Hi everyone, I hope you all had a relaxing break. I spent my holiday working in the eastern Bay of Plenty, near Opotiki. I had a bit of time to explore the hills and Bush of the Raukumara Ranges. I also took the opportunity to visit a place that is very high on my list of important plant places in New Zealand, The National Arboretum (Living Tree Museum) at Ngatapa, near Gisborne. The arboretum has a spectacular collection of over 1300 different plant species, with some of the plantings being nearly 100 years old. It covers an area equivalent to a small farm and is well worth a visit at any time of year, but especially in either Spring, when the new leaves are coming out, or in Autumn with all the colored leaves. I highly recommend you visit it if you are ever in the Gisborne area.

Write me an article about anything botanically related that you did in your holiday!

Cheers, Rowan
Carmichaelia crassicaulis is one of those plant species that probably goes almost completely unnoticed, as they look like dead twiggy bushes to most people, but if you look at them a bit closer they do show some signs of life. The genus *Carmichaelia* is named after Captain Dugald Carmichael, an 18th century Scottish army officer and botanist who collected plants in New Zealand. *Crassicaulis* means thick-stemmed and refers to the plants thick, woody, photosynthetic stems.

*C. crassicaulis* is a stout grey-yellow green shrub which can grow to approximately 2m in height. The adult plants have almost no leaves, but instead photosynthesize in their stems. The stems are covered in linear grooves full of short white hairs. The loss of leaves and hairiness may be adaptions to dry environments by reducing water loss through leaves and allowing the stems to respire while conserving water due to reduced airflow over the haired groove surfaces. The species grows in arid eastern parts of the South Island and can survive up to altitudes of 1300m. Despite this species’ usually drab appearance, when in flower it actually looks quite spectacular. The flowers are purple and white and look similar to pea flowers, and can be produced in such profusion that they cover the whole plant. The seed pods usually contain only one seed per pod.

The Carmichaelias are referred to as the New Zealand brooms as all species in this genus live in New Zealand, except one, *C. exsul*, which lives on Lord Howe Island (600km east of Australia). As Lord Howe Island was probably connected to the current New Zealand landmass by the now submerged Lord Howe Rise relatively recently in geological time, it is not surprising that it shares this genus with New Zealand. Some Carmichaelias are grown commercially as ornamental garden plants, but not the boring old *C. crassicaulis*. All Carmichaelias are legumes, and as such can fix atmospheric nitrogen, due to their symbiotic relationship with the nitrogen fixing bacteria *Rhizobium*, which live in root nodules on the plant. This allows them to live in nitrogen poor areas.

To see *C. crassicaulis* in its natural habitat it can be seen in the hills and mountains around Central Otago and the Mackenzie Basin. I haven’t seen it in the botanic gardens but as it is so easy to miss it may be there?

‘Happy plant hunting,
Rowan Hindmarsh-Walls’
In The Sub-Antarctics

Lorna Little is completing a PhD in Botany in the field of flower colour in plants of the Arctic and sub-Antarctic. Her research took her to New Zealand’s sub-antarctic Campbell Island.

Campbell Island is the most southern island of the New Zealand Sub Antarctic region. In the Furious Fifties (at 52°S), the common weather is cloudy, windy and often raining. Our team experienced the full range – beautiful sunny days, high winds blowing us off the track, low cloud with no visibility and two days of snow, all during our trip in Nov-Dec 2010.

We were down there to investigate breeding systems of the Sub Antarctic Megaherbs – Pleurophyllum speciosum, Anisotome latifolia, Bulbinella rossii – to name a few. This was accomplished by trekking up and down the boardwalk, bagging flowers and watching for pollinators, with nets at the ready to catch the insects in the act.

Working at the bottom of the world is not without excitement – to get there we spent three days on the Tiama, which inducted us into the Southern Ocean swell. Off track adventures often led to chance encounters behind bushes with beach master sealions - certainly gets the heart pumping! Watching the Southern Royal Albatross cross the boardwalk before waddling to the top of Col Lyall was hilarious, as was being blown down the slippery boardwalk during high winds and fog.

During bad weather it was almost serene to clamber through Dracophyllum forests and sitting around the diesel stove with a hot buttered scone was an excellent way to combat the cold – all up it was a very full two weeks that culminated in enjoying the naval hospitality on the HMS Otago for the trip back to Dunedin.
With what started as an idea shared over coffee, the Botanical/Ecological Undergraduate Research Group is now in full swing. We are a small group of students keen to escape the restrictions of the city and gain some practical experience in our field. As a group we are driving our own project and are in the process discovering the thrills and trials of ecological research. We have recently returned from a second field trip to the Catlins where we are measuring species diversity and distributions over a raised bog. Before this project I had never seen a bog and imagined them to be simply wet, muddy and uninteresting. However, after a few hours in this isolated oasis, my impressions were changed completely and a fondness for the area ensued. Lenz bog is particularly interesting because it comprises entirely native species (of which I am steadily becoming better at identifying)! At present, we are about halfway through our sampling. After completing the rest of the field work we plan to write a full scientific paper(s) for publication while promoting the value and conservation of New Zealand wetlands. I am also planning on presenting our research at the 2011 John Child Bryophyte and Lichen Workshop in Matawai, 70km north of Gisborne. Are you interested in joining us? We are always looking for other keen undergraduate students at any level who want to develop their own ecological and botanical skills and stand out from the masses. Have a chat to us if you see us around (we’re usually lurking around the botany department) or express your interest via Green News. Either way we’d love to hear from you!

Extra-curricular Activities

Kelly Frogley is in her third year of an Ecology major, with a minor in TESOL (Teaching English to speakers of other languages). She is part of the Botanical/Ecological Undergraduate Research Group.

Aimee Pritchard and the perils of bog splodging.

The group on site, Kelly, Aimee and Wen Han Bong. (Photos: John Steel)
UPCOMING EVENTS

July
17th  BSO Field Trip
Woodhaugh– Ross Creek Track Network.
10.00 am, Contact John Barkla, phone: (03) 476 3686.

21th  John Smaillie Tennant Lecture
How many species will survive the 21st century
Peter H. Raven, President Emeritus, Missouri Botanical Garden
6.00pm, St David Lecture Theatre.

August
6th  BSO Field Trip
Akatore Coastline
9.00 am, contact Robyn Bridges, Ph: (03) 479 8372.

10th  BSO Meeting and Talk
More than megaherbs: 200 years of vegetation change on subantarctic Campbell Island
Alex Fergus
5:30pm, Zoology Benham Seminar Room.

Photos

Sea-Lion, Perseverance Harbour, Campbell Island.
(Photo: Lorna Little)

Eastwoodhill Arboretum, Gisborne, New Zealand
(Photo: Rowan Hindmarsh-Walls)

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