



**BOTANICAL SOCIETY**  

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**OF OTAGO**

## Newsletter Number 52 October 2007

### **BSO Meetings and Field Trips**

**Important note.** Some of the event details have changed since the last BSO *Newsletter*, so please double check the details below to ensure you have the correct time/date/place for the talks and trips you're attending!

**10 October**, Wednesday **5:45 pm**. 6<sup>th</sup> Annual Geoff Baylis Lecture: **Who gives a tussock? Geoff Baylis and the Hellaby Trust!** by Professor Alan Mark. Geoff Baylis was a Board member since the inception of the Hellaby Trust in 1959 and was Chairman for many years. Professor Mark has also been involved in many different ways since the Trust's inception. The Trust has supported approximately 360 projects over the years. **NOTE NEW VENUE:** Archway 2 Lecture Theatre. **Light refreshments will be served for BSO members in the University Staff Club from 5:15 p.m.** Dinner will follow at 7:30 p.m. at *Etrusco Pizzeria & Spaghetteria* (8A Moray Place, Dunedin) for a banquet-style meal for \$25/person (or \$30/person with dessert). If you would like to go to dinner, email [robyn.bridges@otago.ac.nz](mailto:robyn.bridges@otago.ac.nz) by 4 p.m., Tuesday 9 October 2007.

**14 November**, Wednesday 5:20 pm. **A Very Merry Mere.** A talk by Dr Peter Johnson. A celebration of the award will follow the talk. The Allan Mere was gifted by Dr Lucy Moore in 1982 to commemorate the botanist Dr HH Allan, on the occasion of the 100th anniversary of his birth. The mere is made from pounamu. As the 2007 recipient of the Allan Mere award, and as a resident of Te Wai pounamu, I shall use this as a theme, linked with a 'mere' of my own creation, to describe some of the merry places and marvellous plants of my botanical wandering and wondering. Dinner will follow this talk (restaurant to be decided). If you would like to go to dinner, email [robyn.bridges@otago.ac.nz](mailto:robyn.bridges@otago.ac.nz) by 12 November 2007. See Meeting Details on p. 2 for venue.

**17 November**, Saturday 8:30 am. **Trip to Pulpit Rock and the Painted Forest.** A botanical day tramp for the medium to fit: a 6-7 hour return trip. Following a

ridge track to the site of the old Green Hut and then upwards to Pulpit Rock, we will descend to the Painted Forest, a 75 ha pure stand of silver beech reaching an altitude of 700 m, west of the tallest peak. It is thought beech was widespread in the Silver Peaks, but has been reduced by early fires. The origin of the name of this stunningly beautiful primeval patch of beech is a mystery. This is exposed country where conditions can change quickly, so bring appropriate clothing, footwear and food. Meet 8.30 am Botany Department car park. Leader **Robyn Bridges**, ph. (03) 479 8372.

**3 December, Monday 5:20 pm. The Peatland/Ice Age hypothesis, and a possible glacial pulse initiation trigger.** A talk by Professor Lars Franzén, Earth Sciences Centre, Göteborg University, Sweden. In early December, Prof Franzén, will be visiting southern NZ to sample peat bogs. He is an ecologist/geologist, and one of the two leading scientists advocating the idea that entrapment of carbon dioxide into peat in bogs is the main cause of ice ages. See Meeting Details below for venue. An end-of-year BSO dinner will follow this talk, at a restaurant to be decided. If you would like to go to dinner, email [robyn.bridges@otago.ac.nz](mailto:robyn.bridges@otago.ac.nz) by 30 November 2007.

**29 February 2008, Friday 12-2 pm. Free BSO BBQ!** A BBQ to welcome new botany/ecology students and new BSO members. At the front lawn, Botany House Annex, Great King Street (across the road from the main Botany building). Sausage sandwiches and drinks provided free by the Botanical Society of Otago. All current and prospective BSO members welcome!

**Meeting details:** Talks are usually on Wednesday evening, starting at 5.20 pm with drinks and nibbles (gold coin donation), unless otherwise advertised. Venue is the 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, Room 215, 2<sup>nd</sup> floor. Please be prompt, as we have to hold the door open. Items of botanical interest for our buy, sell and share table are always appreciated. When enough people are feeling sociable we go out to dinner afterwards - everyone is welcome to join in. Talks usually finish around 6.30 pm, keen discussion might continue till 7 pm.

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

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## Chairman's Notes

*John Barkla*

Despite snow falling this morning I know spring has arrived – my *Olearia hectorii* are in flower – a sure sign. Our winter trips have generally struck good weather and have been well supported. Behind the scenes the committee have been busy pulling together our first ever Botanical Society of Otago calendar with pictures selected from our inaugural photo competition earlier in the year. It looks fantastic and should be available by the time you read this newsletter. Particular thanks are due to Abe Gray who masterminded the project. Your purchasing support (think Xmas presents here) will ensure it happens again. The committee has also been working on establishing the Audrey Eagle Publishing Fund from monies generated through our successful

publication of the Supplement to Eagle's Complete Trees and Shrubs of New Zealand. The idea is to provide a source of funds to cover the initial printing costs of other publications of interest to members, with the sale of such publications replenishing the Fund. There's more work to be done on the detail so watch this space.

This will be the last newsletter before Christmas, so, as early as it seems, this is my last opportunity to wish you a collective salutiferous holiday. There's still a great line up of trips and speakers to come though and you'll notice an emphasis on socialising, with opportunities to go out for meals after talks. Hope you can take advantage of them.

## Treasurer's Notes

*Lyn Bentley*

The end of 2007 is fast approaching and this means 2008 subscriptions will be due on 1 January 2008. I will be sending out accounts in the not too distant future but if you can pay your subscription prior to this it would be

much appreciated, with postage now being a major cost to consider. There are Membership forms on the website and also in the back of the Newsletters. This is a great way to keep your address details etc up to date for us.

## Editor's Notes

*David Orlovich*

Welcome to the next *BSO Newsletter*! I hope you enjoy it! **Please submit copy for next newsletter by 15 February 2008.**

**Editor's guidelines:** Contributions are always welcome. Try to aim for a 0.5 – 1 page of 14 pt Times for news, trip/meeting reports and book reviews,

and 1 – 5 pages, including illustrations, for other articles.

**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. Publishing

of advertisements does not necessarily imply endorsement by this Society.

## Correspondence and News

### Comment on John Steel's article on hen and chickens ferns in the last issue

*Leon Perrie*

I do find it difficult to be confident about identifying individuals of *Asplenium bulbiferum*, *A. gracillimum*, and *A. bulbiferum* x *gracillimum* in the field at sites where both species are present. However, this should not be cause for despair, because it is almost always straightforward to determine whether a site is home to both or only one of the species, and this is a sufficiently useful achievement for most endeavours (e.g., making species lists). Admittedly, this requires some experience with both species, and eastern South Islanders appear unfortunately placed for this, as *A. bulbiferum* does seem uncommon in your vicinity. *Asplenium bulbiferum* and *A. gracillimum* are actually fairly

distinctive and easily differentiated. The problems with accurately identifying individuals in the field are due to *A. bulbiferum* x *gracillimum*, which, although sterile, can be common at some sites, and can approach one or other of the parental morphologies rather closely. In such cases, I feel that I can only achieve accurate identification of individuals after checking their spores: abnormal spores indicate a hybrid, while normal spores indicate an individual of the parental species, which can then easily be attributed to either *A. bulbiferum* or *A. gracillimum* by frond and scale morphology, without even having to resort to measurement of spore size.

### “In human footsteps” – BSO expertise much appreciated overseas

*Mascha Bischoff*

The Botanical Garden and the Natural History Museum in Potsdam, Germany are currently displaying an exhibition about biological invasions caused through human interference until 31 August 2008. “In human footsteps” examines and explains the matters arising around the introduction of species to new ecosystems in a colourful and comprehensive way. Among the manifold examples of species turned into neobiota and often pests by human transport are two case

studies from New Zealand. The consequences of the introduction of the brush-tail possum (*Trichosurus vulpecula*) and Old Man's Beard (*Clematis vitalba* L.) are highlighted in two separate panels. BSO member Friederike Blenau collaborated with Potsdam Museum in order to provide insight and give advice about the situation in New Zealand. The full exhibition with all information panels is available on the internet at:

<http://www.potsdam.de/cms/beitrag/10026979/34694/2#4>

While the website is only available in German, the information panels are bilingual. If you are curious about the BSO's overseas efforts just click on the

### **Allan Mere Awarded to Peter Johnson**

Congratulations to Peter Johnson on being the well-deserved recipient of the HH Allan Mere Award for 2007. This award is administered by the New Zealand Botanical Society and is made annually to a person (or persons) who has made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.

As many BSO members will know, Peter amply fulfils these criteria in both capacities. His published academic papers cover everything from the bryophytes and vascular plants of our remote off-shore islands to the ecology of lakeside turfs and trees; from threatened plants to weeds to wetlands to lichens colonising braided river beds or acting as bio-indicators of air pollution. His books, including 'Wildflowers of Central Otago', his popular articles, excellent photographs and talks have informed and delighted a wide audience. In addition, Peter's 228 unpublished reports document the complete vascular flora of many

### **BSO Calendars available!**

By the time you read this, the 2008 BSO Calendar will be available for purchase. The beautiful calendar has photographs from the inaugural photo

German title and the upcoming pdf will have all the information in German and in English. There is some really interesting information about biological invasions worldwide and thanks to Friederike, New Zealand and the BSO are well represented.

*Allison Knight*

sensitive areas of New Zealand, including nearly every surviving remnant of native vegetation on the Otago Peninsula.

Peter was nominated for the Allan Mere Award by the Wellington Botanical Society and the Botanical Society of Otago, with supporting letters from Audrey Eagle, Alan Mark, The Otago Peninsula Trust and STOP (Save the Otago Peninsula).

HH Allan was the first director of the national DSIR Botany Division. In 1982 the greenstone mere was presented to commemorate the 100th anniversary of Allan's birthday. The President of the New Zealand Botanical Society will symbolically present Peter with this mere, hopefully at our November meeting. Then it will be returned to its glass case at the HH Allan Herbarium in Lincoln and Peter's name will be added to the panel of distinguished recipients.

competition earlier in the year, and was put together by Abe Gray. These will be essential Christmas presents for the discerning botanist. Calendars can be

purchased from Lyn Bentley (email: stevelf@ihug.co.nz; phone: (03) 467 9616; mail: c/- Botanical Society of Otago, PO Box 6214, Dunedin 9059) for \$12.50 plus \$1.50 postage. Make

cheques payable to the Botanical Society of Otago. You can save postage by purchasing one at the 6<sup>th</sup> Annual Geoff Baylis Lecture on 10 October or one of our other talks.

### **Congratulations to the new Head of Botany at Otago**

It was announced on 3 October 2007 that long-time BSO supporter, past Chairman and current BSO committee member Prof. J. Bastow Wilson would be the new Head of the Department of Botany at the University of Otago from

1 Jan 2008 for a period of three years. Bastow follows in the esteemed footsteps of Rev. Dr John E. Holloway, Prof. Geoff T.S. Baylis, Emeritus Prof. Peter Bannister and Assoc. Prof. Paul L. Guy. Congratulations Bastow!

### **Game Animal Panel**

The BSO has been notified about a NZ government panel that has been established to explore how to manage deer, chamois, tahr and pigs in a way that improves the conservation of native habitats but also recognises the importance of the four species to recreational hunters. The panel have

released a Discussion Paper for comment, which is available on the web at <http://www.gameanimalpanel.org.nz/>. BSO members may wish to fill out the questionnaire on the web site, or contact John Barkla if you would like to contribute to a BSO response to the paper.

### **2007 National Pollination Survey**

*Jenny Ladley, School of Biological Sciences, University of Canterbury*

The 2007 National Pollination Survey is underway. The purpose of the survey is to measure the health of bird-plant mutualisms throughout New Zealand. We are using the pollination service for tree fuchsia as an indicator of the health and wellbeing of our native ecosystems. This is part of ongoing research jointly run by Landcare Research, Department of Conservation and University of Canterbury.

We need your assistance. We need lots of people to complete the survey from lots of locations all over New Zealand this spring and summer. Please help by completing the survey for a tree fuchsia population near you. For more information and the survey forms visit [http://www.biol.canterbury.ac.nz/pollination\\_survey/](http://www.biol.canterbury.ac.nz/pollination_survey/)

## Articles

### Margaret Kathleen Cookson (nee Finlayson). b. 1920 - d. 2007. The Otago Years

*Mary Anne Miller*

In 1938 when Margaret Finlayson left Wellington to study botany at Otago University her world was to change in many ways. She had to make new friends (and through this process developed an interest in outdoor activities and sport), she had to study subjects like chemistry, for which she wasn't prepared, and come to terms with the devastating loss of her brother in WWII. Despite all this she thrived in the friendly family atmosphere of the Botany Department and after five years attained her MSc – a study of the liverwort *Symphyogyna hymenophyllum*.

Classes were small then. There were seven in her Stage 1 Botany class. Facilities were minimal as the department consisted of one room at the back of Otago Museum where everything happened. As her colleague Brenda Shore related, you could have Holloway lecturing to “seniors” in one corner, Ella Campbell teaching “juniors” in another and Honours students researching in a third. The fourth corner was partitioned off as Holloway's office, and all around were the herbarium, library, equipment and preserved material. Normally field trips were to places accessible by public transport and walking so when the Holloways and Ella Campbell went to Lowburn Ferry (now under Lake Dunstan) for a week of botanising in 1942 she was delighted to be invited, relishing walks up the Dunstan Range and along the Kawarau River.

The Botany Department is grateful to Margaret because she, along with three other recent women graduates, kept classes going for the first two terms of 1945 as the Reverend Dr Holloway, Senior Lecturer-in-Charge, was too ill to continue teaching and had retired at the end of 1944, his assistant Ella Campbell had moved to Massey University and Geoff Baylis, Holloway's successor, could not be released from the Navy until the war was over. These women, realizing the consequences of a break in studies for the currently enrolled students, stepped in to ensure undergraduate classes continued. Even when Geoff arrived for the third term Margaret stayed on to help lecturing because, as he put it, he felt a bit rusty after all those years at sea. Again in 1947 Geoff offered her the opportunity to do some more lecturing and she gratefully accepted this chance of being in the Department again.

Margaret worked with Norman Edson, Founding Professor of Biochemistry, in the Tuberculosis Research Lab, Otago Medical School after graduating, then left Dunedin about 1948 but always retained an interest in the Department, happily sharing memories at the time of our 80th anniversary celebrations in 2004.

Thanks to Ann Wylie for comments, Jane Lenting (nee Cookson) for the photograph and the Cookson family for access to Margaret's memoirs.





Margaret in the senior Botany Department lab about 1942.

## Visite des pelouses calcicoles à Solutré

Pascale Michel

The small village of Solutré-Pouilly is located in the Mâconnais region, at the southern Gate of Burgundy, and is famous for its Palaeolithic site and escarpment (“La Roche”). Artefacts and an abundance of horse bones (“Le Cros du Charnier”), which were first excavated in 1907 at the foot step of the escarpment, testify to the importance of the Solutré valley for the Solutrean and Magdalenian tribes, as a hunting site. Animal herds were ambushed during their seasonal migration from the Alluvial Plain of the Saône to the Mâconnais Uplands. La Roche de Solutré is now a protected site for its archaeological remains, and more recently for its wild calcareous meadows (pelouses calcicoles du Mâconnais) that cover slopes and plateaux (up to 430 m altitude).

Due to its geology and geography, La Roche de Solutré encompasses different climatic zones: Mediterranean, continental and mediterraneo-mountainous; resulting in a rich and unique flora. Orchid species are diverse, but rare. Protected species of Solutré includes Orchis homme-pendu (*Aceras anthropophorum*), Loroglosse à odeur de bouc (*Laroglossum hircinum*) and Oeillet des chartreux (*Dianthus carthusianorum*). Viperine (*Echium vulgare*) is the most common vascular plant species and attracts a great diversity of insects. The Moro-sphinx (*Macroglossum stellarum* – Hummingbird hawk moth) can often be observed feeding voraciously on



Orchis pyramidal (*Anacamptis pyramidalis*). Photo: Pascale Michel.

*Echium vulgare*. Other common weeds of New Zealand, the Molène bouillon blanc (*Verbascum thapsus*) and the Millepertuis perforé (*Hypericum perforatum*) are also typical of these “pelouses calcicoles” ecosystems. Geranium Herbe-à-Robert (*Geranium robertianum*), Hélianthème (*Helianthemum nummularium*), Hippocrepis fer-à-cheval (*Hippocrepis comosa*), Potentille printanière (*Potentilla neumannian*), Coronille bigarree (*Coronilla varia*) and Knautie des champs (*Scabia knautia*) are quite common at Solutré. On the more rocky substrates, the Orpin blanc (*Sedum album*) and the Germandrée Petit-



Konik Polski horses grazing the “pelouses calcicoles” at Solutré. Photo: Pascale Michel.

Chêne (*Teucrium chamaedrys*) can be seen. The delicate Petite primrenelle (*Sanguisorba minor*) is often present but discrete. In addition to a large collection of vascular plants from Solutré, the recently established botanical garden also presents native woody species, including Prunellier (*Prunus spinosa*), Groseiller à maquereaux (*Ribes uva-crispa*), Eglantier (*Rosa canina*), Cornouiller sanguin (*Cornus sanguinea*), Sureau noir (*Sambucus nigra*), Cerisier de Sainte-Lucie (*Prunus mahaleb*), and the protected Coronille des jardins (*Hippocrepis emerus*).

“Les pelouses calcicoles” are often the results of itinerant pasturage; and in France, horses and goats are often used in the management of these ecosystems, where grazing prevents the colonisation of Chêne pubescent

(*Quercus pubescens*), Genévrier (*Juniperus communis*) and Buis (*Buxus sempervirens*). To replace the Tarpan horses since long extinct at Solutré, a small population of the Polish Konik Polski horse has been reintroduced. Wild flowers are now thrilling and one can only be delighted by the flamboyance of colours on warm spring days. Insects have also made a great come back, including butterflies and beetles.

For all botanists travelling through this part of France during spring, the “pelouses calcicoles du Mâconnais” at Solutré are worth the detour. More information can be obtained from the Musée Départemental de Préhistoire de Solutré website, [www.musees-bourgogne.org](http://www.musees-bourgogne.org), or by e-mail at [museesolutre@cg71.fr](mailto:museesolutre@cg71.fr).





Beetle foraging on *Echium vulgare*. Photo: Pascale Michel.

## Recent botanical literature

Mike Thorsen

**Botanical names in Southern Hemisphere *Veronica* (Plantaginaceae): sect. *Detzneria*, sect. *Hebe*, and sect. *Labiatoides*.** Garnock-Jones, P, Albach, D; Briggs, G. 2007. *Taxon* **56**: 571-582.

When I was requested by the esteemed editor to review this paper my first reaction was of mild panic, predominantly because I am not sufficiently knowledgeable about the subject. But, with the intent of stimulating debate, and leaving aside the technical issues of selection of gene regions to be sampled, tree construction, and tree choice as these are best judged by someone with a solid background in molecular evolutionary studies, here is my view on this paper.

There is a burgeoning argument in taxonomic circles between “cladists” who pursue monophyly (all species in a group are more similar to the other members of that group than to any member of another group) based primarily on phylogenetic evidence and “traditionalists” (for want of a better term) who pursue a classification based primarily on divergent (apomorphic) characters (and also frequently include phylogenetic information). While monophyly is a fine ideal, the reality of introgressive hybridisation during a taxon’s evolutionary history may make this ideal unobtainable. I most definitely do not want to be drawn into this debate. Both “sides” make good arguments (see this paper, Albach et al. 2004, and Brummitt 2006 for an introduction to this debate), and as I am not a practicing taxonomist I do not have enough experience to have a

definite view. My need (as a field botanist) from a classification system is that it accurately portrays evolutionary relationships of taxa which reflect what can be seen “on the ground”.

To the issue at hand. The New Zealand *Hebe* and related genera (*Parahebe*, *Leonohebe*, *Heliohebe*, *Chionohebe*, etc) have a long taxonomic history. The (predominantly) New Zealand genus *Hebe* (as a member of the Scrophulariaceae) probably became entrenched in the New Zealand botanical world subsequent to a revision by Cockayne and Allan (1926) and with the publication in 1961 of Allan’s Volume 1 of the Flora of New Zealand. Prior to this *Hebe* and related genera were included in the primarily Northern Hemisphere *Veronica*. Polyphyly (inclusion of members not related to the bulk of the group) of the Scrophulariaceae became apparent following genetic examination in the 1990’s and resulted in the transfer of many genera to new families, including *Hebe* to Plantaginaceae. At this time, attention, both in New Zealand and overseas, was focussing on *Hebe* s.l., *Veronica*, and other genera in the tribe Veroniceae of the Plantaginaceae, and were reporting difficulties because of polyphyly in some of the genera as currently circumscribed. As a potential resolution it has been proposed by Albach et al. (2004) and the authors of this paper that the genus *Veronica* be

enlarged to include other related genera, including *Hebe*. The reviewed paper provides the new name combinations for New Zealand species under *Veronica*.

There are alternatives, and these are discussed in this paper and Albach et al. (2004). The alternatives, which would minimise paraphyly (the construction of a genus containing species that are evolutionarily less related), are either retaining *Hebe* as currently circumscribed, which would then require the splitting of other genera, particularly *Veronica* and *Parahebe*, into new genera, or recircumscribing *Hebe* to include *Parahebe*, *Heliohebe*, *Chionohebe*, *Leonohebe* and possibly the Australian genus *Detzneria* and some Australian *Veronica* species. This action would also require *Veronica* to be split into several genera.

My feeling, on reading these two papers, is that insufficient consideration has been given to the alternatives. Many of the considerations given against the alternatives seem to me to be primarily anthropocentric.

- The main argument against retaining *Hebe* is that any of the other alternatives would require splitting the existing *Veronica* into “many” (c. nine) small genera and considerable nomenclatural disruption. However, nine new genera and c. 150 new species names generated as a result of “moderate” splitting of *Veronica* is not a major difference than the 66
- new species combinations merging nine genera as proposed in this paper (with more merging and renaming to come in the other Southern Hemisphere genera). Also, as Albach et al. (2004) state “Reclassification and renaming of taxa has been so common in the past ... that hardly two floras agree as to the circumscription of any medium- or larger-sized genus ...”. This seems to me (other factors being equal) to be an argument for keeping the size of genera smaller.
- Such a splitting would “affect all major floras of the world” (reviewed paper, p. 573). This statement is apparently made because of the pervasiveness of weedy species as well as the argument made above. I am unsure of the number of species or floras affected. Regardless, taxonomic change is an ongoing process as classifications are refined based on new information. Authors of new flora dealing with exotic species would draw heavily, I presume, from the current taxonomic treatment over a genera’s natural range.
- Morphologically similar species would be placed in different genera. I suppose this is opposed to morphologically dissimilar species being placed in the same genus? I also suppose that these similar species were judged sufficiently distinct morphologically in previous classifications to deserve their specific status?

- There would be less nomenclatural disruption to horticulturally or agriculturally important species. I am sorry, but I give more weight to having a classification system that reflects evolutionary relationships than the need of a farmer for a herbicide (Albach et al. 2004 p. 433).
- No single morphological character can be used to separate genera and this would also make construction of single character keys difficult or impossible. However, as Albach et al. (2004 p. 433) themselves state, this is not imperative, and there are examples in the recent taxonomic literature where tables of characters or multi-character keys are used (e.g., Heenan 2007). A key alone does not necessarily have to group evolutionarily related species together *contra* the suggestion of Albach et al. (2004, p. 433). Keys are primarily constructed to allow ease of identification of the component taxa.

I also think the argument that merging *Hebe* with *Veronica* will encourage comparison of related species and will make biogeographic patterns clearer is misleading. I feel that a homogenised *Veronica* will obscure species relationships (as Albach et al. 2004 p. 433 hint) and that biogeographic pattern (including the recent and rapid diversification of much of the New Zealand flora) would be better represented by a classification similar to what we have currently.

The advantages of retaining *Hebe* (which probably would need to be recircumscribed to contain species in *Heliohebe*, *Chionohebe*, etc at section rank, and which would entail finishing Wagstaff and Garnock-Jones' (2000) Garnock-Jones and Lloyd's (2004) taxonomic treatments of *Parahebe* and *Chionohebe*) would keep evolutionary relationships clear, particularly in the Southern Hemisphere, and presumably in the Northern Hemisphere.

Finally, like many taxonomic issues, it is up to users to decide which scheme to adopt. In this particular case, and considering the importance of *Hebe* species in New Zealand, I think it is important that botanists do adopt a position. If we do not, then important further work (such as further taxonomic consideration and conservation priority-setting exercises based on taxonomic distinctiveness values) may be downgraded. There will also be considerable confusion, with some New Zealand authors using *Veronica* and others using other versions of *Hebe/Parahebe/Leonohebe* etc. To this end, I have given right of reply to the authors of this reviewed paper.

Other botanical societies are also critiquing this paper, and the authors are currently developing a rebuttal to these (which will also be published in the *Botanical Society of Otago Newsletter*). Two of the authors of the paper, Phil Garnock-Jones and Dirk Albach, have offered the following comments in the interim:

“Cladistic taxonomy is about classifications that align with biological reality; it also is a method that’s objective and testable. Monophyly has been defined in different ways. We think the clearest is that only in a monophyletic group is every member more closely related to any other member than it is to any species that is classified outside the group. This side-steps futile discussions about ancestors [Brummitt and others’ argument - Ed.]. Cladistic classifications are about trying to circumscribe groups so that they align with the natural relationships that are the real products of the evolutionary process. Such groups will always be monophyletic.

In taxonomy generally, there are two areas of disagreement:

1. Some people are happy to recognise groups that are morphologically distinctive even if they're not necessarily monophyletic. This can lead to groups that are recognisable but don't reflect relationships. Dick Brummitt and others seem to be of this view. Our paper argues that *Hebe* and *Veronica* aren't as different as people might believe, so even if one didn't care about a phylogenetic classification, it would be near impossible to define *Hebe* and *Veronica* on anything other than where they grow.
2. But even when people agree that all groups should be monophyletic there is still no objective solution to questions about rank. So for *Veronica* we could have one large

genus (as we propose) or that same group of species could be recognised at a higher rank and include many small genera. In both cases we would have groups that were all monophyletic. Our view is that overall we have chosen the least disruptive course in a world sense, although it is a big change for New Zealanders.

In regard to some of the statements made in the review, it is not just because of the weedy species, but because *Veronica* is distributed naturally across the whole Northern Hemisphere that retaining *Hebe* would affect all major floras. Admitted, the weedy species make it much worse. The 66 species affecting New Zealand and Australia noted by the reviewer is still much less than 150 species with a worldwide impact and the argument for or against small genera is possibly misleading when hardly two floras agree on whether small genera are accepted or not. The impact on horticulture, etc, is a secondary consideration. That is why our first choice was for monophyletic taxa only, and only when we decide between two possible classifications reflecting evolutionary relationships do we allow the argument of what gives less disruption to the use outside of science. A consideration is also that practical people often take exception to biologically-based taxonomic changes that are inconvenient.

I [Garnock-Jones] would also like to add that this isn't only based on molecular data. That the *Hebe* complex is nested within *Veronica* has been



suspected on morphological grounds for a long time. I've been aware of it since my PhD thesis on *Parahebe* in 1975 and my morphology-based cladistic study published in 1993. Peter Raven's review of New Zealand subalpine and alpine plant origins (1973) implied it too. My thesis abstract said: "It is suggested that *Parahebe* evolved from *Veronica* and that *Detzneria*, *Hebe* and *Pygmea* [now *Chionohebe* – Ed.] are specialised derivatives of a *Parahebe*-like ancestor". However, molecular data give the best resolution for tree-building, and we have the same result using independent molecular markers.

The Australians are having a similar discussion right now over *Dryandra* being included in *Banksia*; also previously *Azalea* was sunk into *Rhododendron*, and of course this is happening a lot with families (Ericaceae/Epacridaceae; Lemnaceae/Araceae)."

Phil has also provided a table that provides the equivalent proposed names in *Veronica* with those in *Hebe* etc and which can be worked in either direction. This is available on the BSO website at <http://www.botany.otago.ac.nz/bso/veronica.pdf>

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Please note: I have not perused or cited all papers relevant to this large topic.

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## Nominations for Important Plant Areas of Otago

*Mike Thorsen*

In the last issue of the Newsletter nominations were sought for areas in Otago that could qualify for Important Plant Area (IPA) status (see [http://www.nzpcn.org.nz/important\\_plant\\_areas/index.asp](http://www.nzpcn.org.nz/important_plant_areas/index.asp) and <http://www.plantlife.org.uk/international/plantlife-ipas.html>). In brief these are areas that are important in a global or regional context either for threatened species, their diversity of plant species, the presence of significant botanical communities, or are of cultural importance (e.g., a site for harvest of food).

To date there have been five nominations received. These are:

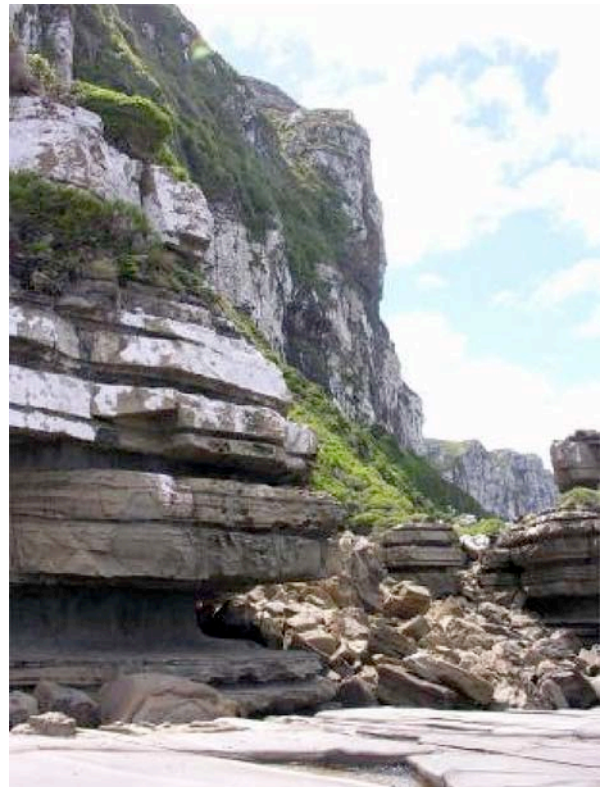
### *Dunedin volcanic peaks*

This includes the summits of Flagstaff, Swampy, Mt Cargill and Mihiwaka. These sites have unusual botanical communities of ombrogenic (cloud-formed) wetlands, and subalpine vegetation at an unusually low altitude. Several threatened species are known from these sites. These sites are culturally important as they were often the sites used by early botanists when the NZ flora was being described and also because of their long association with scientific studies. Because of their proximity to Dunedin, they are heavily used by many people for recreation.

### *Otago Peninsula vegetation remnants*

The Otago Peninsula has many distinctive plant communities, particularly those associated with coastal cliffs and bulk-deposition sands

(e.g., sand from Sandfly Bay is deposited atop 320 m Sandymount, or forms extensive sand plains at Okia Flat and Allans Beach). The semi-saline Tomahawk Lagoon, as well as Hoopers and Papanui Inlets are notable because of their intactness and botanical communities. There is one endemic, the Cape Saunder's rock daisy (*Helichrysum selago* var. *tumidum*) only found on the Peninsula. Several threatened plant species are known, including most of the remaining mainland populations of Cook's scurvy grass. Many other species have become extinct in the past 100 years making it an obvious site for ecological restoration projects (of which there are already several).



Purakanui Bay, Catlins. Photo: Mike Thorsen



Mt Cargill and Otago Peninsula. Photo: Mike Thorsen

### *Catlins*

The Catlins has diversity of plant communities from coastal turfs, some of the few remaining sand dune totara forests, frost-flat shrublands, wetlands and the southernmost beech forest in New Zealand. This site houses a multitude of threatened species including the tree daisy *Olearia hectorii* and recently discovered populations of heart-leaved kohuhu *Pittosporum obcordatum* and *Coprosma pedicellata* which give hope for further discoveries in this relatively unexplored wilderness.

### *Macraes-Nenthorn*

This site has possibly one of the highest diversity of threatened plants of any area in New Zealand. Around 40

species at this site are considered threatened, at risk, or locally significant. There is also a very high diversity of plants with 355 taxa currently known from the area. This diversity is probably because the area is at a boundary between the floras of the northern Kakanui Mountains, the western dry Central Otago, the moist eastern coastal Otago, and the southern broadleaf/beech forests. The site has a long cultural history with some moa hunting sites and Maori tool manufacture sites as well as gold mining relicts and an old township.

### *Old Man and Old Woman Ranges*

The Old Man and Old Woman are two contiguous Central Otago block mountain ranges that contain a



stunning diversity of plants with over 400 species recorded so far. The tops of these ranges have remarkably few exotic species because of their high altitude. The alpine cushionfields are extensive, as are the seepage wetlands and blanket bogs. Around 13 threatened plant species are found on these ranges.

There are obviously many more sites in Otago deserving of recognition as an IPA and we still want to receive more nominations for sites that you think might be important. Don't worry if you

know very little about the site, we will collate information to support nomination for each of the sites from as many people as we can (so people, keep in mind that information you may have tucked away in notebooks somewhere!). To nominate a site just email me [mike.esr@xtra.co.nz](mailto:mike.esr@xtra.co.nz) with the name of the site and any details you know about it (or a brief summary, if you know a lot about it) and it will be considered as an IPA.



Okia Flat sand plain. Photo: Mike Thorsen

### *Claytonia/Neopaxia/Montia*

*Mike Thorsen*

For those of you who had just got used to the new species of *Neopaxia* (formerly *Claytonia australasica*), these have now been transferred by Peter Heenan (*NZ J. Botany* **45**, pp. 437-439) to *Montia* following a

revision of the Tribe Montieae. The Otago species are now *Montia sessiliflora* (G.Simpson) Heenan and the rarer *Montia angustifolia* Heenan (the new name for *Neopaxia lineariifolia* Heenan).

## Meeting and trip reports

### Coastal Delights at Sandymount 04/08/2007

*Kate Barnard*



David Lyttle on the top of Sandymount.

Leaving the outskirts of a windy, grey Dunedin in the company of Bradley and May we arrived to find a small cluster of other folks; David, Alf and Bex, waiting at an even more misty and breezier Sandymount car park. Just a couple of metres from the cars we stopped to look at a rib of rock colonised by a variety of different lichens, a small cluster of *Raoulia tenuicaulis*, and *Geranium sessiliflorum* var *arenarium*. As we explored this area, the final member of

our group arrived, and with Verity making up our small band we set off towards the rocky bluffs to the southwest of Sandymount. With my minimal knowledge of New Zealand native plants, even the common plants were new to me and it was great to get a variety of plants pointed out to me on the way, though the combination of Latin, English and Maori names made my brain spin at times. These included: *Tetragonia implexicoma*, *Coprosma*

*propinqua*, and frost damaged *Solanum laciniatum*.

Still in and out of the clag we arrived at the top of what looked like a very steep slope. Having never been on a botanising trip before, I didn't realise that the abilities of a mountain goat were such an important skill. Alf disappeared down the slope remarkably quickly and the rest of us followed slightly more carefully. The statues of *Coprosma* sp. made an amazing spectacle in the misty conditions. *Carmichaelia virgata* added a spiny green to the scene, with the bright orange branchlets of *Coprosma virescens* providing a colourful contrast. As we climbed back to the top of the slope and headed back towards Sandymount the cloud lifted, giving us fantastic views of breaker filled beaches to the south, and the cliffs of Lovers Leap to the North.

We headed back along sandy paths to the summit viewpoint, coming across an attractive patch of *Coprosma acerosa* on the way. On the top of Sandymount, with the cloud still high, we could see back to the bluffs that we had visited. The differences in canopy shape and cover between this untouched vegetation and the surrounding regenerating bush were obvious from a distance. Retracing our steps we then made for the trail to Lovers Leap. On the way we saw what I thought was the oddest plant of the day. Used to seeing the large architectural *Gunnera manicata* in woodland gardens in Western Scotland, the sight of the tiny fruiting

*Gunnera monoica* on a wet bank was quite a contrast. After admiring the view to the sea and the basalt cliffs from the viewing platform we scrambled up through grassy tussocks to a rib of rock where there were amazing clumps of the local endemic, *Helichrysum selago* var *tumidum*. These were my favourite plants of the day, the dark green scales perfectly outlined in silvery white. With grumbling stomachs we then headed back to the car park to find a sheltered spot for lunch.



Bradley on the top of the steep, mist shrouded bluff.

After lunch, with low cloud and drizzle threatening again, we headed towards the entrance of the reserve to explore the kanuka forest. The sharp eyes of Alf spotted the first *Drymoanthus flavus* on *Myrsine australis* in the crook of branch. On past another twisted *Melicytus ramiflorus* and a wind bent cluster of *Podocarpus totara* some more orchids were found clinging to kanuka branches. With this find, and the more insistent rain dripping though the canopy, we decided to call it a day.



## Botanical Society of Otago Field Trip to Sandymout 4<sup>th</sup> August. Provisional species list for Sandymout

David Lyttle

Trees shrubs and vines

*Carmichaelia virgata*  
*Clematis foetida*  
*Clematis paniculata*  
*Coprosma acerosa*  
*Coprosma crassifolia*  
*Coprosma propinqua*  
*Coprosma rhamnoides*  
*Coprosma rotundifolia*  
*Coprosma virescens*  
*Cordyline australis*  
*Coriaria arborea*  
*Coriaria sarmentosa*  
*Corokia cotoneaster*  
*Cyathodes juniperina*  
*Fuchsia excorticata*  
*Fuchsia perscandens*  
*Griselinia littoralis*  
*Hebe elliptica*  
*Hebe salicifolia*  
*Helichrysum intermedium* var.  
*tumidum*  
*Helichrysum lanceolatum*  
*Hoheria angustifolia*  
*Kunzea ericioides*  
*Melicope simplex*  
*Melicytus ramiflorus*  
*Muehlenbeckia australis*  
*Myrsine australis*  
*Olearia arborescens*  
*Olearia avicennifolia*  
*Olearia fragrantissima*  
*Ozothamnus leptophyllus*  
*Parsonsia heterophylla*  
*Pittosporum eugenioides*  
*Pittosporum tenuifolium*  
*Podocarpus totara*  
*Pseudopanax crassifolius*  
*Pseudowintera colorata*  
*Ripogonum scandens*

*Rubus cissoides*  
*Rubus schimdelioides*  
*Rubus squarrosus*  
*Solanum laciniatum*  
*Tetragonia implexicoma*  
*Urtica ferox*

Herbaceous plants

*Acaena anserinifolia*  
*Acaena novae-zelandiae*  
*Acaena juvenca*  
*Anaphalioides bellidioides*  
*Anaphalioides hookeri*  
*Astelia fragrans*  
*Brachycome radicata*  
*Carex secta*  
*Colobanthus muelleri*  
*Cordateria richardii*  
*Desmoshoenus spiralis*  
*Dichondra repens*  
*Drymoanthus flavus*  
*Geranium microphyllum*  
*Geranium sessiliflorum* var. *arenarium*  
*Gunnera monoica*  
*Helichrysum filicaule*  
*Hierochloe redolens*  
*Hydrocotyle* sp.  
*Isolepis nodosa*  
*Leucopogon fraseri*  
*Libertia ixioides*  
*Luzula banksiana* var. *acra*  
*Microtis unifolia*  
*Phormium tenax*  
*Poa astonii*  
*Poa cita*  
*Raoulia glabra*  
*Raoulia tenuicaulis*  
*Schizeilema trifoliatum*  
*Scleranthus brockiei*  
*Thelymitra longifolia*

*Wahlenbergia gracilis*

Ferns

*Asplenium appendiculatum*

*Asplenium bulbiferum*

*Asplenium flabellifolium*

*Asplenium flaccidum*

*Asplenium hookerianum*

*Asplenium lyallii*

*Asplenium obtusatum*

*Blechnum* sp. kiokio\*

*Blechnum blechnoides*

*Blechnum chambersii*

*Blechnum fluviatile*

*Blechnum penna -marina*

*Dicksonia squarrosa*

*Hypolepis ambigua*

*Microsorium pustulatum*

*Polystichum neozelandicum* ssp.  
*xerophyllum*

*Polystichum vestitum*

*Pteridium esculentum*

*Pyrrosia eleagnifolia*

*Dryopteris affinis* new record for the  
Otago Peninsula (adventive)

### Catlins weekend 15-16 September 2007

*Daniela Serra*



Robyn leads the troops up past wind-shorn coprosmas at Nugget Point on the Catlins weekend. Photo: John Barkla.

During the weekend of the 15<sup>th</sup> and 16<sup>th</sup> September, I had the great opportunity to make a trip to The Catlins, situated in the south-eastern corner of New Zealand. This excursion was organized and led by John Barkla. The trip was remarkable; there were 13 people in our group. John was a great guide, wise, friendly and very patient. He professionally guided us along all the trekking paths, where we sighted many

interesting plants. John was able to tell us their botanical names and some of their curious characteristics, like the pepper tree that we tasted or the *Coprosma foetidissima* with its overpowering odour. The spots we visited were beautiful and we were fortunate to have an incredibly sunny weekend. We started our journey by visiting Papatowai and then crossed a dense green forest. The trail meandered



across beaches and little lagoons with golden sand and clear water. We finally reached a large, magnificent beach framed by dunes on either side. This was an excellent location to have lunch, after which we explored all the interesting rocks and geological formations.

From Papatowai we travelled on to Nugget Point where we saw the yellow-eyed penguins. On the way to Nugget Point we stopped in a shop to eat some delicious ice creams. We spent the night here at the DOC's house that is near a lighthouse. The accommodation was very comfortable and afforded a stunning view of the top of the hill.

The next day we also experienced fine, sunny weather. Our morning began with a walk to the lighthouse; on the way we heard the beautiful song of a blackbird. The group enjoyed a climb back to the house; the view was incredible, green hills in the background and cliffs on both sides of the hill. Small islets were visible in the distance and the plants were almost in bloom. Our last stop was Cannibal Bay where we saw male sea lions; four of them were relaxing on the beach! We ended our remarkable journey with a refreshing and revitalising swim before heading home.



Sandy scrawls at Cannibal Bay. Photo: John Barkla.



Nugget Point. Photo: John Barkla.

### **The private life of NZ alpine plants - A talk by Mascha Bischoff on 26 Sept 2007**

*John Barkla*

Mascha is a PhD student studying the pollination of alpine plants on the Remarkables Ski field. After getting down to basics – it's all about plants having sex – we were introduced to the myriad of terms used to describe the main pollination types. After discussing the primary literature Mascha then talked about her PhD case study and in particular three main questions she is investigating – (i) do alpine plants in NZ depend on pollinator services at all (ii) are alpine pollination systems in NZ entirely generalised and (iii) do pollinators differ in their performance?

Her work so far involves pollinator exclusion trials, intensive visual observation, and capturing key insects, but in the future will extend to analysis of pollen loads, pollinator behaviour,

and understanding interaction patterns. Intriguing preliminary results suggest some plants are more attractive to insects than others and many species receive more than half their visits from just one class of visitors.

Working in the alpine zone is not without its frustrations and Mascha explained the difficulties that fickle alpine weather causes her. Insect activity abruptly ceases when the sun goes behind a cloud to say nothing of snowfall, strong wind, hares and inquisitive humans! Other problems included the burglary of her car and the loss of important data and equipment. Despite these setbacks Mascha remains enthusiastic and her many stunning pictures might just have encouraged some new field assistants from the audience!



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Please submit copy for next newsletter to David Orlovich by 15 February 2008

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