AUSTRALASIAN BRYOLOGICAL NEWSLETTER

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IN THIS ISSUE

From the editor

Vale Elizabeth Brown

Everyone in the international bryological community will have been saddened by the news of the death of Dr Elizabeth Brown, after a short illness. A special edition of the *Newsletter* commemorating Elizabeth and her life's work is being prepared for publication. If you would like to contribute to this edition, please contact myself or Alison Downing at the email addresses below. The absolute deadline for copy is Friday, January 24.

David Meagher — dameag+unimelb.edu.au

Alison Downing — alison.downing+mq.edu.au

[Please replace + with @ when emailing; this is a security device to prevent trawling-generated spam.]

Back issues of the *Newsletter*

Back issues of the Newsletter starting from no. 42 are available on the UTAS website (see the back page for details). In the next few months, further back issues will be added in order to make these previously print-only issues available to everyone.

New dates for regular issue

Commencing from this issue, regular issues of the *Australasian Bryological Newsletter* will be published twice yearly, in June and December. Deadlines for copy will be 31 May and 30 September respectively.

Publications in Australasian bryology 2013

I had intended to include a listing of 2013 bryological publications relevant to our region in this newsletter. Unfortunately I have been unable to complete the list in time for this issue, so it will be included instead in the June 2014 issue. Anyone wishing to include publications in the list should send the details to me at the email address given on the last page.

Bryogear

The review on page 11 is the first in what I hope will be a continuing series of reviews of equipment of interest to bryologists. Anyone with a review of equipment is welcome to submit it, with the proviso that they, their family or any business interest they might hold do not stand to gain financially or materially as a result of the publication of the review.

— David Meagher

IAB field trip, Snowdonia National Park, 20–26 July 2013

Alison Downing[1] and Pina Milne[2]
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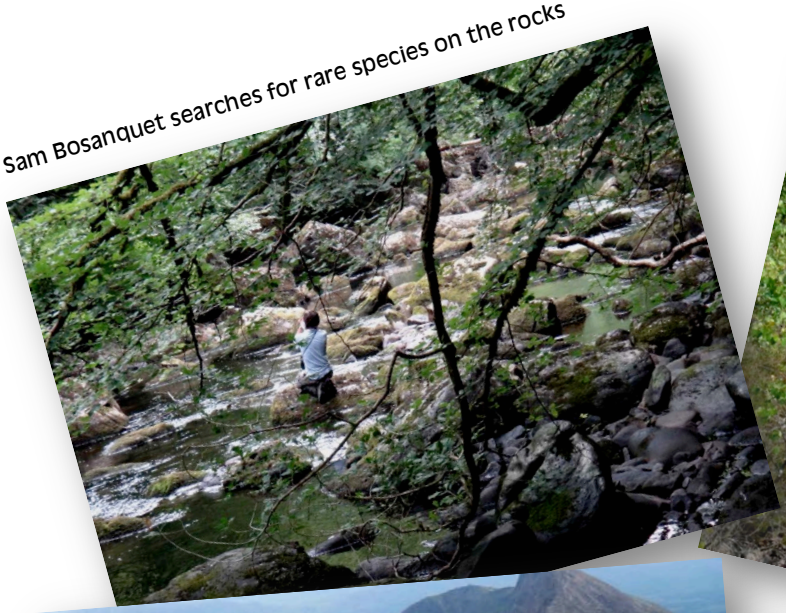
The rugged mountains of North Wales are quite remarkable, given that they are only a few hours' drive from London and a far cry from our eucalypt woodlands and forests of Australia. However, in addition to the alpine meadows, boulder fields and precipitous, rugged cliffs of Snowdonia National Park, North Wales has forested valleys with fast flowing streams and waterfalls, an abundance of stone walls and slate roofed cottages, coastal saltmarshes and sand dunes and rich Atlantic woodlands, all treasure troves for bryologists.

We travelled to Wales with two clear purposes in mind: firstly to collect vigorous and abundant bryophyte species that may, in the future, become invasive species in Australia; and also to collect, if possible, named taxa of Brachytheciaceae, a family that we find particularly challenging. However, this was not what ensued! Jeff Duckett (IAB and BBS) and Sam Bosanquet (Natural Resources Wales & BBS) had other plans and made sure that we all had the opportunity to assemble an extraordinarily comprehensive named collection of bryophytes, including many genera and species, sometimes even families that we had never seen before. Our hosts also made sure that we had opportunities to view some of the most spectacular, beautiful and historically interesting scenery of North Wales.

Our first day in Wales — Lars Soderström, Jeff Duckett and Sam Bosanquet

We stayed at the Swallow Falls Hotel, an iconic lodge in a steep valley just a few kilometres from the village of Betws-y Coed, arguably the most beautiful village in Wales and located in Snowdonia National Park. Our first outing took us to a valley perched just above the main road, with scattered deciduous trees, mostly oak, hazelnut and ash and pasture grazed by sheep and cattle. In Australia, we would have doubted that such a site could be so productive, but we retrieved numerous species, from tree trunks and branches, from exposed boulders and from a *Juncus*/*Sphagnum* bog full of insectivorous plants and orchids. Here we saw *Pellia neesiana* for the very first time, and fruiting material of *Sphagnum rubellum* and *Diphyscium foliosum*. We were pleased to meet Des Callaghan of whom we had heard so much through Bryonet and the BBS. Our second day saw us walking or scrambling downstream along Afron Llugwy from Swallow Falls, where we collected a raft of species in a mixed forest of natural oak and ash together with exotic larch, oregon and chestnut, with an understory of hazelnuts, blueberries and ivy. We clambered up the heights above the stream through pine woods and silver birch groves to collect the rare metallophyte *Ditrichum plumbicola* from mullock heaps of ancient lead mines. There were few bryophytes or lichens with the exception of our own feral *Campylopus introflexus*.



Sam Bosanquet searches for rare species on the rocks

Search for *Ditrichum plumbicola* on mullock heaps of historic lead mines

View from the top of Mount Snowdon

View into the valley from near the top of Mount Snowdon

Lars Soderström, Ria Mitchell and Malcolm Watling in the coastal Glaslyn saltmarshes of Porthmadog

Haplomitrium hookeri at the edge of Llyn Idwal

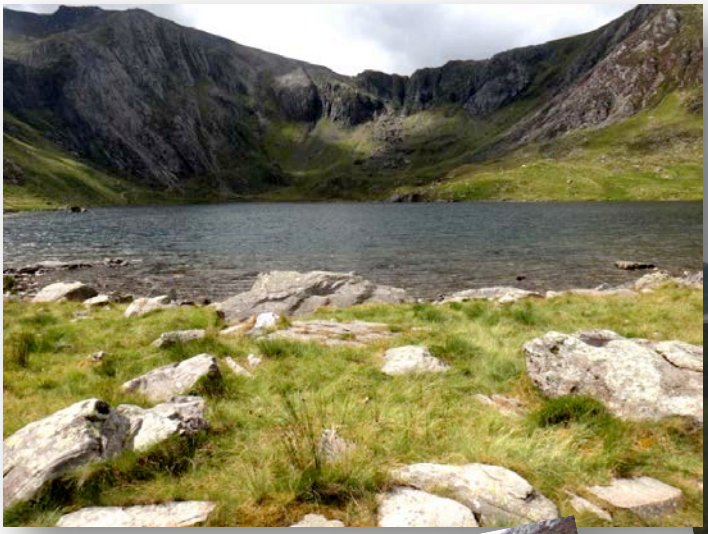
Before the IAB conference we had both dreamt of climbing Mount Snowdon (in Welsh, Yr Wyddfa) and were not disappointed in the day that our hosts had planned for us. Pina departed with Jeff, Sam and the young and intrepid to walk, climb and scramble through two rocky and challenging cwms (valleys) to a high, glacial lake surrounded by alpine meadows rich in *Sphagnum* spp. and scattered patches of *Polytrichum commune*. Alison chose the easy way, train to the summit with Janice Glime, her sister Eileen and friend Kim. Both excursions were rewarding, Pina returning with a magnificent collection of alpine species, Alison with two collections, one from the very summit (1006 m asl), another from the woodland (about 100 m asl) surrounding Dolbadarn Castle, on Llyn (Lake) Peris adjoining the village of Llanberris. It may seem strange that the mountains of North Wales have alpine meadows at such a low elevation. Think of it this way, Snowdonia National Park is 53°N whereas the southern tip of Tasmania is 43°S, and even Stewart Island, off the southern tip of the South Island of New Zealand is only 46°S. In other words, Snowdonia is so far north that even a small increase in altitude generates alpine/arctic conditions. This was confirmed by BBS member Malcolm Watling, who very kindly joined us for most of our Welsh outings. According to Malcolm, even in summer the conditions can change rapidly to extreme cold, rain, sleet and even snow, accompanied by high winds. Mountain rescue services, particularly helicopters, are called out every week to rescue climbers and walkers. In fact, even that day a climber with a broken leg was airlifted to Llanberris. Wales has the highest rainfall in the British Isles, approximately 4500 mm each year.

The coastal salt marshes of Porthmadog were a marked contrast to the green pastures and wooded valleys of Betws-y Coed, the alpine meadows of Snowdonia and the massive slate quarries that scarred the mountains surrounding Blaenau Ffestiniog. We collected from oak trees that bordered the Glaslyn salt marshes and from the low cliffs backing the railway yards of Portmeirion Railway Station. Later in the day our coach dropped us at the edge of dunes under the watch of Harlech Castle. Once upon a time the castle stood at the water's edge, but now the dunes are growing apace and the castle is set way back from the sea. The dunes and dune slacks of Morfa Harlech National Nature Reserve were rich in wildflowers: thyme, golden *Lysimachia*, yellow *Oenothera*, pink and white trailing peas, cerise terrestrial orchids, and *Juncus acutus* with its vindictive leaves, out to punish the unwary and unobservant. We had hoped to collect *Petalophyllum ralfsii* but our searches were fruitless, although we did find treasure in the form of *Tortella* and *Syntrichia* species.

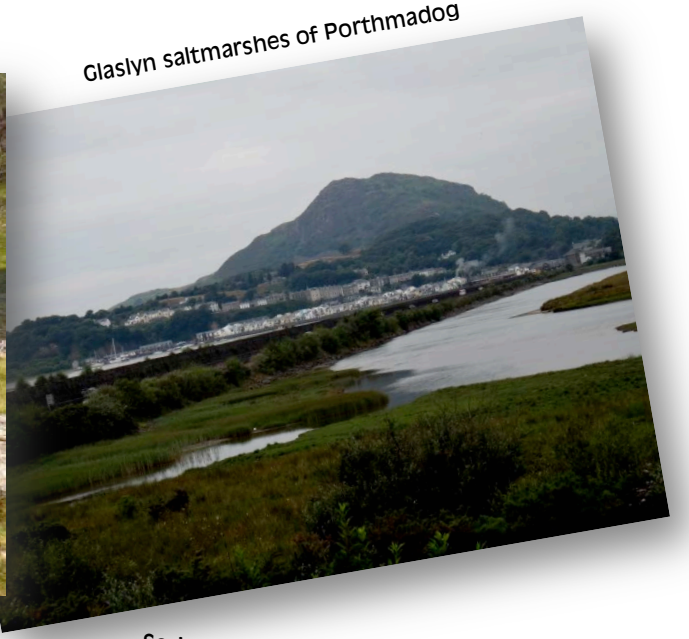
We spent an idyllic day in the alpine meadows of Cwm Idwal National Nature Reserve. A short walk between the sheer walls of a massive split rock and we were among sphagnum bogs, alpine grass and herbfields, heather, and lichen-encrusted boulders. Pina headed in one direction in a group led by Jeff and Sylvia; Alison joined Janice in a second group with Sam as our guide. In this second group we made our way steadily uphill until the beautiful glacial Llyn Idwal (Lake Idwal) appeared before us, encircled by massive cliffs of grey rocks, boulders tumbled onto the steep, grassy slopes below. We scoured the banks of icy streams at the lake's edge for the ever-elusive *Haplomitrium hookeri*. There was an 'eureka' moment when a small clump was finally located by Sylvia! Once more the young and intrepid (including Pina) scoured the rocky cliffs of the Devil's Kitchen, while Alison and Janice took a more leisurely track back to the road.

Our hosts had yet another gem planned for our last day of field work. We travelled to an exquisite patch of Atlantic woodland of oaks, ash and hazel in Coed y Rhygen National Nature Reserve (NNR) where we were met by Doug Oliver, the NNR warden. This lovely area is rich in rare bryophytes, including *Plagiochila heterophylla*, *Leptoscyphus cuneifolius* and a genus new to us, *Nowellia curvifolia*. We were astonished to find that a farmer Dai Jones, owner of part of the woodland, works with the wardens of the NNR and uses his sheep to maintain the rich diversity of bryophytes and lichens by allowing the animals to graze the woodland in winter when they eat not only grass, but ivy and brambles.

The exquisite glacial lake, Llyn Idwal in Cwm Idwal



Glaslyn saltmarshes of Porthmadog



Heather on rocky outcrops bordering Llyn Idwal

Serious bryologising on rocks near Llyn Idwal. The weather was fine and warm, long sleeves and hoodies used as deterrents to stop.

Atlantic woodlands

The magnificent rocky amphitheatre that encloses Cym Idwal and Llyn Idwal

There is a magnificent set of images from the field trip, posted by Janice Glime. These can be accessed from a Dropbox folder or from flickr:

https://www.dropbox.com/sh/p2o01giuosc8udy/EF9tGrvfpA

http://www.flickr.com/photos/100093500@N04/sets/72157635011239965/

Our accommodation at the Swallows Hotel was comfortable and good fun. In a land where boutique breweries abound, we were amused to see that in the hot weather many were drinking Australian (Fosters) beer because it is cold! And how can we forget, each evening, Jo Wilbraham's announcement 'Today I have decided that for your evening meal tomorrow you will have the choice of these three meals…'

We would particularly like to thank Jo Wilbraham, Sylvia Pressel, Jeff Duckett and Sam Bosanquet for making us feel so welcome and for organising such a wonderful field trip. We are also most grateful to Jeff and Sam for helping us to assemble a magnificent collection of bryophytes. At the end of the week, we had collected close to 150 species, all named, many taxa that we had never seen before. To put this in context, this accounts for close to 33% of species known from Wales and 15% from the British Isles. On a personal note, we thank Jill Kowal and her family for their very kind hospitality in London on our return from Wales.

Scapania gracilis on a fallen log in oak/ash woodland

Swallow Falls Hotel, Betws-y Coed in Snowdonia National Park

Sam Bosanquet organising the troops for an excursion into the dune slacks of Morfa Harlech National Nature Reserve.

Janice Glime and her sister, Eileen, inside Doldabarn Castle in Llanberris

XIIth Australian Bryological Workshop, Central Mackay Coast, Queensland, 29 June – 4 July 2014

Andrew Franks
O2Ecology

The convenors of the XIIth Australian Bryophyte Workshop are excited to announce that registration is now open. The workshop will be held in the Mackay/Whitsunday region of central Queensland and run from the 29th of June until the 4th of July 2014. Based in the picturesque Eungella area of the Mackay hinterland, a number of sites and ecosystems within the Central Queensland Bioregion will be available for collecting.

Workshop accommodation

Accommodation will be in shared facilities at Quandong Creek Rainforest Lodge, which borders Eungella National Park, approximately 70 km west of Mackay. The lodge sits 880 m above sea level and is nestled within the surrounding rainforest. The lodge provides shared dormitory type facilities with camping areas also available. Each dormitory room sleeps nine in bunk beds. Quandong Creek also has tents and extra bedding available if you wish to have some privacy or peace. A general store is located at Eungella village.

Field trips and collecting

There will be daily field trips to a variety of ecosystems, including upland and lowland rainforest and wet and dry sclerophyll forest. Proposed collecting sites will include Eungella National Park, Finch Hatton Gorge, Crediton State Forest, Mount Blackwood, Conway Ranges, and Cape Hillsborough. A post-workshop trip to Whitsunday Island may also be possible depending on costs and numbers.

Arrival and departure

There are direct flights into Mackay from most capital cities, as well as regular bus and train services. We can pick up people from Mackay airport for transport to Eungella, but there will be limited seats available. Departure will be from Mackay airport on the afternoon of Sunday 29 June. The return to Mackay will be on Friday 4 July, arriving about 1 pm.

Registration fee

An early bird registration of $550/person is available if you register and pay before the 30 April 2014. From 1 May 2014 the regular registration fee of $590/person will apply. The Australian Bryophyte Group provides a discount on the registration fee to a select number of students who wish to attend the workshop. To be eligible you will need to provide proof of your enrolment and give a presentation of your research, either as a poster or as a talk. To apply please email Andrew Franks at the address given below.

How to Register

Please email Andrew Franks at the address given below for a registration form or for further information.

— Andrew Franks

andrew.franks+o2ecology.com.au

NOTE: Replace + with @ to email (this is an anti-spam measure to protect email addresses from trawling-generated spam).

mosses of dry forests

in south eastern Australia

edited by Cassia Read

POLYTRICHUM JUNIPERINUM

Prickly moss

colonies look like a forest of miniature pine seedlings (to 3 cm tall) and are common on exposed soils. ***Leaves*** are sharp, spreading and feel prickly. With a hand lens you can see the leaves appear bordered with shiny strips (these are leaf margins folded inwards); they have a brown/red tip. There's a very broad ***nerve***. ***Capsules*** are common. When immature they stand erect on tall red ***stalks***, and are covered with a light coloured 'woven' hood. Mature capsules resemble tiny, roughly squared drums.

As it dries: the plants look like tiny brown artists' brushes sticking out of the ground. If sprayed with water these rapidly regain their shape and colour.

Similar species: *Dawsonia longiseta* has a dense covering of pink hairs on its hood and a white brush of hairs extending from its mature capsule. *Dawsonia* leaves are not as sharp, and leaf margins are not folded. The shoots aren't as tall as *Polytrichum*.

order your copy today!

THE NORMAN WETTENHALL FOUNDATION

Friends of the Box-Ironbark Forests (Mount Alexander Region)

Connecting Country
Restoring landscapes across Mount Alexander

mosses of dry forests

in south eastern Australia

edited by Cassia Read

Publication date: February 2014

A guide for students and absolute beginners - technically accurate, but free of technical language - this is an attempt to present a little known part of the plant kingdom to a new audience.

forty species are described and generously illustrated, sample page overleaf

The guide contains an introduction explaining the life cycle of mosses and their importance in the ecosystem; tips on how to approach identification; detailed descriptions of common, striking species; and appendices carefully distinguishing mosses from liverworts and lichens.

Underpinning its publication is the belief that mosses are, before anything else, beautiful: a lot of joy is to be had in exploring this minute dimension of the natural world.

This is a community project of the
Friends of the Box-Ironbark Forests
generously supported by The Norman Wettenhall Foundation

Recommended Retail Price: $15.00
Pre Publication Price: $10.00, plus $2.00 postage

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Mosses of Dry Forests of South Eastern Australia @ $12 each (postage and GST included)

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Bryogear

Brunel DM5 stereo field dissector

A light, rugged but inexpensive dissector is one piece of field equipment I have been keen to find. I bought this one from an on-line scientific supply company based in the UK (www.nhbs.com). It arrived in Melbourne just two weeks after ordering. The total cost was GB£48.16, including GB£6.50 shipping (about AU$70 at the time, but about AU$90 now).

The body is made largely of high-quality plastic, with metal parts where needed for strength, so it weighs in at only 530 g (my Nikon dissector weighs 4.5 kg). The magnification is 20× as supplied with 10× eyepieces, and the eyepieces are vertical. The inter-pupillary distance is adjustable from 50 to 70 mm. A simple friction rack serves for focusing, and works surprisingly well. Illumination is provided by one LED powered by two AA batteries, with a switch on the top of the base. The slide clips have a spring-loaded lever action and can be turned around if not needed, as in the photograph.

The removable white specimen plate, although serviceable, is plastic and easily scratched, so I cut two replacements from clear and translucent white leadlight glass scraps. Because the space below the plate is clear, it is possible to mount the unit over a light source to view slides by transmitted light. The base has four rubber feet, and a good plastic dust cover with welded seams is included.

The real surprise with this dissector is the quality of the achromatic optics, which is remarkably good considering the price. The wide-field eyepieces make viewing very easy, and there is no distortion across the viewing area, which is about 10 mm wide. And because they have a standard 23 mm diameter barrel, the eyepieces can be interchanged easily to give other magnifications. The only downside is that the eyepieces cannot be focused independently, although that can be overcome with a little ingenuity or a replacement eyepiece. The single LED provides more than enough illumination.

I have used this microscope on several field trips, packed in a plastic box with some bubble wrap for extra protection, with no problems at all.

Overall this is a fabulous little basic dissector that is well built, light, easy to use and optically excellent. Apart from its usefulness for serious field work, it would also make a great first microscope for a budding bryologist. How well it lasts will be the real test.

Brunel has now brought out a new model (DM6) that has angled eyepieces and is slightly cheaper (GB£38.30 plus shipping). If the quality is the same, this seems like a bargain.

Equipment: Brunel DM5 stereo field dissector

Manufacturer: Brunel Microscopes (www.brunelmicroscopes.co.uk)

Dimensions: base 100 × 140 mm, height (with eyepieces inserted) 230 mm min., 260 mm max.

Cost: GB£41.66 plus GB£6.50 international shipping (purchased October 2013)

Rating out of 10: 9

— David Meagher

What's that green stuff?

This uncommon moss is usually considered to be an epiphyte in wet forest or rainforest, but it has been found in drier forests and also on soil and rock. Perhaps the most unusual habitat recorded is wet sand behind a coastal dune at Wilson Promontory in southern Australia.

In the field it may be recognised by white tomentum on the stems, and by having only a very short costa or no costa at all (although a longitudinal plication in the leaf may be mistaken for one). The seta is notably reddish, and capsules are distinctly contracted below the mouth.

The taxonomic position of this species has been uncertain: once placed in the Hookeriaceae, it was moved to the Daltoniaceae and then to the Callicostaceae. It is known from Australia (south-western Western Australia, Tasmania, Victoria, ACT, New South Wales, south-eastern Queensland), New Zealand and southern South America. One has to wonder whether a single species can occupy such a wide range of habitats in such a wide geographical range. Perhaps more than one species is involved? *Answer at bottom of page*.

Australasian Bryological Newsletter is published twice yearly.
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www.utas.edu.au/australasian-bryological-newsletter/
Editor: David Meagher (dameag+unimelb.edu.au)
(replace + with @ to email)
Articles relating to bryology in Australasia are welcome.
The deadline for Issue 64 is 31 May 2014.

Cover photo

Dawsonia polytrichoides R.Br., Spankers Knob, East Gippsland, Victoria. (DAM)

What's that green stuff?

Sauloma tenella (Hook.f. & Wils.) Mitt., Den of Nargun, East Gippsland, Victoria. (DAM)