difficult to understand why Chileans often use rude words when they talk about, or directly address, the local bamboos. New Zealand ecologists and foresters don't have to deal with anything quite so obstructive to tree regeneration, vegetation sampling, or simply getting around in the forest. On other hand, the bamboos keep Chilean taxonomists gainfully employed, as there are about 20 species, some of which are devilishly hard to tell apart. Chilean industry has also found a use for what has often been considered a weed - the stems of some *Chusquea* species are used to make furniture.

Then you might start to miss the treeferns. Not a single species on the Chilean mainland, although there are a few on the Juan Fernandez islands out in the Pacific Ocean. The Chilean rainforest is rather poor in ferns in general, perhaps because the bamboos don't leave much room for them. There are also fewer shrubs than in New

Zealand, once again probably attributable to competition from those bamboos. Chileans have no need of a local equivalent of Hugh Wilson's guide to New Zealand's bewildering diversity of small-leaved shrubs.

Besides floristic differences, another thing that might surprise the visitor from New Zealand is the sight of familiar-looking plants acting a bit strangely. Like *Nothofagus* growing in the company of *Laurelia* - try finding that association in New Zealand. *Nothofagus* grows on a wider range of sites in Chile than in New Zealand, at least one of the nine South American species being present in virtually all forest types south of latitude 38°S. The success of *Nothofagus* in South America might stem from its "having the drop" on its local competitors. Whereas in New Zealand most emergent trees are podocarps, in Chile *Nothofagus* has moved into the top storey of the forest, and the few local podocarps are confined to the canopy. So the common elements of N.Z.'s Gondwanan heritage sometimes fit together differently in Chile.

If you look at the drama of forest succession, you'll find a clear divergence of NZ and Chile's hitherto parallel lines. *Nothofagus* is a ubiquitous coloniser of open spaces in southern Chile, slowly giving way to a range of shade-tolerant trees as succession advances. Whereas in New Zealand, stable self-replacing *Nothofagus* communities are the norm, as the genus tends to be relegated to sites that are not to the liking of shade-tolerant broadleaved trees. In Chile there is nothing comparable to the plethora of shrubs and small trees that precede tall forest on sites cleared by fire or farming back home. Nor is there an obvious parallel for the protracted curly successions in the central North Island podocarp forests that have long caused Kiwi foresters and ecologists to scratch their pates.

As it is for the landscape, so it is for the forest – many of the same elements, but combined differently. It's such a familiar setting, and you can you recognise half the players. But you'll see a new story unfold.



Bambusa guadua, one of the many bamboo species in South America

REPORTS

Meeting Reports

The last two meetings have been characterised by superb photography, allowing us to experience close-up the botany of remote places, and to compare and contrast the plants of two interesting areas connected by a common Gondwanic origin.

In June **Kelvin Lloyd** treated us to a fabulous display of his ‘**Fabulous Fiordland**’ slides, transporting us to pristine areas of native forest, tussock grasslands and alpine plant communities, which are inaccessible to all but the most dedicated botanist. The soaring mountains, misty vistas, hidden lakes and clear streams formed an impressive backdrop to the distinctively diverse *Chionochloa* tussocks, the delicate silver and white *Celmisia* daisies and the evocative moss and lichen encrusted forests. Thank you, Kelvin, for sharing your remotest explorations with us.

Then in July **Neill Simpson** immersed us in the colourful world of ‘**Alpine and other spectacular plants from Chile and Argentina**’. The snow-capped volcanoes, the glaciers and alpine lakes were reminiscent of new Zealand, as were the evergreen lowland *Nothofagus* beech forests, but the monkey puzzle trees, *Araucaria araucana*, towering above the beech, and the cold-tolerant, large-leaved, deciduous *Nothofagus antarctica*, with its brilliant autumn colours at tree line, were distinctly South American. As were all the colourful flowers – amazingly intense purple, yellow and orange oxalis, red mistletoe, *Tristerix aphyllus*, growing incongruously on a cactus, whole fields of bright Calceolaria, the large flowered scree *Ranunculus semiverticillatus* with broccoli-like leaves, and the striking metallic blue spikes of the *Puya berteroniana*. Thank you, Neill, for taking us on a dazzling botanical tour.

Once again we are stimulated to ponder the origin and evolution, the similarities and differences between New Zealand and South American flora. Why have the flowers have become paler in one place and brighter in the other, why are there are no native deciduous trees here, and other anomalies that Barbara Anderson and Chris Lusk have drawn our attention to in their recent articles.



Monkey puzzle (*Araucaria*) forest in Chile – from The International Book of Trees, by Hugh Johnson
Interestingly, our New Zealand kauri are in the same family as *Araucaria* .

Trip reports

Otago Peninsula: Portobello Peninsula and Varley's Hill.

The last Sunday in April a small group explored three reserves on the Otago Peninsula. In the morning Kath Dickinson led us round two bush remnants near the tip of the Portobello Peninsula. Closest to the marine aquarium, and facing north-west, is the University owned Lister Reserve, named in memory of Ron Lister, a previous professor of Geography. Here we were momentarily stumped by the odd appearance of a small-leaved milk tree, *Streblus heterophyllus* and a prostrate native celery, *Apium prostratum*. This reserve has been fenced since Peter Johnson's comprehensive survey of pockets of native vegetation on the Otago Peninsula, and it was interesting to note the return of a few ferns such as *Blechnum fluviatile* and others (see plant list) since the original survey. Sadly, the fence is not stock-proof, or there may well have been more. The Library Reserve, on the south-western slope, is still grazed by sheep and mainly larger shrubs and trees survive there.

The resurgence of ferns after complete exclusion of stock was very evident at Varley's Hill, by Hoopers Inlet, which we visited in the afternoon. Moira Parker has been monitoring their reappearance in their Q.E.II covenanted area of regenerating bush. Moira has noted 7 additional fern species since 1993, bringing the total of ferns recorded there to 23. The Varley's Hill covenant also contained some small-leaved milk trees, another puzzling small-leaved scrambling herb of the celery family, *Scandia geniculata*, and several species of *Acaena*, some of which were keyed out on Moira and John's kitchen table, using Kelvin's useful *Acaena* key.

Waipori Gorge fungal foray

On a sunny Saturday in early May three carloads of would-be mycologists set off to Waipori Gorge on a fungal foray ably led by David Orlovich. The Government Track beckoned with fruiting bodies of all shapes, sizes and colours, from the tiny, delicate parasols of *Mycena* species on the forest floor to a clump of large *Armillaria* protruding from a live tree trunk beside the track. There were several opportunities to compare the confusingly similar red stalked fungus, *Weraroa erythrocephala* with the identically coloured red pouch fungus, *Paurocotylis pila*, and to wonder how this parallel evolution came about, when *Weraroa* is from the phylum Basidiomycota while *Paurocotylis* is an ascomycete. A red tentacled stinkhorn, *Aseröe rubra* was another find by the track, but the sought-after *Nothofagus* beech forest, with its associated mycorrhizal communities, kept receding in to the distance. Digital cameras were kept busy recording the varied collections, which were taken back to the OU Botany Department laboratory after lunch for further identification and drying for the OTA herbarium collection.

There is so much still to see and learn that we look forward to a visit to the elusive beech forest next fruiting season, especially if the rich variety seen on the relatively ungrazed floor of Birch Island a week later are anything to go by.

Species list for Lister and Library Reserves at the tip of Portobello Peninsula

Compiled by G Kyle, with the help of K Dickinson, B Wilson, R Bridges and A Knight, April 2001

<i>Acaena novae-zelandiae</i>	bidibid	<i>Metrosideros diffusa</i>	rata
<i>Acaena anserinifolia</i>	bidibid	<i>Microsorium pustulatum</i>	hound's tongue
<i>Agrostis capillaris</i>	browntop	<i>Muehlenbeckia australis</i>	* muehlenbeckia
<i>Aira</i> sp	hair grass	<i>Myoporum laetum</i>	* ngaio
<i>Apium prostratum</i>	NZ celery	<i>Myrsine australis</i>	mapou
<i>Asplenium obtusatum</i>	shore spleenwort	<i>Olearia avicenniifolia</i>	(endemic)
<i>Blechnum fluviatile</i>	creek fern	<i>Olearia colensoi</i>	(endemic)
<i>Blechnum procerum</i>	small kiokio	<i>Parmelia</i> spp	lichen
<i>Blechnum</i> spp		<i>Parsonsia heterophylla</i>	* native jasmine
<i>Calystegia</i> sp	bindweed	<i>Phormium tenax</i>	flax
<i>Cardamine</i> sp	(cress sp)	<i>Pinus radiata</i>	* radiata pine
<i>Cerastium fontanum</i>	mouse-ear chickweed	<i>Pittosporum tenuifolium</i>	kohuhu
<i>Cirsium arvense</i>	Californian thistle	<i>Poa cita</i>	silver tussock
<i>Cirsium vulgare</i>	spear thistle	<i>Podocarpus hallii</i>	* Hall's totara
<i>Clematis paniculata</i>	native clematis	<i>Polystichum richardii</i>	shore shield fern
<i>Coprosma areolata</i>	* (endemic)	<i>Pseudopanax crassifolius</i>	lancewood
<i>Coprosma crassifolia</i>	* (endemic)	<i>Pseudowintera colorata</i>	pepper tree
<i>Coprosma propinqua</i>	* (endemic)	<i>Pteridium esculentum</i>	bracken
<i>Cordyline australis</i>	* cabbage tree	<i>Ranunculus repens</i>	creeping buttercup
<i>Corokia cotoneaster</i>	* korokio	<i>Ripogonum scandens</i>	supplejack
<i>Crataegus monogyna</i>	hawthorn	<i>Rosa rubiginosa</i>	sweet brier
<i>Crepis capillaris</i>	hawkbeard	<i>Senecio jacobaea</i>	ragwort
<i>Cytisus scoparius</i>	broom	<i>Senecio minimus</i>	
<i>Dactylis glomerata</i>	cocksfoot	<i>Solanum nigrum</i>	black nightshade
<i>Dichelachne crinita</i>	plume grass	<i>Solanum</i> sp	
<i>Dracophyllum longifolium</i>	* inaka	<i>Sonchus oleraceus</i>	sow thistle
<i>Elymus</i> spp (<i>solandri</i>)	(grass sp)	<i>Sophora microphylla</i>	* southern kowhai
<i>Euphorbia peplus</i>	spurge	<i>Sterocaulom ramulosum</i>	lichen
<i>Festuca rubra</i>	red fescue	<i>Streblus heterophyllus</i>	milk tree
<i>Geranium sessiliflorum</i>	(endemic)	<i>Taraxacum officinale</i>	dandelion
<i>Griselinia littoralis</i>	* broadleaf	<i>Teloschistes</i>	(lichen)
		<i>chrysophthalmus</i>	
<i>Helichrysum lanceolatum</i>	* (endemic)	<i>Tetragonia trigyna</i>	(succulent)
<i>Holcus lanatus</i>	Yorkshire fog	<i>Trifolium repens</i>	white clover
<i>Ileostylis micranthus</i>	* endemic mistletoe	<i>Ulex europaeus</i>	gorse
<i>Kunzea ericoides</i>	kanuka	<i>Urtica ferox</i>	* tree nettle
<i>Lagenifera strangulata</i>	(endemic)	<i>Vicia</i> sp	(vetch)
<i>Leontodon autumnalis</i>	autumn hawkbit	<i>Xanthoria parietina</i>	(lichen)
<i>Leptospermum scoparium</i>	manuka		
<i>Lolium perenne</i>	perennial ryegrass	Other species noted in 1982 only	
<i>Lophomyrtus obcordata</i>	* (endemic)	<i>Hebe elliptica</i>	hebe
<i>Marrubium vulgare</i>	horehound	<i>Korthalsella lindsayi</i>	dwarf mistletoe
<i>Melicope simplex</i>	* (endemic)	<i>Sambucus nigra</i>	elder
<i>Melicytus ramiflorus</i>	* mahoe, whitey wood		

* also noted in 1982

Reference PN Johnson, Forest and Scrub Vegetation on Otago Peninsula. Botany Div. DSIR, 1982.

Medicinal waters of Wairongoa Springs

In late June two carloads drove out to Wairongoa Springs, which is nestled up by the hills on the north west side of the Taieri Plains. There we were greeted cordially by our host and guide, Austen Banks. He told us that the Maori name for the area translates as 'medicine water', after the carbonated mineral springs there, which were the basis for the Thomson bottled drinks empire and presumably one reason that John Scott Thomson could afford to spend so much time collecting lichens in the 1930s. The main Thomson family home was further out on the plains, but one of John's bachelor brothers had a passion for planting trees and had established a very eclectic collection around the springs in the first half of last century.

On the upper slopes were tall wattles and larches, with an understorey of native vegetation, predominantly mahoe, *Melicytus ramiflorus* and *Pittosporum tenuifolium*, with a ground cover of ferns such as *Asplenium bulbiferum* and hound's tongue, *Microsorium pustulatum*. A patch of delicate *Blechnum chambersii* fern was thriving under an overhang, near some planted large-leaved rangiora, *Brachyglottis repandra* and healthy *Coprosma grandifolia*. Below the spring was a row of now magnificent red beech, *Nothofagus fusca*, with no sign of regeneration underneath. Lower still were slower growing rimu, *Dacrydium cupressinum*, amidst a large grove of kauri, *Agathis australis*, which were planted in the 1950's. Some of these kauri trees looked to be over 50 feet tall - a rather surprising rate of growth for so far south. Is this more evidence for global warming, or just a very favourable microclimate? The microclimate on the sheltered, northerly slope above the kauri grove is such that figs and lemons flourish by the homestead, where we were shown the window of the bedroom that actor Sam Neill occupied in his younger days.

The water from the spring was surprisingly delicious and refreshing and bubbled pleasantly in the tongue. It was even better with a dash of whiskey provided by our generous host. The spring rose deep in the plantation, and had none of the chill of the surface water. It was a surprise to come across the rather mausoleum-like brick tower, which had been built to protect the source from vandals, looming up out of the trees. Also looking mysterious and incongruous now in odd patches among all the trees were the crumbling stone arches of an old fernery and the remains of two very ornate fountains, their elegant swans and curling metal flowers now wetted only by the rain. We were shown the remains of the collecting tank for the spring water, where a complicated system of pulleys kept a lid over the surface so the bubbles would not escape before bottling. Also the bottling shed, now doing service as a storage and wool shed, with some of the old wooden Thomson cordial crates now acting as shelf-supports.

Footnote

The 1908 Year Book contains an entry on Mineral Waters in New Zealand by Arthur S Wohlman MD (Lond), Government Balneologist. He mentions Wairongoa Springs as a source of drinkable mineral water and classifies it as a "Calcareous or Earth Water" with 165.75 ppm of solids "together with a large excess of carbonic gas which is bottled with the water". He goes on to state that "... so strongly mineralised as to justify the title of "medicinal".

Hidden treasures of the Dunedin Botanic Garden

At the end of July a small group of us were lucky enough to be given an insider's tour of the Dunedin Botanic Garden by Tom Myers. First stop was the impressive Rene Orchiston collection of endemic weaving flax varieties (*Phormium*), all with their traditional Maori names and differing colours, textures and traditional uses, and not yet listed on the visitor's guide. We walked on past the native wetland area, which abounded in sedges and rushes, and then carried on along the Lovelock bush track, where here and there were odd out-of-range kauri, *Agathis australis* and rewarewa (New Zealand honeysuckle, *Knightia excelsa*), that caught the eye amidst the second growth bush, once they were pointed out.

The track led us across the road to the welcome warmth of the propagation house, where we could marvel at strange plants from around the world, such as cycad palms of ancient lineage, insectivorous pitcher plants, sticky *Drosera* sundews, prickly cacti and various thorny plants that are so under-represented in New Zealand.

Tom told us about their Integrated Plant Management System, which aims to maintain plant health by using bio-controls and rapid removal of sick plants to minimise reliance on chemical sprays. The conversation turned to the consequences of ripening hormones that are sprayed over pea, barley and other crops so that they can be harvested in one swoop. The residue left on fresh pea straw used as mulch can cause garden plants to bolt and go to seed, so the trick is to let straw for mulching weather for a year before using on the garden.

The finishing treat was having Tom explain the International Seed Exchange programme that operates between botanic gardens around the world, and being shown the seeds and list of 100 species he had prepared for exchange. Interestingly, two of the species most requested from overseas are our tree fuchsia, *Fuchsia excorticata* and our fierce stinging nettle, *Urtica ferox*, both unusual in their genera in having tree forms.

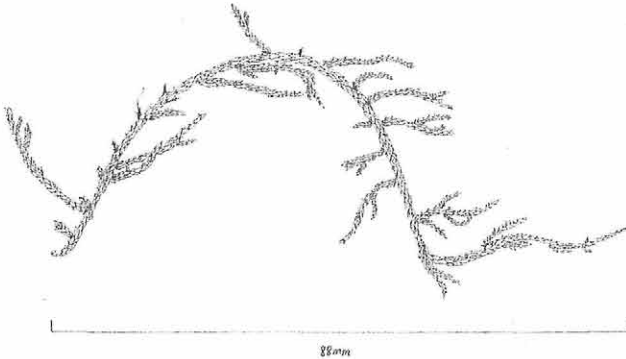
Plant Profile: *Lembophyllum divulgum* (Hook. f. & Wils.) Lindb. By John Steel

Order: Bryales
Family: Lembophyllaceae

This is a fairly common moss to be found on the bark and exposed roots of trees, on rocks, on old logs in damp forested areas, e.g. in the mixed, broad-leaf forest in Leith Valley Dunedin, or in open grassland. The name stems from the Greek word, *lembos*, a small, round boat, and the Greek word, *phyllos*, a leaf, and refers to the almost round and deeply concave leaves, which cannot be flattened on a microscope slide without folding or tearing. The epithet, *divulgum*, refers to the irregular branching pattern. It is the only member of this small genus found in New Zealand. It is also very common in Australia.

Forming dense, brownish to dark-green clumps, it is easily recognised by the string-like branches about 4-5cms long, formed by tightly overlapping leaves, with shorter secondary branches tapering to short blunt-pointed tips. The leaves are up to about 1mm in diameter and have a stout nerve or costa, extending to approximately half way up the leaf, easily seen with a x10 hand lens.

It is extremely variable according to its habitat. In forest, it reaches its maximum size and has a pretty, dark olive-green colour. In coastal grassland, such as that at Tunnel Beach, it can be very small, quite densely packed and almost black in colour



Lembophyllum divulsum, drawn by Inge Andrew

BOOKS

Book review – by John Steel

Simpson, P. (2000). *Dancing leaves: the story of New Zealand's cabbage tree, tī kōuka*.

324 pp. P/back. Canterbury University Press, Christchurch.

The year 2000 brought forth a goodly number of excellent natural history books and my choice for the year was heading towards the Malcolms' *Mosses and other bryophytes – an illustrated glossary*. However, a couple of days after Christmas I was given a copy of this excellent gem. The humble cabbage tree may lack the status and grandeur of the kauri and the podocarps but nevertheless, has a special place in the New Zealand psyche. Its significance to all in New Zealand is amply dealt with here.

This would have to be one of the best books written about one group of plants. The cover photograph of a large group of mature cabbage trees, standing in a field of exotic grasses and bracing themselves against the wind, evokes feelings of the struggle of the

native plant against the changes in its environment from outside forces. The first four chapters deal with the evolution, biogeography, description and ecology of the *Cordyline* genus, its history and its relationships with other families. The importance of tī kōuka to Maori covers the origin and history of the cabbage tree from a Maori perspective. Its importance as a cultural icon is dealt with, as are its many uses.

The cabbage tree formed an early impression on the Europeans, probably because of its exotic appearance, something quite foreign to their eyes. Just how much it affected the European consciousness is clearly covered in the following section and I was surprised at the extent of its use in almost every aspect of European life and culture.

The book finishes with a discussion of its present plight at the hands of sudden decline syndrome, which has had such dramatic effects, especially in the North Island, and ends with optimistic hopes for its future.

Simpson's text makes for easy reading without detracting from its technical content. The many photographs and illustrations are quite excellent. This is a book for reading cover to cover or for dipping into when the fancy strikes. I came away with the impression that Simpson is on familiar terms with every tree in the country and the book has left me with a much more reverent opinion of this, much taken for granted, New Zealand sentinel.

After this review was written, the book was recommended for, and subsequently won, the environmental section of the New Zealand Book Awards, and a well-deserved winner it was too.

This book is available from the University Bookshop. It is also available from Manaaki Whenua Press, at 20% off, which includes post and packing, if you are a member of BSO, and tell them.

Email: MWPress@landcare.cri.nz.

Online ordering website: <http://www.mwpress.co.nz>.

Post: Manaaki Whenua Press, PO Box 40, Lincoln 8152, NZ.

Tel +64 3 325 6700, Fax +64 3 325 2127

Book in Progress

Southland Book of Records, by Lloyd Esler.

Lloyd Esler is compiling the Southland Book of Records, modelled on the Guinness Book of records but better. He is including the Motu Totara photo from BSO Newsletter 26, p14, taken on our field trip last summer. This giant totara has probably the largest girth of any tree in Southland apart from the *Macrocarpa* at Gorge Road which is actually 12 *macrocarpas*, planted together as seedlings in a settler's garden. He never got around to planting them out

Help wanted for Book of Records!

Can you better these botanical records for Southland?

Tallest native: Kahikatea or white pine (maximum height 58m) followed by rimu (33m) are the tallest native species in Southland. The native tree with the largest girth is the Motu Totara, *Podocarpus totara*, in the Dean Forest with a diameter of 263cm and an estimated age of over 1,000 years.

Largest cabbage tree: One with a girth of 5.5m and height 18m was recorded near the Mimihau River.

Introduced trees: The tallest introduced species are radiata pine, *Pinus radiata* and Douglas fir, *Pseudotsuga menziesii* which grow to more than 40m. There is a macrocarpa, *Cupressus macrocarpa*, at Gorge Road with a massive girth. This is actually twelve trees planted together, which have grown into one trunk.

Southernmost pines: There are several large radiata pines on Ulva Island and at Island Hill on Stewart Island. There are macrocarpas on Ulva Island and at Kilbride at the south end of Mason Bay.

Southermost palm: There is a nikau palm planted on Ulva Island.

Largest flowering plant: Red beech, *Nothofagus fusca*, (32m) and silver beech, *Nothofagus menziesii* (32m). **Oak, elm, gum?**

Smallest flowering plant: Water meal, *Wolffia arrhiza* (1mm), is the smallest flowering plant in the world. It grows on the frog pond at Daffodil Bay.

Smallest conifer: Pygmy pine, *Lepidothamnus laxifolius* is the smallest conifer in the world. It can be found at Key Summit.

Largest fern: The mamaku, *Cyathea medullaris* (fronds 3m or more), followed by ponga, *Dicksonia fibrosa* (fronds to about 3m). Ponga is widespread in Southland and Stewart Island but mamaku is noticeable only in Fiordland.

Smallest fern: The small filmy fern, *Hymenophyllum minimum* (fronds 20mm)

Most widespread plant: Two weeds, cat's ear, *Hypochoeris radicata* and sheep's sorrel *Rumex acetosella* are abundant throughout New Zealand in a variety of habitats. The most widespread native plant is manuka, *Leptospermum scoparium*.

First introduced plant: The first introduced plants would have come in on the muddy boots and socks of the first explorers. These would have included docks, chickweed, grasses and sow thistle.

Rarest plant: *Gunnera hamiltonii* is a prostrate plant confined to a few sandy places on the south coast and at Mason Bay and Doughboy Bay.

Most economically valuable plant: Probably white clover, *Trifolium repens* and ryegrass, *Lolium perenne* (grazed as pasture plants), and radiata pine, *Pinus radiata*. Chewings fescue, *Festuca rubra* subsp. *commutata* is a grass first commercialised by George Chewings of Glenelg near Mossburn about 1888. It is a tough grass, ideally suited to the conditions of Northern Southland and hundreds of tons of seed were exported to Britain. It found particular use in grassing airstrips.

Tallest moss: *Dawsonia superba* (50cm) is found in Fiordland.

Largest liverwort: *Monoclea forsteri* (5 × 20 cm) grows throughout Southland on wet, shaded streambanks.

Most southerly plants: Bull kelp, *Durvillaea antarctica* grows on The Traps (Lat 47 32')

- Largest orchid:** The black orchid, *Gastrodia sesamoides* (60cm) is a root parasite locally common in pine and beech forests. Maori used to eat the tubers.
- Greatest plant pests:** There are four Southland species on the total control list. These are old man's beard or traveller's joy, *Clematis vitalba*, cord grass, *Spartina anglica*, boxthorn, *Lycium ferocissimum* and oxygen weed, *Lagarosiphon major*.
- Greatest aquatic pest:** The Japanese seaweed *Undaria*, which is in Bluff Harbour and Big Glory Bay, cord grass, *Spartina anglica*, which spreads on mudflats, and oxygen weed, *Lagarosiphon major*, a freshwater pest.
- Largest seaweed:** The bulkiest seaweed is the bull kelp, *Durvillaea antarctica*, which reaches 5m or more. The longest is bladder kelp, *Macrocystis pyrifera* (10 m+)
- Largest Fungi:** Horse mushrooms, fly agarics, *Amanita muscaria*, sticky bun, *Boletus luteus* and smoker's lungs *Lactarius turpis* can all reach 25cm or more across. The bracket fungus can reach 50cm or more. The giant puffball *Langermannia gigantea* can get to 40cm or more across.
- Most poisonous:** Several plants that are wild in Southland are poisonous. These include bittersweet, *Solanum dulcamara* (often wrongly called deadly nightshade), the fly agaric toadstool, *Amanita muscaria*, tutu, *Coriarea arborea* and tree nettle, *Urtica ferox*.
- Largest leaves:** Mamaku, *Cyathea medullaris*, soft tree fern, *Cyathea smithii* and flax, *Phormium tenax* all have leaves longer than 3m. Chilean rhubarb, *Gunnera tinctoria* has massive, prickly leaves. One example measured on Stewart Island in 1999 was 1.54m across.
- Vegetables, fruits and seeds:**
- Cabbage:** A specimen, 22kg and almost 1m across the heart was grown in Waikaia in 1970 by S.A. Mutch.
- Rhubarb:** A leaf of 142cm, including a stalk of 61cm with a 17.8 cm circumference, was grown by J.D. Robertson of Pukerau in January 1930.
- Pumpkin:** A pumpkin-growing contest judged by the Makarewa Country Club on 21 May 2000 produced a 66.6kg pumpkin grown by Bernie Pol and one with a 1.84 m girth grown by Murray Thomas.
- Potato:** A 25.4cm King Edward was grown by Mr J.Waters in Invercargill in February 1930.
- Swede:** Neville Bennett of Papatotara grew a 17.5kg (foliage removed) swede in 1999.
- First bananas:** Bananas were grown in the Winter Garden in Queens Park, and fruited in January 1960.
- Largest fruit grown in Southland:** Technically the pumpkin. The largest native fruit is the miro berry.
- Largest seeds:** The chestnut (conker). The native plant with the largest seed is the miro.

Any omissions, alterations or additions please contact:

Lloyd Esler
 15 Mahuri Rd Otagata RD9 Invercargill
 032130404
 esler@southnet.co.nz

NEWS

Botanical Artist Honoured

Congratulations to another distinguished BSO member, Audrey Eagle, who was made a well-deserved Companion of the New Zealand Order of Merit in the recent Queen's Birthday Honours list, for her services to botanical art.

Audrey has been producing colour paintings of New Zealand's native trees and shrubs for 49 years. Her first series of 228 botanical paintings were published as 'Eagle's Trees and Shrubs of New Zealand' in 1975. The second series, published in 1982, included 405 botanical paintings. The paintings are meticulous in their precise detail and accuracy, drawing on skills refined from her training and work as an electrical engineering artist. This careful attention to the reproduction of distinguishing detail, colour and life-size are key factors in making these books more useful than photographs for plant identification.

Illustrations of rare species and those of local distribution make the second series of particular significance to the professional botanist as well as the amateur. Noted botanist Tony Druce, of the Botany Division of the former DSIR, to whom this second series is dedicated, was a key figure in contributing to the taxonomic and distribution details.

Both books were awarded prizes (third in 1976 and second in 1983) in the then Watties Book of the Year Award. In 1986 'Eagle's Trees and Shrubs of New Zealand Volumes I and II', a revised edition of the 1975 and 1982 books, was published. It is one of the most-thumbed reference books in the University of Otago Botany Department library, and the most on demand on Botanical Society long summer trips.

Now Audrey is putting the finishing touches to the 160 new illustrations for what was to have been her third book. These illustrations are now going to be incorporated into two newly designed books, which will include up-dated versions of her two original books. The result will be illustrations of about 790 plants, with all species in a genus together.

Once the artwork and writing is finalised, financial assistance is needed to cover the cost of preparing 560 plates for publication. Hopefully having CNZM after her name will speed the progress of an eagerly awaited botanical companion.

The books are expected to be on sale in 2003.

Photo courtesy of the Otago Daily Times.

Audrey Eagle, CNZM



OBITUARY - John Douglas Campbell, Geologist and Paleobotanist

By Bill and Daphne Lee

John Douglas (Doug) Campbell unexpectedly passed away on 29th July 2001, aged 74, at his holiday home in Warrington. Doug was a major influence and an important person in the lives of many people in Dunedin: as a teacher, field companion, fellow explorer, colleague, academic mentor, conservationist, and very good friend. Doug graduated in both geology and botany, and it is his knowledge, appreciation, and enjoyment of plants and the environment that will be remembered by many Botanical Society Members.

The outdoors featured largely in Doug's life, perhaps derived from his youth in the countryside near Wanganui. This, coupled with his deep interest in the origin and history of the NZ environment, attracted him to geology. However, as a geologist, paleontologist and stratigrapher, Doug had a long-standing deep interest in living and fossil plants from all parts of New Zealand. The progress that has been made in plant macrofossil research over the last few decades has been in large part due to Doug's efforts, particularly through his supervision and encouragement of post-graduate students.

Doug was an insightful and meticulous observer, who made detailed observations and drawings of the plant leaves, seeds and fruit he collected. As well as clear, detailed comments on rocks and fossils, his field notebooks recorded the time spent at each outcrop, and the people who accompanied him in the field. On a trip to the Hokonuis in Southland, a few days before his death, Doug produced his field book from his first visit to this locality in 1952.

In the often fragmentary plant remains in the rocks (usually bits of stem or leaves or rarely fruits) Doug saw things most trained botanists would have missed, and he was involved in accumulating for the Geology Department at the University of Otago an outstanding collection of plant macrofossils from all over New Zealand. Discussions with Doug about the plants of the past were always enlightening. He would comment on the warmth-loving plants that occupied Otago and Southland, emphasize the links between these plants and the flora of New Caledonia today, and highlight the amazing similarities between some living and fossil fragments he had discovered. For many of us these talks were very formative in shaping our interests and views of New Zealand's changing flora and vegetation during Cenozoic times.

Doug was careful about naming fossil plants after modern species, and we all delighted in debating the topic. Recently Doug sent away the final manuscript on plant fossils from Landslip Hill near Gore to the Journal of the Royal Society of NZ. This represents the culmination of more than 20 years of careful collecting and research.

Plants, especially the native flora, were a great source of interest and enjoyment for Doug. He derived deep satisfaction from examining plants, growing them, harvesting them and just working amongst them. He was a great gardener, especially at

Warrington, where he enjoyed the challenge, and occasional frustration, of growing plants in a coastal environment with the salt spray and wind.

Doug was less concerned about the appearance of his garden. His interest was in the plants themselves. Each one had a story, either related to where he had collected them on geology trips all over New Zealand, or to a research question he had about the variation in leaf shape or size. He had speargrass, native brooms, shrubby *Coprosmas*, little *Gummeras*, and the occasional special *Celmisia*. He wanted to bring tui and bellbird around the house and was always on the lookout for good nectar-producing species.

His knowledge of the plants in the native section and surrounds of the Dunedin Botanic Gardens was unsurpassed. Derived from observations during daily walks over many years from his home in Opoho to the Geology Department, Doug knew the seasonal and annual patterns of flowering and fruiting, he pondered the original vs the planted species in the gardens, he saw the aggressive and passive species, and had numerous stories about the impacts of different gardeners on the Botanic Gardens. He greatly valued the Gardens and used them in his research on the identification of fossil leaves and fruits.

Restoration ecology is becoming increasingly important in New Zealand as we seek to support native plants and animals in previously totally modified environments in and near our cities. Doug's pioneering efforts at building his own wetland in a paddock at Warrington gave him immense pleasure. Modifying the local water table, controlling the weeds, planting native sedges, shrubs, and trees, were all undertaken with considerable thought, hard work, and a certain degree of stubbornness that often characterised his projects. He delighted to discuss what was happening in the wetland, and to share ideas on the most suitable species to plant. This was perhaps more challenging than expected because Doug would only plant natives that were naturally growing in the catchment as viewed from the site!

Although Doug had been formally retired from the University for more than a decade, he continued in active and productive research. As students and colleagues, many of us appreciated Doug's thoughtful advice as a mentor, his sharing of experience and geological insights, his and Ann's generous hospitality, and his enthusiasm for understanding the geological history of our land. We remember him with great affection and gratitude.

A few of Doug's paleobotanical contributions are listed below. A planned memorial volume of the Journal of the Royal Society of New Zealand will include several of Doug's manuscripts, and contributions from other colleagues on brachiopods, Triassic/Jurassic stratigraphy, and fossil plants.

Campbell, J. D. 1985. Casuarinaceae, Fagaceae, and other plant megafossils from Kaikorai Leaf Beds (Miocene), Kaikorai Valley, New Zealand. *New Zealand Journal of Botany* 23: 311-320.

Campbell, J.D. in press: Angiosperm fruit and leaf fossils from Miocene silcrete, Landslip Hill, Southland, New Zealand. *Journal of the Royal Society of New Zealand*

Campbell, J. D., Fordyce, R. E., Grebneff, A., and Maxwell, P. A. 1991. Coconuts, coconuts, coconuts. *Geological Society of New Zealand newsletter* 92: 437-438.

Campbell, J. D., Fordyce, R. E., Grebneff, A., and Maxwell, P. A. 2000. Fossil coconuts from mid-Cenozoic shallow marine sediments in southern New Zealand. *Geological Society of New Zealand Annual Conference 2000, programme and abstracts*. Geological Society of New Zealand miscellaneous publication 108A: 21.

Campbell, J. D. and Holden, A. M. 1984. Miocene Casuarinacean fossils from Southland and Central Otago, New Zealand. *New Zealand Journal of Botany* (22): 159-167.

Campbell, J. D., Lee, D. E., and Lee, W. G. 2000. A woody shrub from the Miocene Nevis Oil Shale, Otago, New Zealand - a possible fossil divaricate? *Journal of the Royal Society of New Zealand* 30 (2): 147-153.

Kovar, J. B., Campbell, J. D., and Hill, R. S. 1987. *Nothofagus nimmisiana* (Unger) Oliver from Waikato Coal measures (Eocene-Oligocene) at Drury, Auckland, New Zealand. *New Zealand Journal of Botany* 25: 79-85.

Pole, M. S., Campbell, J. D., and Holden, A. M. 1989. Fossil legumes from the Manuherikia Group (Miocene), Central Otago, New Zealand. *Journal of the Royal Society of New Zealand* 19 (3): 225-228.

BOTANICAL DIARY.

Australasian Bryological Workshop, 20 –26 Sept, 2001. Blue Mountain, NSW. The sixth of a series of informal workshops, with the aim of providing a forum for bryologists to get together for an interchange of ideas, to compare and contrast the bryoflora of different areas of Australia and to develop skills in recognising taxa in the field. Elizabeth Brown, email: [rbgsyd.nsw.gov.au](mailto:rbgzyd.nsw.gov.au)

NZ Moss Foray, 22 – 27 Nov, 2001. The 17th John Child Bryophyte Workshop will be held at the **Tauherenikau** Race Track, near Featherston, an hour north of Wellington. More details on Botany Dept noticeboard or contact Barbara Polly, email: barbarap@tepapa.govt.nz, Post: Te Papa, PO Box 467, WELLINGTON

Seed Symposium, 29 Nov, 2001: New Zealand Seeds – their morphology, ecology and use as indicators. This symposium, organised by Landcare Research and the New Zealand Botanical Society, will be held at **Lincoln University** on Thurs 29th Nov. It will mark the launch of “**Seeds of New Zealand – Gymnosperms and Dicotyledons**” by Colin Webb and Margaret Simpson. There will be other associated events around the day. **Contact:** A McGlinchy, Landcare Research, Box 69, Lincoln. Email: mcglinchy@landcare.cri.nz

Botanical Society Summer Field Trip, 27 Dec – 5 Jan, Twizel area. Keep these dates free. Otago members are welcome to join the Wellington Botanical Society on their summer field trip. Based at Twizel and L Ohau, which should provide good access to alpine plants at surrounding ski fields and alpine areas, with some interesting valleys to explore at the heads of the lake. Registration forms from Julia White, Wellington Botanical Society, Box 10-412, Wellington, email: alanwhite@the.net.nz

Canterbury Bot Soc Summer camp, 6-13 Jan 2002. **Northwest Nelson**. Based at Victoria University Geology Field Station, Onekaka, Golden Bay. Secretary: Roger Keey, (03) 364 2409, email: wtrc@cape.canterbury.ac.nz

More Dates for your Diary, BSO events in boxes – details front page

8 Sept, Sat, 10 am. DNFC field trip. **Toko Mouth**, Wangaloa, Lake Tuakitoto, Kai Point - Francie Beggs, bus \$15.

12 Sept, Wed, 12.00. Combined BSO/Botany Dept seminar. **Emeritus Prof Alan Mark**, Botany Department, OU. **Tibet, Mongolia and the Russian Caucasus Mountains : seven weeks with local ecologists**

13 Sept, Thurs pm. OI/Fiends of Otago Museum dinner \$37.50. **Jean Fleming** "This Jean was modified by the royal Commission." Museum Atrium.

15 Sept, Sat, Friends of the Botanic Garden **Herbaceous Plant Sale**

18 Sept, Tues, 7.45 pm. F&B. **Emeritus Prof Alan Mark**, Botany Department, OU. **Tibet, Mongolia and the Russian Caucasus Mountains: seven weeks with local ecologists**

19 Sept, Wed, 12. 00. Botany Dept, O.U. **Hons/Dip Sci Presentations:** Lisa Harvey, **A unique type of powdery mildew resistance in the sweet pea *Lathyrus***; Garreth Kyle, **Potential natural vegetation on the Otago Peninsula**; Tara Murray, **Plant-weevil interactions**.

19 Sept, Wed, 7.30 pm. Friends of the Botanic Garden. **Doug Thompson**, Collection Curator, **DBG Rhododendrons**

22 Sept, Sat, 10 am. DNFC field trip. **Bethunes Gully**, Ken & Val Allen.

22 Sept, Sat, 12.00. F&B field trip. **Intertidal Warrington**, leader **John Jillett**.

26 Sept, Wed, 12. 00. Botany Dept, O.U. seminar. **PhD Proposals:** Louise Kregting, **Do seaweeds get enough, or are they mass transfer limited?**; Katja Schweikert, **Desiccation of *Porphyra* sp.: a cellular study**.

26 Sept, Wed, 7 pm. BSO meeting. **Barbara Anderson** talks on **Patagonia** Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.

1 Oct, Mon, 7.30 pm. DNFC Meeting. **Peter Schweigman**, Ornithological Soc. **Royal Spoonbills in New Zealand**.

3 Oct, Wed, 12.00. Botany Dept, O.U. seminar. **PhD Proposals:** Chris Stowe, **Population genetics of karaka (*Corynocarpus laevigatus*)**; Scott Bagley, **Population genetics of the introduced ectomycorrhizal mushroom, *Amanita muscaria***

6 Oct, Sat, 10 am. DNFC field trip: **Graeme Weir**, - **Sandymount/Sandfly Bay**, Bus \$10

- 10 Oct, Wed, 12.00.** Botany Dept, O.U. seminar. **Denise Paine**, Botany Department, University of Otago, **Factors influencing shoot production in lettuces, *Lactuca sativa*, in culture**
- 13 Oct, Sat, 8.25 am.** F&B field trip. Telford Farm Institute, Awakiki and Otanemomo Forest Reserves, contact **John Dawson**.
- 16 Oct, Tues, 7.45 pm.** F&B meeting. **Kelvin Lloyd and Peter Johnson: Conservation and Ecology in the Chatham Islands.**
- 17 Oct, Wed, 12.00.** Botany Dept, O.U. seminar. **Dr Rochelle Christian**, Plant and Microbial Sciences, University of Canterbury **Salinity-induced photo inhibition and the regeneration niche of two sympatric mangrove species**
- 17 Oct, Wed, 12 noon.** Otago Institute Lecture. **Prof. Gerald Tannock** "Living with the gut microflora" Hutton Theatre, Otago Museum.
- 20 Oct, Sat, 1.30 pm.** BSO Tour of Emeritus Prof. Geoff Baylis' Garden 'Threave', 367 High St.
- 24 Oct, Wed, 7 pm.** **Sue Bennett** talks on **Botanical Conservation Volunteer Work on Raoul Island**. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.
- 27 Oct, Sat, 10 am.** DNFC field trip: **Ruth Ahearn/Joyce Robinson**, leaders; **Waikouaiti/Matanaka**, Bus \$15
- 3 Nov, Sat, 10 am.** DNFC trip. **Cliff Donaldson's trees / Moores Bush – Ken & Val Allen**. Car pool \$3.
- 5 Nov, Wed, DNFC. Members night.**
- 15 Nov, Thurs, 7 pm.** **Dr Jill Rapson**, Massey University, talks on **Barrier Islands and Coromandel almost-island**. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.
- 17 Nov, Sat, 8.30 am.** DNFC trip. **Gabriels Gully – Joy McCullough**. Bus \$15
- 18 Nov, Sun, 9 am.** **Anni Watkins** will lead a full day workshop on grasses. Meet in the Botany Dept carpark, 464 Gt King St.
- 20 Nov, Tues, 7.45 pm.** F&B meeting. **Anna Carr & James Higham: Ecotoursim in New Zealand: Challenges and Prospects.**
- 21 Nov, Wed, 7.30 pm.** Friends of the Botanic Garden: **Steve Newell**, seed collector: **Travel with a difference.**
- 24 Nov, Sat.** F&B field trip. See "Star" Community Noticeboard
- 27 Nov, Tues, 7. pm.** Otago Institute AGM. Assoc. Prof. **John Tagg: 25 years of sheer BLIS: Adapting germ warfare to the prevention of bacterial infection.**
- 1 Dec, Sat, 10 am.** DNFC trip. **Racemans Track – George Goodyear**. Car pool \$5.

2 Dec, Sun, 7.30 am F&B field trip. **Rock & Pillar: cushion bog and alpine plants.** Shared 4WD. Essential to contact Janet Ledingham, 467 2960

15-16 Dec, Sat, 9.45 am at Middlemarch. DNFC trip. **Rock & Pillar Range – Beth Bain.** Accommodation & 4WD approx \$55.

University of Otago Botany Dept Seminars are on Wednesdays at 12 noon, upstairs in the *Union St Lecture Theatre (formerly Botany School Annexe), in the red-brown bldg, Cnr Union St West & Great King St.*

Dunedin Naturalists' Field Club (DNFC) Meetings are on the first Monday of the month, in the Red Lecture Theatre, Scott Building, Medical School, Great King St. Their field trips leave from the Citibus Depot, Princes St. Visitors are welcome. Contact: Beth Blain, President, 455 0189, email: bethbain@ihug.co.nz

Dunedin Forest and Bird (F&B) meetings are on Tuesday, at 7.45 pm in the Hutton Theatre, Otago Museum. Field trips leave from Otago Museum Gt King St entrance, 9am, Saturday. Secretary: Paul Star 478 0315

Friends of the Botanic Garden meet on the third Wednesday of the month at 7.30 pm in the Education Centre, Lovelock Ave. Secretary: Mrs Betty Wolf, 488 1550

Otago Institute (OI) contact: Michelle McConnell, secretary, phone 479 5729
email: michelle.mccconnell@stonelaw.otago.ac.nz
New web page: <http://otagoinstitute.otago.ac.nz/>

Times and other details may change. Check with the group involved first to be certain.

Botanical Society of Otago: whom to contact

Submissions for the diary and new members, subscriptions or donations to:

Trish Fleming

%, Botany Dept., University of Otago, P. O. Box. 56, Dunedin

Phone (03) 479 7579

email trish@planta.otago.ac.nz

Submissions for the newsletter email Allison Knight: botsocotago@botany.otago.ac.nz

Ideas for activities to:

Bastow Wilson,

%, Botany Dept., University of Otago, P. O. Box. 56, Dunedin

e-mail bastow@otago.ac.nz

Phone (03) 479 7572 work, 473 9300 home.

For information on activities:

the trip leader

or Trish (contact above),

or Bastow,

or see our webpage: <http://www.botany.otago.ac.nz/bsoc>

This Newsletter was published on the 6th September 2001. ISSN 0113-0854

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