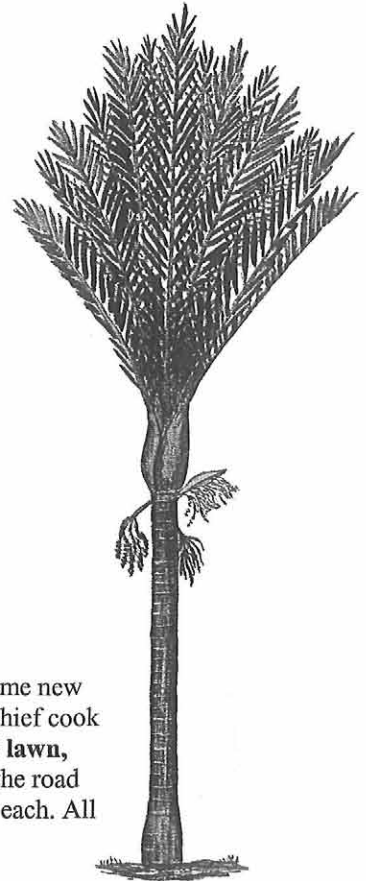


# Botanical Society of Otago Newsletter

Number 41

March -May 2004



## BSO Meetings and Field Trips

**5 March, Friday, 12 noon.** A BSO/Botany **BBQ** to welcome new botany/ecology students and new BSO members. Chief cook will be head of department, Paul Guy. On the **front lawn, Botany House Annexe**, Great King Street (across the road from the Caltex). Sausage sandwiches and juice \$1 each. All BSO members and intending members welcome!

**8 March, Monday, 5.20 pm.** *The All Taxa Biodiversity Inventory being carried out in the Great Smoky Mountains National Park* A talk by **Steve Stephenson**, Research Professor in the Department of Biological Sciences at the University of Arkansas. Steve has recently completed a volume in the *Fungi of New Zealand* series on plasmodial slime moulds (myxomycetes). He has been surveying mycetozoans (protostelids and dictyostelids as well as myxomycetes) as one component of an all taxa biodiversity inventory (ATBI) of the Great Smoky Mountains National Park. The ATBI of the Great Smoky Mountain National Park in the US has resulted in the discovery of 136 species new to science, in the Park, and an additional 1,436 that are known species, but which have not been previously identified as occurring in the area. In addition there is much new information on the geographic distribution of thousands of species, important for maps of species distribution. The inventory, coordinated by a support group called Discover Life in America, is conducted by scientists, student volunteers and others from all over the United States.

**13 March, Sat. 8.15 am start** Full-day field trip to the top of the **Blue Mountains** with **Prof. Alan Mark**. The Blue Mountains, although strongly modified on its lower slopes by exotic forestry, has good road access on to the summit ridge and even to its highest point at 998m, for **reasonably powerful vehicles**, giving easy access to a range of vegetation types, notably cushion bogs and mixed narrow-leaved snow tussock-shrubland, plus remains of a *Halocarpus* (bog pine) woodland exposed in eroding peat beds, all quite reminiscent of Maungatua. Its flora is also very similar but there are a few extras on the 'Bluies', notably *Astelia linearis*. Subalpine silver beech forest and its natural treeline at 950m are also readily accessible. Prof. Mark suggested this trip as an alternative to Maungatua, given its easier (and more reliable) access. It has been much less studied than Maungatua but was included by Stephan Halloy in his comparative study of alpine plant morphology (*J. Veg. Sci.* 1: 291-304. 1990; *J. Roy. Soc. NZ* 26: 41-78: 1996). Prof Mark would like help to put together a full **species list**. Warm clothing and footwear for wet, windy conditions are advisable whatever the weather forecast.

**3 April, Sat. 9 am.** Full day or weekend field trip to the **Rock and Pillar Range** with alpine research botanists and ecologists. For the fit there is the option of a 3-4 hr walk up through changing vegetation zones from lowland pasture/tussock/ scrub, through subalpine tussock with regenerating *Hebe* right up to *Celmisia*-dominated alpine herb fields and lichen-rich cushion fields. On-going botanical and ecological research has been based in this area for over 50 years, often using the Otago Tramping and Mountaineering Club hut, 'Leaning Lodge' as a base and refuge. See <http://www.botany.otago.ac.nz/alpine/>. There's an opportunity for those keen to extend their appreciation of the alpine flora to stay overnight, in this classic old ex-ski hut, which has been marked for destruction by DoC. Warm clothing and footwear for wet, windy conditions are advisable whatever the weather forecast. High wheel base 4WD advisable for those not walking. Some seats may be available. Contact Robyn Bridges, 479 8244 (day) if you wish to stay overnight (numbers limited). Other queries: Allison Knight 487 8265

**21 April, Wed. 5.20 pm** Annual General Meeting. Guest speaker Associate Professor **Helen Leach**, an Anthropologist with a special interest in Paleoethnobotany. "**Gardens without Weeds?**" When Dr Monkhouse described Maori gardens seen in 1769 as "completely cleared of all weeds", did he mean that the gardeners were fastidious weeders, or were there just fewer weeds to eradicate? Did the Maori and other Polynesian peoples have a concept of weeds equivalent to that in European languages? This talk will look at indigenous plants that might have invaded Maori gardens, the inadvertent introduction of a small number of fellow-travellers with Maori cultigens, and how different groups of Polynesians might have classified the plants that we call 'weeds'.

**1 May, Sat, 8 am.** Trip to **Waipori Forest** to collect **fungi** with **David Orlovich**.

(Note: collecting fungi is subject to approval by DoC). Of interest is a new fungus that has only been collected once in the Waipori area. Further collections will make the description of a new species possible. Bring hand lens, small basket or bag for collecting fungi, greaseproof paper (for wrapping specimens in the field). Leave 8 AM and return to the Department of Botany around lunch time. Afternoon in the laboratory examining specimens and recording details for herbarium collections.

**12 May, Wed. 5.20 pm.** Don't miss this fascinating glimpse into the past. *A walk in the (paleo) woods: leaves, bark, ferns and epiphyllous fungi in the 40 million year old Pikopiko fossil forest.* Presented by paleobotanists Daphne Lee, Ellen Cierad and award-winning Jennifer Bannister (see News, p 22). Fossil forests are rare in New Zealand. The best known South Island example is the Jurassic forest at Curio Bay. This talk will describe the Pikopiko fossil forest, which has trees still spaced in life position exposed on the east bank of the Waiau River, near Tuatapere, Southland.

**12 June Sat 9.30 am – 4.30 pm.** Morning Field Trip to **Moore's Bush**, followed by afternoon **cryptogam identification workshop**. Moore's Bush, in the upper Leith Valley, is the site of an on-going Forest and Bird restoration project, returning what was once dairy pasture to native forest. Their main emphasis now is in creating a mammal-free 'mini-mainland island' to aid the regeneration of podocarps. Miro, matai, totara, kahikatea and mountain cedar are all present, with some magnificent specimens towering above the vigorously regenerating understorey. Our main aim will be to help update the lichen, bryophyte and fern lists. Cryptogam (non-flowering plants) specimens needing identification will be brought back to the laboratory for the afternoon workshop in the Botany Dept. Lichen leaders Allison Knight and Jennifer Bannister, mosses – Maia Mistral. Bring hand lens and lunch.

**Meeting details:** Talks are on Wednesday evening, starting at 5.20 pm with drinks and nibbles (gold coin donation), unless otherwise advertised. **NB the March 8 talk is on Monday.** 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, 2nd floor. Please be prompt as we have to hold the door open. *Everyone is encouraged to bring items of botanical interest for our buy, sell and share table.*

**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). 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, outdoor gear and personal medication to cope with changeable weather conditions. See trip guidelines, page 24.

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## President's notes

*David Orlovich*

The new year brought the sad news of the death of Prof. Geoff Baylis. Having just drafted a paper on mycorrhizas in New Zealand, I have been reading a lot of Prof. Baylis' publications and those of his former students. It is quite amazing that one person could have such a strong and positive influence over so much of New Zealand's plant and fungal biology.

I want to especially welcome our new Treasurer Lyn Bentley who stepped in to take over from Frances Anderson late last year. Frances did a fantastic job as Treasurer and we all thank her very much for all the effort she put in to looking after the finances of the Society. At the AGM this year we will once again vote for members of the committee, so if you're interested in standing for a committee position then make sure you're there. If you'd like to talk to any of the committee about the roles and responsibilities, then feel free to email them. Contact details are on the BSO web site at <http://www.botany.otago.ac.nz/bso/>, and on p 27 of this newsletter.

Events are coming thick and fast - we've already had three events this year and the next one is very soon - Friday 5th March. It's a BBQ to welcome new members to the Society. If you would like to come along and chat to students who may be interested in botany, then you're most welcome. Prof. Steve Stephenson arrives in early March and he is giving a talk about a biodiversity inventory project he is involved with in the USA. The field trip to the Blue Mountains with Alan Mark on March 13 promises to be a real treat as Alan's knowledge of the area is immense and his willingness to share it is just as great. At the AGM on April 21 is another excellent speaker Helen Leach, who will give us an insight into Maori gardening. Finally, remember that the closing date for the Audrey Eagle Prize for Botanical Drawing is fast approaching (8 March) so get drawing! Everyone has hidden talent and this is a great opportunity to showcase your drawing skills.

See this newsletter or the BSO web site for more information about any BSO events.

## Editor's notes

*Allison Knight*

There's a tinge of sadness in this newsletter, with the news that Geoff Baylis, whose contributions to botany we honour in our annual Baylis lecture, passed away at the end of last year. But Geoff has left us so much to celebrate and pay tribute to that Alan Mark is organising a day-long Baylis Gathering on 27 March. This year is also the 80<sup>th</sup> anniversary of the Botany Department at Otago University so it is doubly appropriate to feature another of Mary Anne Miller's carefully researched historical articles. Time is running out for entries for the first Audrey Eagle prize for Botanical Drawing. They need to be submitted by 8 March, and Audrey will announce the prizewinner at the AGM in April.

This is everyone's newsletter and the more people contribute the better it is. So if you have come across an interesting book, website, plant or article do send in a quick

note. Likewise if a trip or meeting or even your own research looks exciting, offers of short reports, photos and illustrations are always appreciated. My apologies for missing reviews from last year. John Barkla gave a superb talk with magnificent slides of the Landsborough, Monica Peters presented a stunning perspective on Mongolia, and Fayla Schwartz took us on a visual tour of the flora of Washington State. The reviewers I coerced to write reports must have been blown away by it all, because I haven't seen them since! This year I'd be delighted if more people would volunteer to write a few lines about our varied monthly talks to share with the rest of our members. Maybe I'll even offer a glass of wine to help lubricate your pen. Members can also liven up meetings by bringing unusual plants, flowers, seeds and photos to share. The more this happens the more vibrant our newsletter and our society will be.

*Please submit copy for next newsletter by 14 May 2004*

**Editorial Policy** The Botanical Society of Otago Newsletter aims to publish a broad range of items that will be of interest to the wider botanical community and accessible to both amateur and professional botanists. Contributions of letters, comments, trip and meeting reports, articles, plant lists, book and website reviews, news items, photographs, artwork and other images and items of botanical interest are always welcome and will be published at the editor's discretion. Articles of a scientific nature may be referred, at the editor's discretion, to a scientific editor appointed by the committee. The scientific editor may refer the material to anonymous referees. Refereed papers will be identified as such in the newsletter. *BSO will not accept papers proposing nomenclatural novelties or new combinations.*

**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.*

## Cover pictures

**Front cover**, Flowering Nikau palm, *Rhopalostylis sapida* with details of female flowers, (details of male flowers on membership form). From drawings by Audrey Eagle in *Eagle's Trees and Shrubs of New Zealand*, 1975.

**Back cover**, Kahikatea cooling their feet in Lake Brunner at the start of the new Mt Te Kinga track.  
- Photo *Moirra Parker*

## Requests

***Polystichum silvaticum* from the lower South Island.**

*Leon Perrie*

Leon told me last month that he would still be interested to see specimens of *Polystichum silvaticum* from the lower South Island so I am reprinting excerpts from his excellent article on *Polystichum* in the last issue, plus his kind offer of a reference set for OTA. - ed



I have never seen *P. silvaticum* in the South Island, but there are scattered collections of it. On behalf of WELT, I would greatly appreciate receiving (lower) South Island specimens of *P. silvaticum*.

I've put together from my collection of living plants a reference specimen set for OTA of *P. silvaticum*, *P. wawranum*, *P. oculatum*, and *P. neozelandicum* subsp. *neozelandicum*..... I would be more than happy to assist/confirm identifications of *Polystichum*, and can be contacted by mail (Leon Perrie, Te Papa, P.O. Box 467, Wellington), phone (04 381 7261), or email: [leonp@tepapa.govt.nz](mailto:leonp@tepapa.govt.nz)

### Sightings of native pigeons.

Lisa Daglish

This is just a brief article to let you know about a project being started up in the urban Dunedin (and surrounding) area. As part of my Masters research I hope to capture and tag up to 20 Kereru (Kukupa/native pigeon). The birds will have radio-transmitters and coloured leg jesses attached before being released and followed. I hope to determine the importance of different seasonal food resources, and the area over which the birds are moving.

While I intend to follow the birds closely, I won't be able to keep a constant track of them all. For this reason, I've attached a survey sheet to this article, in the hope that you may have time to record observations of any Kereru in your own area. I'm interested in the location of all Kereru, if they have leg tags (and if so the colour of these), what the birds are doing (eg feeding, flying, roosting) and what vegetation they are using (if known). I'm also interested in the flock sizes of birds seen. Any information at all will help me gain a better understanding of how far Kereru are moving and of the importance of different areas and food-types to the Dunedin Kereru population.

I'll be starting to tag birds from mid-December and hope to capture them in central, urban areas. If you or anyone you know has regular Kereru visitors to their garden and wouldn't mind them being part of the study please contact me as I am still looking for more capture sites. In addition, if you would like additional survey forms or have specific questions I can be contacted at the e-mail and postal addresses below.

Thank you all for your time

E-mail: [dagli950@student.otago.ac.nz](mailto:dagli950@student.otago.ac.nz)

C/- Zoology Department,  
University of Otago,  
PO Box 56,  
Dunedin

#### Native Pigeon Survey Sheet data needed:

Date	Location	Tag Marked (Y/N/Colour)	Activity (eg feeding)	Vegetation (if known)
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## Articles

### **An early history of the Department of Botany, University of Otago, 1924-1945**

Mary Anne Miller

The Department had its origins with the appointment of a full-time lecturer in botany in 1924. However, botany had been taught at the University of Otago since 1877 when F. W. Hutton (1836-1905) was appointed Professor of Natural Science. By 1880 Hutton was ready to put his battles with university hierarchy behind him, leaving the newly named Chair of Biology to Thomas J. Parker (1850-1897). Much influenced by T. H. Huxley he, like Hutton, favoured Darwin's evolutionary theories, which made for turbulent early years at Otago. He was described as a first-rate teacher and researcher and when he died prematurely two of his students were able to take over the teaching of zoology (William Mawson) and botany (John Smaillie Tennant) before another world renowned scientist and lecturer, William B. Benham (1860-1950), arrived in 1898 to fill the Chair.

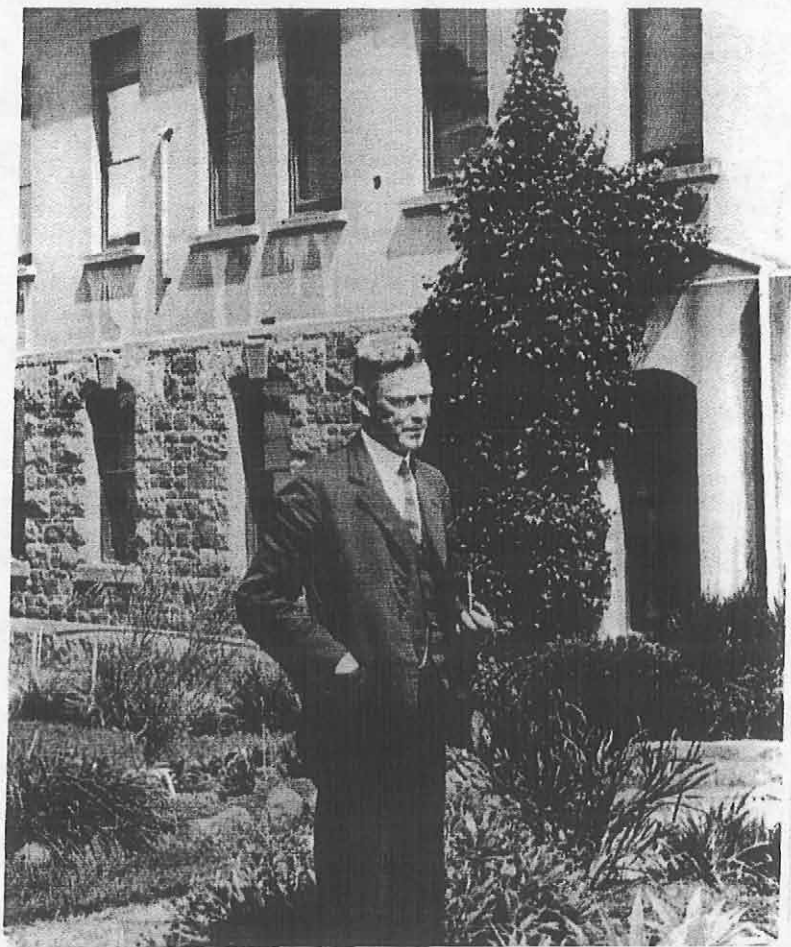
As biology student numbers increased, due to a demand for medical officers in World War I and then demobilization, so did Benham's requests for more assistance and better facilities. Assistance came with the appointment in 1919 of Mary Winifred (Winnie) Betts, a brilliant biology student (her MSc thesis *The Autoecology of certain plants of the Peridotite Belt, Nelson* had been presented in three parts to the Otago Institute beginning 1917). By 1920 the biology extension to the Museum building was complete and it included a laboratory for the 10 enrolled botany students.

Winnie was employed to teach first year science, medical, dental and home science students taxonomic botany as well as nurturing a small degree group, including the first two botany Honours students, Elma M. McCarthy and Earl F. Northcroft. She was one of a few woman teachers at Otago Boys High School (there was a shortage of masters due to the War) before being employed by the University. She left at the end of 1923 to follow her husband, A. C. Aitken, the mathematician, to Edinburgh. Her interest in botany continued in Scotland where she tutored and created a New Zealand garden in which the family entertained local students and visiting Kiwis.

With the appointment in 1924 of the Reverend Dr John Ernest Holloway (1881-1945), the fledgling Department had a great start, as Holloway was both a highly regarded researcher and dedicated teacher. However, conditions for Holloway were far from ideal, even described as bad<sup>1</sup>. He was given one room in the basement of Otago Museum and that was to serve as lecture theatre, laboratory and office for many years to come. Other resources were just as scarce. He was the sole member of staff so all duties fell to him – collecting, preparing and displaying class materials (considered "lab boy" duties in other establishments), administration, teaching at all levels and research support.



Equipment, apart from microscopes, was almost non-existent. Geoff Baylis records<sup>2</sup> the delightful story of Holloway making do with microscope lamps made from cocoa tins because, although an equipment fund was available (at £50 per year), he saw no point in using it all if working space and lack of assistance were limiting factors. A modest protest from a modest man. These lamps were still in use in the 1960's! He did, however, inherit beautifully painted cotton-backed teaching charts made in Germany about 1910 from the biology resources, and equally impressive papier mâché, plaster, wood and wax articulated models made in the 1860s-1880s. Holloway's lantern slide collection and dried materials are still in the Department, so we have a fair idea of how undergraduate teaching was illustrated in those early days. There was also one glasshouse and a small garden with urinal. One assumes the ladies needs were accommodated in the Museum facilities.



Rev Holloway in his newly established native garden behind the Otago Museum, c.1931

Holloway brought with him a fine collection of plant fossils that had its origins in the coal measures of South Yorkshire. Being curate at Barnsley from 1909 to 1911 he was able to exploit the locality to further his interest in primitive lycopods and ferns. The collection was subsequently augmented with New Zealand and other overseas samples. Holloway's spare time and holidays included plant collecting excursions, with some specimens for the herbarium, others live for the department garden. With a special bag, which is still in the Holloway family, hung over his shoulder he set out to enhance a collection that included samples obtained from many overseas contacts, including the famed gymnosperm expert, Professor C. J. Chamberlain from the University of Chicago. Included in the bag were his tobacco pouch and a tie. The tie, so he could hurriedly make himself presentable should he encounter anyone in remote locations.

Undergraduate classes were small so few took their studies to higher levels, but those that did made significant contributions to science, with seven of Holloway's Honours students becoming professional botanists. Of the 10 students enrolled in 1924 three were Dunedin Botanic Garden's trainees including Joan Hogg, the first woman gardener employed there. Also, an extra nine students received a short series of lectures as part of Home Science and Agriculture courses. Non-university bodies were also to benefit from his lectures. He gave the Cawthron Lecture in 1936 and entertained local groups with illustrated talks on botanical topics.

Needless to say Holloway's own research at this time was limited but he did manage to publish nine papers in the later years as Lecturer-in-Charge, as the Head of Department was then called, to which he was promoted in 1937. His interest in evolutionary processes and knowledge of New Zealand primitive plants greatly influenced the emerging talent. Ella O. Campbell (1910-2003) and Betty Molesworth Allen<sup>3</sup> (1913-2002) would gain international recognition for their work on liverworts and ferns respectively. Betty Molesworth spent time with Holloway while on leave from her job at the Auckland Museum. In 1938 the University finally recognized Holloway's contribution to science and teaching when Ella became the much-awaited Assistant Lecturer, allowing him further time for research and some travel. Probably the most notable student of this era was Holloway's son John T. Holloway (1914 -1977) who became New Zealand's foremost forest ecologist.

As World War II progressed Holloway's health declined and he retired at the end of 1944. He is remembered with much affection not only for his dedication to botany but for his devotion to the student's spiritual needs as well.

The year 1945 was one of change for the Botany Department and if not for the persistence of three recent women graduates the Department may have folded. Ella had also left at the end of 1944 to teach plant morphology and anatomy at Massey Agricultural College, becoming their first woman lecturer. She was replaced by Brenda F. Slade (later Shore, 1922-1993) who had only graduated that year. With the help of Betty Batham (1917-1974) and Margaret Finlayson, both of whom happened to be researching on campus and unable to further their studies overseas due to wartime restrictions, the Department continued to function until Geoffrey T. S. Baylis (1913-2003) arrived in August to replace Holloway. He came straight from his World War II

Royal Navy exploits and made a dashing figure in his uniform. In 1944 the Faculty of Science and Arts separated and once again an increase in student numbers resulted from a wartime demand for scientists. When hostilities ended numbers taking botany soared to 51, initiating a new era in teaching botany at Otago. A new glasshouse went up plus there was a purpose built laboratory for senior students.

My thanks to Ann Wylie for comments and clarifications.

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**(The above article was written for the 80<sup>th</sup> anniversary of the Department of Botany, University of Otago. If you are a current or former student or staff member of the Department and would like to be part of the anniversary celebrations later in the year, watch this space. There are also two displays, *Botany with the Revd Holloway 1924* and *Geoff Baylis – a biography*, in the foyer of the Department that everyone is welcome to view. )**

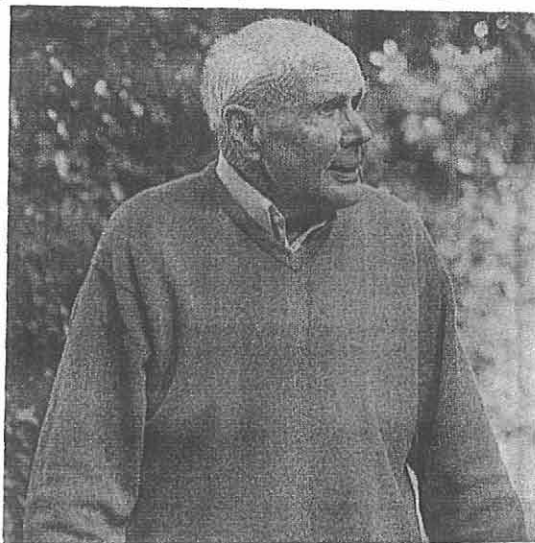


Photo *Otago Daily Times*: Geoff Baylis in his garden, 2002

The previous issue of this newsletter was published as a birthday tribute to Geoff Baylis, our first New Zealand born Professor of Botany, who turned 90 on the day of publication.

Sadly, he died before the year was out. Others will acknowledge and acclaim Geoff's early days, when he turned what he said was his 'great advantage in being poor' into determination to win scholarships, when he reluctantly distinguished himself as a submarine-sinking war hero, when he headed with distinction the Botany Department at the University of Otago for over 30 years, and did ground-breaking research on arbuscular mycorrhizal fungi.

My association with Geoff is all too recent, beginning when I joined the newly re-started Botanical Society of Otago (BSO) in 1999. By then he was a little old man with twinkling eyes who would walk down to meetings, with David Galloway if he was in town, and sit near the front, following proceedings with interest. His comments were always pertinent, constructive and informative. Often he would follow these up with a related note for the newsletter, which I appreciated even more when I became editor.

So when Bastow Wilson suggested that BSO institute an annual lecture named in honour of Professor Baylis, while he was still here to appreciate the honour, I was enthusiastic about the idea. Thus it fell upon me the task of approaching Geoff to seek his permission, and then to interview him for the newsletter, if he agreed. The task was not made easier by my then hearing that Geoff had advanced lung cancer, and I approached him with some trepidation. But Geoff received me courteously, like the gentleman he was. At first he was humbled by our proposition, but as he showed me round the wonderful garden he had created, primarily as a source of fresh material for the Botany Dept, he warmed to the idea.

Later, as plans for the inaugural Geoff Baylis Lecture progressed Geoff's delight at the thought of so many of his widespread botanical 'family' gathering together made it a pleasure to organise such a special occasion. Others thought it special, too – the Marjorie Barclay theatre in the Otago Museum was full to overflowing and the proceedings were recorded on video.

Besides the annual Geoff Baylis lecture Geoff's legacy lives on in many ways. Botanists up and down the country, and further afield, treasure in their gardens the rare plants that Geoff discovered on the Three Kings Islands and brought back for propagation. My own treasure, from a cutting Geoff gave me, is a perennial *Helichrysum* with vibrant yellow everlasting flowers, now flourishing in my garden. I would be happy to pass cuttings on.

Geoff would be pleased to see that the interest in mycorrhizal fungi, which he pioneered, is alive and well at Otago, with a visiting William Evans Fellow speaking this month. He would be even more pleased if his tip about growing the indigenous tree he considered had among the most beautiful flowers in New Zealand, *Ixerba brexiodes*, alongside mycorrhizal-rich *Griselinia littoralis*, was taken up more widely. (See Newsletters 33, 2002, and 40, 2003). That would be a most fitting tribute to a most exceptional botanist.

## Meeting reports

### *Mycorrhizal fungi - ubiquitous underground partners of plants.* 11 Feb

Reviewed by *Nina Hesom-Williams*

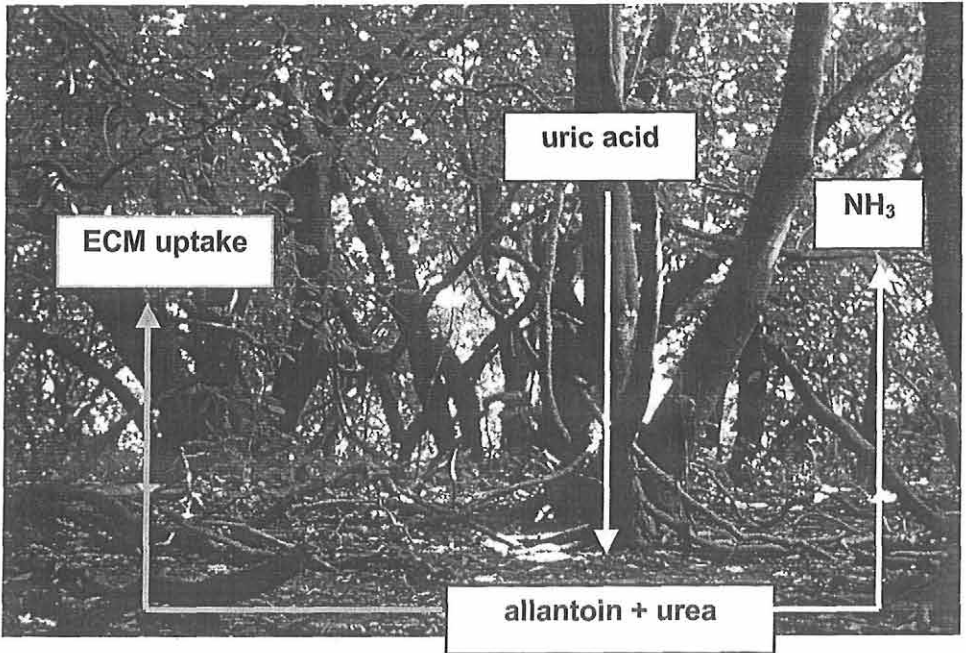
This year's first BSO talk, given by William Evans Visiting Fellow Prof. John Cairney, proved to be a great success, both educating and entertaining the large audience.

Prof. Cairney, from the University of Western Sydney, spoke about the ubiquitous nature of mycorrhizal fungi, even on coral islands (see fig below), and in particular described the work he carries out on ericoid ectomycorrhizae.

Of particular interest was work focused on *Amanita muscaria* genotypes in New South Wales pine plantations, which showed that individual fungi may live much longer than expected, and may also be much larger than originally thought.

Prof Cairney also pointed out that fundamental problems still exist when researching mycorrhizal fungi, leaving many important questions still to be answered.

This talk certainly set a high standard for future talks and judging by the large audience turnout it is obvious that BSO members are still fascinated by mycorrhizal fungi and are always keen to learn more.



The nitrogen cycle as it is thought to occur in *Pisonia grandis* Ectomycorrhizal (ECM) fungi are thought to make nitrogen available to plants where it was otherwise unavailable.

forests on Heron Island.

leaching



Another good audience turned out to hear another international speaker, **Dr Jan Bokdam** of Wageningen. They were not disappointed. Dr Bokdam used his studies on the dynamics of successional grassland-heathland-forest ecosystems in the Netherlands to highlight the co-evolution and co-dependence of plants and herbivores, and open our eyes to the wider picture of a complete landscape. He showed how the grasslands soon revert to heath land and then to forest when the grazing animals are excluded.

But, more than that, grazing the grasslands encourages succession, with wild cows recycling nutrients by depositing dung in the shelter of the forest. When this nutrient depletion lowers grass production the cows look for fresh pastures. The lowered grazing intensity then encourages the invasion of less palatable heaths (*Calluna vulgaris*, *Erica tetralix*) along with pine (*Pinus sylvestris*) and silver birch (*Betula pendula*). These, plus thorny briar rose and hawthorn act as shelter for the more palatable forest species such as oaks (*Quercus* sp.) and beeches (*Fagus* sp.).

As the resultant forest ages, cracks begin to appear. Browsing and grazing herbivores open up the canopy, suppress the growth of shrubs and forbs (tall herbs) and deposit dung laden with fertiliser and grass seed. So whenever a big tree falls over and lets in light the conditions are right for a grassy clearing to form and thus start again the well-studied European resource-mediated successional grazing cycle (RSGC).

In New Zealand the situation is a little different. Our flora co-evolved with avian herbivores, now mostly extinct and replaced by a mixed assemblage of mammalian grazers and browsers. Over the summer Dr Bokdam collected dung from a range of these, including cattle, sheep, wild goats & pigs, fallow & red deer, rabbits and hares, (but not possums). His growth experiments in the Botany Department glasshouse have produced thousands of seedlings and show that, as in Europe, the large grazers and browsers disperse mainly viable introduced grass seeds in their dung. The goat droppings grew more native plants, dicots as well as monocots, while the dung of the omnivorous boar was notable for the number of kanuka, *Kunzea ericoides*, seedlings it produced.

An interesting aside - in the Netherlands, as in New Zealand, wilding pine enthusiasts uproot invading pines to preserve grasslands. They perform the same function, perhaps, as the elephants that roamed Europe in the inter-glacial period.

The burning question remains. How can we, here in New Zealand, best replace our lost herbivore assemblage to ensure a more balanced ecosystem?

Thank you, Jan, for sharing such thought-provoking research.

#### Reference

Bokdam, J. (2003) Nature conservation and grazing management. Free-ranging cattle as a driving force for cyclic vegetation succession. PhD thesis. Wageningen University, Wageningen, The Netherlands.

(Dr Bokdam has kindly donated a copy of his thesis to the Department of Botany library.-ed)

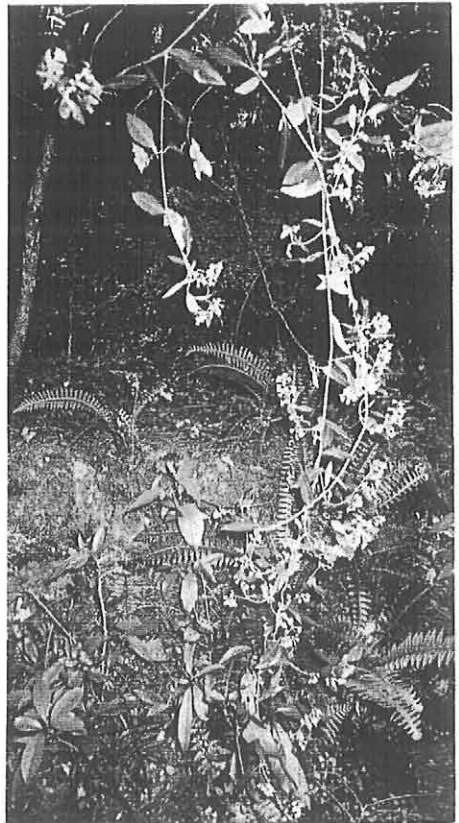
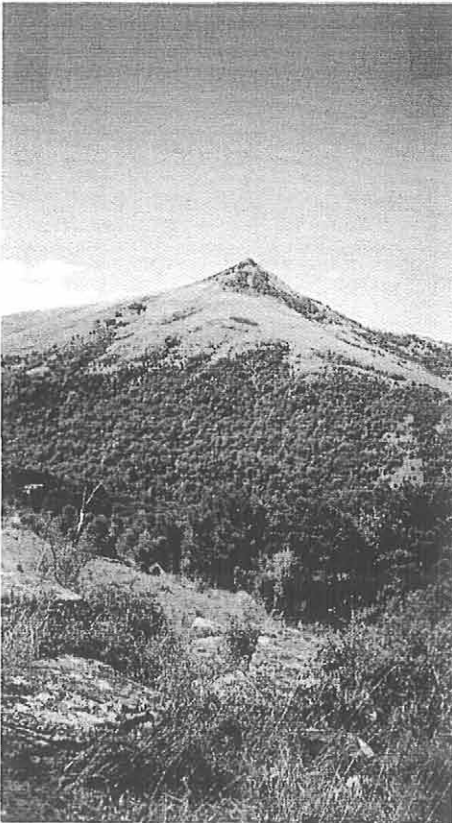


## Trip reports

**Mt Watkin podocarp forest** 6 Dec. 2003

*Allison Knight*

Fourteen and a half – including spunky little Eve - was a good turnout in doubtful weather with a competing Forest and Bird trip. (We must try to avoid such clashes in future). A metal road round the upper slopes of Mt Watkin followed by a walking track through farmland took us to the upper edge of the forested branch of the upper Waikouaiti River. We stopped in the sun by an old farm cottage, where Ralf gave us the background to his doctoral research, plus species lists from his two quadrats of 20 sq m for us to add to. Then we agreed to rendezvous back there at 3 pm before heading down into the untracked forest, though some headed back to collect forgotten lunches, and disappeared from sight for the day.



Left to right, Mt Watkin from the forest edge,

flowering *Parsonsia*

Photographs *Jean Bretherton*

An enormous *Coprosma linariifolia* with a great thick trunk was soon dwarfed by the majestic podocarps stretching skywards – totora, matai, rimu and kahikatea. Their flaking bark carried lichens characteristic of old-growth, sheltered forests, such as the tiny white volcanos of *Thelotrema lepadinum* and the filamentous *Coenogonium implexum*. Both these lichen incorporate *Trentepohlia* sp. as their green algal photobiont, co-existing with the bright orange filaments of free-living *Trentepohlia* sp.. On the forest floor we were delighted to see orchids in flower, a *Microtis* sp. and several *Pterostylis* species. There was debate about a possible *Polystichum silvaticum* fern by the stream, and admiration for the feathery fronds of luxuriant groves of *Leptopteris hymenophylloides*. Lower down the valley wild lettuce, *Mycelis muralis*, made a surprise appearance, while in the frost hollows the dangling mossy zig-zags of *Weymouthia* sp indicated the coldness and dampness of those sites, where the ancient hanging fern-ally, *Tmesipteris tannensis* added to the primeval ambience.

In sunnier spots sweet smells and busy bees heralded the flowers of the native jasmine, *Parsonsia heterophylla*. Peter Bannister's expert eye detected 3 species of the grey fruticose lichen, *Ramalina*, for Jennifer – *R. celastri* and *R. glaucescens* fruiting on the bush edge, and the sorediate *R. erumpens* in a dry stream bed unexpectedly deep in the forest. Peter also spotted on the bush edge, perching on *Coprosma propinqua*, the native mistletoe *Ileostylus micranthus* – a fitting finale for a fine December foray.

Thank you, Ralf, for sharing the results of your research – and for the fine afternoon tea. Thanks also to Liz Brensell, for letting us cross her farm to explore another botanically special section of the proposed Mt Watkin Reserve.

## West Coast with the Wellington Botanical Society 30 Dec – 10 Jan

Allison Knight

Four sizzling, sun-drenched days marked the start of another splendid summer trip with the Wellington Botanical Society. Five BSO members, Allison Knight, Moira Parker, Judy Russell, Monica Peters and Nola Walker drove over to the West Coast to join them. Four of us took an extra day to admire the alpine plants on the Dobson Nature Walk at the top of Arthurs Pass and then get acquainted with some West Coast plants around Lake Brunner. We stopped the car to see a bush cabbage tree, *Cordyline banksii*, in full flower and walked up the ferny track to Carew Falls before driving on past Moana to set up tents at Koriri Lodge and meet the other 2 dozen enthusiasts, including 2 from the US.

First fine day we drove to the top of Sewell Peak to investigate the tops of the Paparoas. The fittest walked right to Mt Davy and all the way back down the road, the lagging lichenologist got engrossed by the *Placopsis* spp. and other crustose lichens and only made it as far as Paparoa Peak.

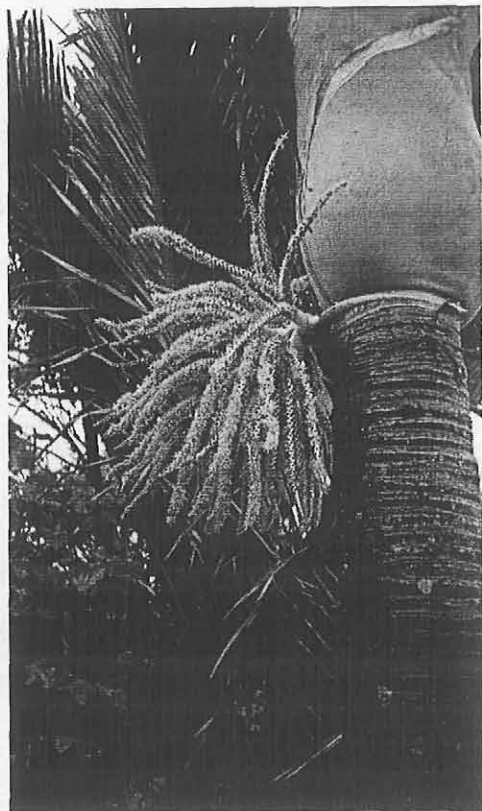
The next fine day the walking started on the shores of L Brunner, where the new Mt Te Kinga track cut a transect up through mixed Kamahi/Rata forest (no *Nothofagus* here) to groves of *Libocedrus* giving way to *Dracophyllym/Olearia* scrub and finally tussock grassland to the scorching summit. Graeme Jane commented that the mountain cedar,

*Libocedrus bidwillii*, has a life-cycle of around 300 y and can live up to 1000 ! Their dead spars stand unchanged for 20 y and last another 100 - 200 years, while the stumps, with their coating of specialized filmy fern, the glaucous *Hymenophyllum malingii*, even longer.

A third and fourth fine day had us heading towards sea and shade. Nikau palms abounded on the coastal Port Elizabeth Walkway, just north of Greymouth. Beech trees, *Nothofagus* spp., were again evident as we drove to the Croesus Track, in the historic mining area behind Blackball.



Allison and Judy under the flowering bush cabbage tree, *Cordyline banksii*, L. Brunner



Flowering Nikau palm, *Rhopalostylis sapida*, Punakaiki.

Photos by *Moira Parker*

The lichens on the rocks in Smoke-ho Creek kept me back from the ferny Blackball Creek that others investigated. On the 5<sup>th</sup> morning the neighbouring landowners invited us to visit their forest and wetland. They were keen to know how to encourage the growth of lichens on the old encrusted fence posts and rocks that they sell for landscaping. In the afternoon a splinter group investigated the limestone outcrops in the power line cutting behind Omoto, others went further afield.

The drought broke when we broke up camp and moved north east. First wet stop was at the Pancake Rocks near Punakaiki, where the native shore spurge, *Euphorbia glauca* was flourishing on the coastal limestone, and the Nikau palms, *Rhopalostylis sapida*, were resplendent in purple flower. On through the Buller Gorge to Murchison to restock, then inland along the Matakītiki Valley to Matakī Lodge, another ideal outdoor education centre, with walking tracks radiating out all around. There were noticeably more lichens here than in the higher rainfall areas of the West Coast. The beech forest was thickly coated with them on Jameson Ridge. Clusters of very orange *Omphalina alpina*, with toadstool fruit rising from green algae-filled mycelium, brightened the edges of bogs and tarns above bushline. The rocks on the Mole Tops were rich in alpine lichens, and the on scree slopes spidery *Neofuscelia* sp. decorated the rocks below the flowering scree plants *Notothlaspi australe*, which is only found in Nelson and Marlborough. Next morning Oxnam's Bog was visited between the showers, and a purple-flowered bladderwort, *Utricularia* sp., brought back for a closer look at the insect-trapping bladders. A walk along the valley had us puzzling over the differences between the serrated leaves of red beech and hard beech (which the local farmer called brown beech). A big windfall the next day contained so many irresistible specimens of the usually inaccessible canopy lichens that I nearly didn't get to the family wedding I was leaving early for. It was a marvellous trip. My heartfelt thanks go to everyone who worked hard to make it such a shining success, and to Austro Simulium (sic), for keeping a low profile.

### **Toko Wetlands and Toko Mouth dune slack. 24 Jan.**

*Moira Parker*

A party of six (Jean Bretherton, Allison Knight, Jennifer Bannister, Judy Russell, Moira Parker and trip leader Dr Janice Lord ) set off for Milton, where we left the main highway and headed towards the coast.

Our first stop was the Toko Wetland, adjacent to the Tokomairiro River and 3k upstream from the river mouth. The wetland is protected by a QEII open space covenant and managed by Fish and Game for duck shooting. Twenty hectares of the wetland belongs to City Forests Ltd and 5 ha are owned by Otago Fish and Game. The gravel road goes through the middle of the wetland so access is easy, though there is no formed track.

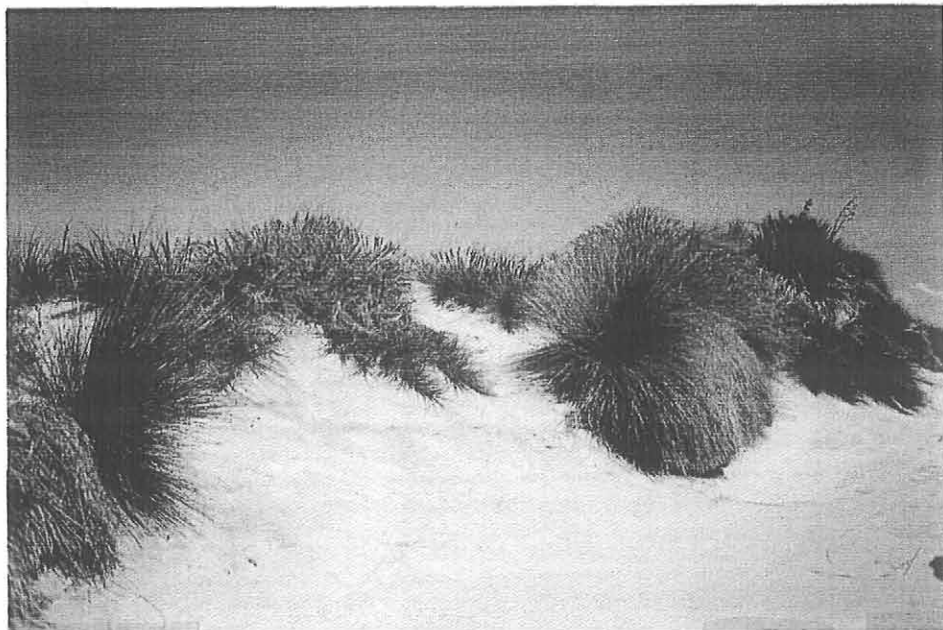
We could hear fern birds and eventually were delighted to see one darting in and out of a tall *Coprosma* bush. I was surprised at the chestnut brown colour of the plumage. Shrubs in the wetland included *Plagianthus divaricatus*, *Coprosma propinqua* and *Coprosma decurva* with upward curving branchlets, (previously known as *Coprosma* sp. "little red fruit") though the fruits were still green. There were several species of *Carex* including

*C. secta*, and *C. appressa*. Small patches of turf plants included *Lepidium* sp., *Centella uniflora* and *Apium prostratum*. There was some excitement over a single plant thought possibly to be *Limosella curdeana*, but further investigation showed it to be *Selliera radicans* with unusually long leaves.

Janice's delightful crib just behind the beach at Toko Mouth was a great spot for lunch - the shade was most welcome, as were the cups of tea. After lunch we put on sunscreen and hats and headed out into the sand dunes. We were surprised to see several patches of pingao *Desmoschoenus spiralis* flourishing on the steep, windblown dunes, and not being invaded by marram. It was pleasing to learn that pingao occurs naturally at Toko Mouth and extends about three quarters of the way to Measley Beach - a distance of approximately 3 km.

Soon we reached a high point, from where we looked onto the flat, dune slack- green with turf plants and clumps of rushes. On hands and knees we could appreciate the variety of tiny turf plants, such as *Pratia* sp. with flowers and pink berry fruits, *Ophioglossum*, (adder's tongue fern), *Centella uniflora*, *Lagenifera*, *Hydrocotyle*, and two species of *Epilobium*.

On such a warm afternoon, a few of us couldn't resist a refreshing dip in the surf - which made a lovely finish to the day. Many thanks to Janice for leading the trip and sharing her knowledge of this interesting area.



Pingao, *Desmoschoenus spiralis*, flourishing between rushes (*Juncus* sp.) on the dunes at Toko Mouth  
- photo Jean Bretherton



## Books

### ***The Natural History of Southern New Zealand.***

Edited by John Darby, R. Ewan Fordyce, Alan Mark, Keith Probert and Colin Townsend.  
University of Otago Press. Email [university.press@otago.ac.nz](mailto:university.press@otago.ac.nz)

*The Natural History of New Zealand* is a major work combining hundreds of years of collective research and expertise. Leading scientists from the University of Otago guide the reader through the south in a profusely illustrated book that will be the ultimate work on the region's unique physical environment for some time to come.

The book considers geology, landforms, fossils, climate, biogeography, environmental change and the impact of human beings, before taking the reader through a series of habitat-based chapters. Forests and shrublands, tussock grasslands and associated mountainlands, inland waters and wetlands, the coast and the open sea are explored, and there is a closing chapter on conservation issues.

The editors are experts in their fields: John Darby is a retired assistant director at the Otago Museum, and from the University of Otago: R. Ewan Fordyce, Associate professor in Geology; Alan Mark, Emeritus Professor of Botany; Keith Probert, a lecturer in Marine Science; and Colin Townsend, Professor of Zoology.

Superb illustrations include photographs, satellite images, paintings and drawings as well as diagrams. *The Natural History of Southern New Zealand* is published in association with the Otago Museum. (February 2004).

Excerpt from University of Otago Magazine, issue 7, Feb 2004.

*(Cost will be in the region of \$100 – start saving now and watch out for the launch! –ed)*

### ***Nature conservation and grazing management. Free-ranging cattle as a driving force for cyclic vegetation succession***

Bokdam, J. (2003). PhD thesis. Wageningen University, Wageningen, The Netherlands.

Visiting scientist Dr Jan Bokdam has kindly donated a copy of his thesis, published very attractively as a book, to the Department of Botany library.

Jan has also donated -

***Grazing and Grazing animals*** special issue, Vakblad Natuurbeheer 41, May 2002.  
See Janice Lord to look at this wonderfully illustrated magazine, with pictures of the extinct interglacial mega fauna of Europe and much more.

## Bulletins and Newsletters

### **- Publications from other Botanical Societies**

Wellington Botanical Society has very generously donated to BSO back copies of their annual Bulletin to supplement the gaps in the series in the Botany Dept Library.

The excellent botanical society publications ***Botany of Waikato***, donated by Jim Crush, and ***Botany of Rotorua*** are also in the Botany library in the computer room.



Publications which we receive in exchange for our newsletter include:

*The Tasmanian Naturalist* – annual publication of Tasmanian Field Naturalists Club  
*Wildenowia* – Annals of the Botanic Garden and Botanical Museum Berlin-Dahlem  
*Auckland Botanical Society Journal* and *Rotorua Botanical Society Newsletter*, both published every six months, and the quarterly *New Zealand Botanical Society Newsletter*.

BSO also receives reciprocal **newsletters** from the following Botanical Societies and related organisations: Auckland, Manawatu, Wellington, Canterbury and Wakatipu Botanical Societies; Tasmanian Field Naturalists Club, Dunedin Naturalists Field Club, Otago Institute and the Otago Alpine Field Group. Any other interested group is welcome to receive our BSO newsletter in exchange for theirs.

Current copies of the above publications are displayed on the BSO bookshelf just inside the door of the Botany Department tea room. Back copies will be filed in the computer room. So there's a wealth of reading gathered here.

In addition, the **annual programmes** of Dunedin Branch of Forest & Bird and the Dunedin Naturalists Field Club are pinned up on the BSO noticeboard.

## Special Book deals and details

**BSO Members Discount:** Many botanical books, not just from Landcare, and including those published by CSIRO, Australia, are available from Manaaki Whenua Press, at 20% off, to BSO Members. This includes post and packing. If you are a member of BSO, say so when you order.

**Email:** [MWPpress@landcareresearch.co.nz](mailto:MWPpress@landcareresearch.co.nz)

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

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

**Telephone:** +64 3 325 6700, Fax +64 3 325 2127

**Department of Conservation publications**, such as the new threatened species classifications and lists, may be ordered by contacting:

DOC Science Publishing  
Science and Technical Centre  
Department of Conservation  
PO Box 10420  
WELLINGTON

Phone: (04) 471 3285

VPN: 8285

Fax: (04)496 1929

Email:

[science.publications@doc.govt.nz](mailto:science.publications@doc.govt.nz)

## Compact Discs

Fayla Schwartz has left BSO a CD of all the fabulous botanical images that she used to illustrate her talk *Flora and vegetation zones of Washington State* last December. To borrow it, contact Allison Knight

## ***Herbage ethnobotany database* – (advertisement)**

From: Tim Johnson <[timjohnson@musicopia.net](mailto:timjohnson@musicopia.net)>

Third Edition by Tim Johnson author of the CRC Ethnobotany Desk Reference. Limited time offer! Order directly from the Author and save \$130 off the retail price. The Herbage CD-ROM contains a database of over 28,000 concise monographs of medicinal plant species characteristics - and an inventory of claimed attributes and historical uses by cultures throughout the world. - the result of more than a decade of independent research. Monographs are linked to hundreds of thousands of articles and images via the world wide web, providing an exhaustive tool for in-depth global herb research. Each species listing has links to powerful image and article searches.

## **Websites**

Mary Anne Miller advises that the **Plant Finder** website no longer exists. However the Herbarium still has a hard copy of the Trade Plant Finder 2001. Where to buy 35,000 plants in New Zealand. Compiled by Meg Gaddum.

**Botanical Society of Otago:** <http://www.botany.otago.ac.nz/bs/>

Our web site contains trip details, membership forms, contact details and links to other websites of Botanical interest. Check it out to see the new pictures and other changes David Orlovich has made, with updates on trips and activities.

**Alpine Ecosystems Research Group:** <http://www.botany.otago.ac.nz/alpine/>

This website features some of the recent research on alpine ecology being undertaken at the University of Otago. Good background reading for those keen to come on either of the next two BSO field trips, to the top of the Blue Mountains with Prof Alan Mark on 13 March, and to the herbfields and cushion fields on top of the Rock and Pillars, with the opportunity to stay overnight on the weekend 3-4 April.

*Celmisia prorepens*, Mark and Adams  
*New Zealand Alpine Plants*, 1973



## **News**

### **Prize for Paleo-botanist**

At the December 2003 Geological Society of New Zealand annual conference in Dunedin, Jennifer Bannister was presented with a Harold Wellman Prize for the discovery of epiphyllous fossil fungi on leaf cuticles that were 35-40 million years old. This is the first time these fungi have been described on leaves in New Zealand. The prize was also for finding a 20 million year old, 2.3 cm diameter fossil flower. This is the first time a fossil flower with anthers still containing pollen has been found in New Zealand. *Well done, Jennifer!*

## **Audrey Eagle Prize for Botanical Drawing – entries due 8 March!**

Audrey Eagle will present the first Audrey Eagle prize for Botanical Drawing, at the Annual General Meeting of the Botanical Society of Otago, on 21 April this year. The **prize of \$100** will be awarded for the best botanical drawing submitted by Monday 8 March, 2004. **The competition is open to all current members of BSO.**

Entries may be given to Audrey to take home for judging at our evening meeting on 8 March. Any medium is permitted, colour or black and white. The main criterion is that it has a botanical theme. Audrey suggests that something that has not been fully illustrated yet, like a small herbaceous plant, a lichen or a liverwort would be of added botanical interest. The president would love to have colour pictures to feature on our website, the committee is keen to have something we can use as a logo or letterhead, while the editor will be delighted to have original art to feature in the BSO newsletter, especially if there is an interesting note to go with it. (Bear in mind that the newsletter is set out in 14 pt font on A4 pages, which are photocopy-reduced to A5 for publishing in black and white.)

Each drawing should be accompanied by a caption and any comments of interest. Don't forget to include your name and contact details. If you can't make the March meeting, entries may be sent to: BSO Drawing Prize, Box 6214, Dunedin North, or put in the BSO pigeonhole in the Botany Dept. mail room, by midday on Monday, 8 March. Email queries to: [bso@botany.otago.ac.nz](mailto:bso@botany.otago.ac.nz) *Happy drawing!*

## **Department of Conservation Recreation Review – Otago**

The Department of Conservation is having a national review of all its facilities, including tracks and huts. Submissions are now closed but proposals for Otago are still posted at:

<http://www.doc.govt.nz/Explore/DOC-Recreation-Opportunities-Review/My-Favourite-Place/014~Otago.asp>

Full details of the plans for each facility can be found in the [conservancy discussion document](#) pdf. It is worth checking out the future plans for your favourite place in the hills. For instance, of the 7 huts in the Coastal Otago area likely to be used as a base for botanical forays, 4 are proposed for removal; all 3 huts in the Rock and Pillar Range botanical research area, plus Yellow Hut in the Silver Peaks. Also in the Silver Peaks, Possum Hut is down for minimal maintenance and Jubilee Hut to be maintained by the community. In the Catlins, McLennan Hut is to be moved to a more hospitable location.

Bastow Wilson has put in a submission on the Rock and Pillar huts on behalf of BSO.

## **Botanical Society of Otago Trip guidelines for participants**

- The Trip Programme may be subject to alteration. On a wet Saturday the trip may be postponed until Sunday. If in doubt, check with the Trip Leader.
- Adequate food, drink, outdoor clothing, footwear and gear for all weather conditions must be taken.
- A daypack, hand lens and botanical field guides are recommended.
- You are responsible for your own first aid kit. Those with allergies or medical conditions are asked to carry their own anti histamines and medications, and to make the trip leader aware of any problems and how to deal with them.
- Individuals are responsible for keeping with the party. If you have any doubts about your ability to do this, you must check the trip conditions with the trip leader, who reserves the right to restrict attendance.
- Transport on trips is by car pool. Costs are currently 10c/km/passenger, to be paid to the driver. If you change cars mid-trip, leave a written note for your driver.
- **Drivers**, please ensure you know where you are going, and who is in your car.
- Zero the odometer at the start, agree on a return time,
- account for all your passengers before you come back
- collect contributions towards transport costs.

## **BSO Guidelines for Trip leaders**

- Check access with landowners
- Obtain plant lists if available and collecting permits if needed
- Check weather reports
- Carry compass, map and party first aid kit.
- A whistle and a cell phone could be handy for emergencies.
- Keep the following vehicles in sight if travelling in convoy.
- List all participants and their contact numbers and leave in the lead vehicle.
- Keep the group informed and suggest appropriate lunch stop and return times.
- Please arrange for someone to write a trip report, and a plant list, if appropriate, for the newsletter.

## **Botanical Diary**

### **International Events**

16 – 21 August, 2004 **5th International Association of Lichenology Meeting (IAL5)**, Tartu, **Estonia**, with associated lichenological field trip to **Russia**, 10 – 15 August.

Call for papers for an international conference on ECO-ENGINEERING: 'the use of vegetation to improve slope stability' to be held in Thessaloniki, Greece, September 13 – 17, 2004, contact Sanna Dupuy, email: [sanna@lrbb3.pierroton.inra.fr](mailto:sanna@lrbb3.pierroton.inra.fr)

13 – 16 July 2005. **XVII International Botanical Congress**, Vienna, Austria.  
<http://www.abc2005.ac.at>, email: [office@abc2005.ac.at](mailto:office@abc2005.ac.at)

## Australasian Events

**16<sup>th</sup> Meeting of Australasian Lichenologists**, Jindabyne, NSW, and adjacent Kosciuszko National Park. **17 -18 April**, 2004. To register contact Jack Elix, Dept of Chemistry, Faculty of Science, Australian National University, Canberra, ACT 0200. Phone: 61 (0)2 6125-2937, fax: 61 (0)2 6125 0760, email: [John.Elix@anu.edu.au](mailto:John.Elix@anu.edu.au)

**18<sup>th</sup> New Zealand Fungal Foray**, Brightwater, Nelson, **9-15 May** 2004. Register by 28 March. A small number of grants are available for students in New Zealand. Registration forms and more info. on BSO noticeboard or see [www.landcareresearch.co.nz/research/biodiversity/fungiprogram/foray/](http://www.landcareresearch.co.nz/research/biodiversity/fungiprogram/foray/)

**Local Events** - see front pages for finalised BSO events.

10 March, Wed. 12 noon, Botany seminar *Vegetation dynamics in seasonally grazed upland systems* Dr **Meg Pollock**, University of Edinburgh

17 March, Wed. 12 noon, Botany seminar *My life as a Physiologist Ecologist* Professor **Peter Bannister**, Botany Department, University of Otago

27 March **Geoff Baylis Gathering**, Saturday, 10 am – 5 pm. Dunedin. Prof. Alan Mark is organising a full day gathering of friends and associates of Professor Baylis in Dunedin on Saturday, March 27. Those wishing to attend are asked to contact Emeritus Prof Mark at the Department of Botany, University of Otago, or the department's secretary, Trish Fleming, ph 03 479 7577, email : [trish@planta.otago.ac.nz](mailto:trish@planta.otago.ac.nz)

### **Weekend lichen workshop.**

There is a small group showing interest, including David Galloway. If numbers increase we'll reconsider the weekend in Central Otago in the second half of the year. To express interest, email: [bsa@botany.otago.ac.nz](mailto:bsa@botany.otago.ac.nz), or phone Allison Knight, 487 8265, or Jennifer Bannister 467 2142. Then we'll arrange the most suitable date.

### **Drawing from Nature - Botanical Illustration course**

This has been moved to the second half of the year.

Tutor **Monica Peters** will encourage participants to explore different methods of representation by considering ways that plants have been depicted throughout history, and will introduce various drawing, watercolour and acrylic techniques

for botanical illustration. The class will be suitable for beginners as well as those with some experience. Thursdays 7-9pm for 8 weeks. Cost: \$120 includes gst and some materials.

To enroll, please contact: Cleveland Living Arts Centre First Floor, Dunedin Railway Station PO Box 5786, Dunedin (03) 477 7291

## **Local contacts and meeting places of groups with overlapping interests.**

**University of Otago Botany Dept** Seminars are on Wednesdays during teaching semesters 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. **Contact: Trish Fleming, Secretary, phone 479 7577, email: trish@planta.otago.ac.nz**

**Dunedin Naturalists' Field Club (DNFC)** Meetings are at 7.30 pm, first Monday of the month, in the Zoology Dept Seminar Room, (NOTE CHANGED VENUE) Great King St. Their field trips leave from the Citibus Depot, Princes St. Visitors are welcome. **Contact: Beth Bain, 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, 9 am, 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**

**DOC Conservation Volunteers:** ongoing opportunities for hands on conservation work in coastal Otago. Learn new skills in some neat places, help conservation efforts and have fun all the while! To sign up, and receive newsletters and event programmes, **contact David Mules: dmules@doc.govt.nz**

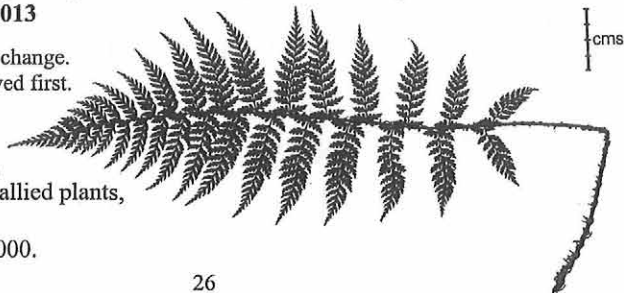
**Otago Institute (OI)** contact: **Michelle McConnell, secretary, phone 479 5729, email: michelle.mcconnell@stonebow.otago.ac.nz . Web site: <http://otagoinstitute.otago.ac.nz/>**

**Southland Natural History Field Club.** Meetings 7.30 pm on the second Thursday of the month, currently at the Otatara Hall, just out of Invercargill. Field trips the following Saturday or Sunday to places of botanical, ornithological, ecological or geological interest. **Contact Lloyd Esler 032130404, email esler@southnet.co.nz**

**Otago Alpine Garden Group** Meets every 3<sup>rd</sup> Thursday of the month at the Dunedin Botanic Gardens Centre, Lovelock Avenue at 7.30 pm. The Group operates a seed exchange and holds periodic field trips and garden visits. **Contact: Secretary, P.O. Box 1538, Dunedin or Les Gillespie Ph 489-6013**

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

*Polystichum silvaticum*,  
New Zealand ferns and allied plants,  
PJ Brownsey and  
JC Smith Dodsworth, 2000.





# Botanical Society of Otago

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Botanical Society of Otago, PO Box 6214, Dunedin North, New Zealand

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*Please submit copy for next newsletter by 14 May 2004*

For information on activities contact the trip leader, or see our notice board in the Botany Dept corridor, or website: <http://www.botany.otago.ac.nz/bsa/>

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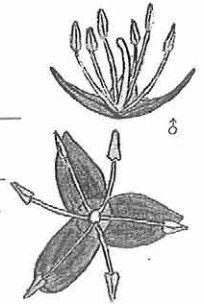
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