

broadleaved woodland running up to an altitude of 550 m. This has to be good news for the bryophytes in the long term.

On the way back, Gordon, driving the leading vehicle, clearly had one eye on the bar-opening time at Kindrogan, but it still took an hour to get back to the road.

### Saturday 12 July: Glen Brerachan (NN9763)

A depleted party consisting of the Czechs, Ron, Roy and Martin set out in the morning to reach Creag Spardain, a limestone hill in Glen Brerachan, on the east side of the Ben Vrackie massif. Ron found *Fossombronina wondraczekii* at the start of the track, which also had a lot of *Blasia pusilla*, *Scapania irrigua* and *Ditrichum heteromallum*. The initial part of the route was through forestry plantation with little interest, but we eventually came out into an extensive area of very broken crags, acidic but with limestone outcrops. The going among the deep heather and boulders was pretty diabolical. *Anastrophyllum minutum*, *Douinia ovata*, *Lejeunea*

*cavifolia*, *Lophozia longidens*, *Mnium marginatum*, *Rhabdoweisia fugax*, *Schistidium papillosum* and *S. strictum* provided some interest, and Ron found *Campylopus fragilis*\* and *Tortella nitida*\*. More productive were the flushes that were scattered along the slope. Alongside the usual flush species were *Jungermannia obovata*, *Leiocolea bantriensis*, *Riccardia multifida*, *Calliergon sarmentosum*, *C. stramineum* and *Meesia uliginosa*. Blanka and Roy found a few stems of *Calliergon trifarium*.

Ron and Martin battered on and made it to the target crag, Cona Chreag, with a few tantalising minutes in hand. The slab-like cliff-face here was unlike any other we had seen, being peppered liberally with cushions of *Grimmia ovalis*\* and otherwise pretty well decorated with *Antitrichia curtispindula*, *Bryoerythrophyllum ferruginascens*, *Homalothecium sericeum* and *Leucodon sciuroides*.

### Summary

The week came to an end with eight new vice-county records; seven old records were updated. A total of over 370 bryophytes was recorded.

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## Summer field meeting 2003, East Perthshire (second week)

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### Introduction

Following the first week of the summer field meeting, most of the participants headed home, leaving a hard core of five reprobates (Roy Jeffery, Liz Kungu, Mark Lawley, Seán O'Leary and Mark Pool) to pass a joyful week scampering over the hills of East Perthshire (v.-c. 89) in search of bryophytes. Unbroken sunshine blessed each day save the last, and with England melting in a heat wave, we gave thanks

as delightful mountain breezes caressed our brows and cooled our backs.

Rather than exploring classic bryological hot spots, we sought out little-known localities in order to extend the sum of knowledge. Several of these were far from tarmac, and Martin Robinson gave invaluable assistance by securing permission from landowners to drive several miles along tracks on private estates. This saved us long walks, and left a lot more time for bryologising.

**Saturday 12 July: Riechip Den (NO0646 and NO0647)**

While some members of the party travelled up from the south, Liz and Mark Lawley explored Riechip Den, two or three miles north-east of Dunkeld. This wooded dingle is designated as a Site of Special Scientific Interest, but was bryologically unknown until we set to work. By the end of our afternoon, 125 species had been found. Dappled shade gave pleasant relief from the hot sun for us as well as for *Hygrohypnum eugyrium* and *H. luridum* on boulders by the stream. Most of the rock and boulders were acidic, but pockets proved sufficiently base-rich for *Cololejeunea calcarea*, *Leiocolea bantriensis*, *Lejeunea cavifolia*, *Anoetangium aestivum*, *Anomodon viticulosus*, *Campylophyllum calcareum*, *Grimmia torquata*, *Gymnostomum aeruginosum*, *Neckera complanata*, *N. crispa* and *Tortella tortuosa*. Numbering among plants less dependent on base-enrichment were *Barbilophozia hatcheri*, *Blepharostoma trichophylla*, *Tritomaria exsectiformis*, *T. quinqueidentata*, *Grimmia curvata* and *Trichostomum tenuirostre*. *Trichocolea tomentella*, *Plagiobryum xieri*, *Sphagnum capillifolium*, *S. fimbriatum* and *S. girgensohnii* cloaked wet banks of soil. The sides of a short, shallow gorge were sufficiently shaded for *Eurhynchium pumilum*, *Fissidens osmundoides*, *Heterocladium heteropterum* var. *flaccidum*, *Hookeria lucens*, *Plagiothecium curvifolium* and *Rhynchostegiella tenella* to thrive, and several fallen tree trunks and boughs – damp and decorticated – held abundant *Nowellia curvifolia* and *Riccardia palmata*, alongside more modest quantities of *Barbilophozia attenuata*, *Scapania irrigua* and *S. nemorea*.

**Sunday 13 July: Loch Garry (NN6268 and surrounding area)**

On Sunday, all five members worked up their tans near the southern end of Loch Garry in the far west of the vice-county. *Poblia drummondii* and *P. filum* grew on disturbed soil by the track, but we spent much of our morning exploring a mire near the head of the loch, where Liz found

*Sphagnum molle*\*, among the first of 15 species of *Sphagnum* located that day. Nearby, resplendent orange hummocks of *S. austinii*, burnished in the summer sun, had clearly forgotten their Factor 25. *Calypogeia sphagnicola*, *Kurzia pauciflora*, *Mylia anomala* and *M. taylorii* added hepatic interest.

After lunch, we explored the banks of the Allt Coire Easan, where Roy's geological expertise in interpreting bedrock and terrain became evident on the first of many occasions during the week. The burn had cut into mica-schist and quartzitic gneiss, which augured badly for bryodiversity, but in some places the bedrock had a calcareous cement that proved popular with *Schistidium crassipilum*, *S. papillosum* and *S. strictum* (those of us who had attended the recent workshop being keen to display our newly acquired expertise in S-words). Fortunately, other calcicoles diverted attention, with *Cololejeunea calcarea*, *Anoetangium aestivum*, *Grimmia torquata*, *Hypnum callichroum* and *Molendoa warburgii*. *Eremonotus myriocarpus* and *Jungermannia parvica* were present too, and Mark Pool found *Bryum riparium*, its pale green shoots resembling *B. mildeanum*, but the distinctive, flat, red tubers giving the game away on microscopic examination.

On the slopes above, a small area of scree on the northern side of Meall Doire (NN6168) yielded *Anthelia julacea*, *Kiaeria blyttii*, *K. falcata* and *Racomitrium sudeticum*. Mats of *Tetralophozia setiformis* capped several boulders, and Seán found a little *Bazzania tricrenata* in one of the declivities. Nearby, *Scapania uliginosa* grew in a runnel. *Anastrepta orcadensis* turned up, and several colonies of *Splachnum ampullaceum* and *S. sphaericum* bore witness to nature's recycling programme.

Bird life was also much in evidence on this idyllic summer's day. A Peregrine swore at us from high above, and Mrs Merlin – fearful for the safety of her nest in the heather – rose before us. Two love-struck Red-throated Divers wailed to each other across the loch, and a family of Ring Ouzels scattered across the moor. It was gone nine in the evening before we

arrived back in Pitlochry for late fish and chips and a pint.

**Monday 14 July: Glen Tilt (NN9475, NN9575 and NN9576)**

As we drove up Glen Tilt, a Red Squirrel bounced along the parapet of a bridge. The BBS had explored Creag Mhor's crags during the summer meeting of 1977, so we pushed a little further on, and parked about a mile beyond Forest Lodge, crossing the river by a footbridge in order to explore the lower reaches of the Allt Fheannach and its rocky banks, before returning along the south-eastern side of the valley and paddling back across the river (at a mercifully low ebb that day) to the car.

Acidophiles on acidic metamorphosed granite by the River Tilt gave way to a much more varied bryoflora once we encountered faulted Dalradian limestone with igneous intrusions and mica-schist along the Allt Fheannach. Here grew *Apometzgeria pubescens*, *Cololejeunea calcarea*, *Leiocolea alpestris*, *L. turbinata*, *Porella cordaeana*, *Scapania aspera*, *S. scandica*, *Anoetangium aestivum*, *Bartramia ithyphylla*, *Brachybecium glareosum*, *Bryum imbricatum*, *Didymodon ferrugineus*, *Entodon concinnus*, *Grimmia hartmanii*, *Mnium stellare*, *Ortobothecium intricatum*, *O. rufescens*, *Philonotis calcarea*, *Poblia cruda*, *Pseudoleskeella catenulata*, *Seligeria donniana* and *S. pusilla*. Flushed soil gave us *Amblyodon dealbatus* and *Meesia uliginosa*. Another surge of enthusiasm for the recondite wonders of Schistidiology produced *Schistidium crassipilum*, *S. elegantulum* subsp. *elegantulum*, *S. papillosum* and *S. trichodon*. But the hour had come to drag ourselves away from these alluring beauties of tranquil country so far from mad rushing crowds, and vacate the field for Blair Atholl's bucolic attractions and gay crowded places.

**Tuesday 15 July: Carn Breac (NN9568) and Meall Breac (NN9668)**

Martin Robinson joined us for our jaunt to the limestone hills north of Shinagag. Approaching

from Loch Moraig, we stopped for half an hour to look for *Aongstroemia longipes* beside the track (amid billowing masses of *Anomobryum julaceum*), with small quantities of *Fossombronia incurva* and *Haplomitrium bookeri* in attendance nearby. Beyond the fence a base-rich flush sported *Catoscopium nigratum*, its compact, dark-green cushions and stubby, brown, horizontal capsules making a fine show. We were to see much more of this scarce species later in the day.

Carn Breac achieves a very modest altitude of 500 metres, and Meall Breac is little higher, so we did not discover any species confined to high ground, but the slopes of sugar limestone and calcareous schist rewarded our search with a fine range of calcicoles. Alongside the pretty pinnate leaves of Purple Milk-vetch (*Astragalus danicus*) grew *Bryum caespiticium*, *Bryoerythrophyllum recurvirostrum*, *Didymodon ferrugineus*, *Distichium capillaceum* and *Pseudocrossidium revolutum* (abundant here in its 'natural' limestone habitat). *Encalypta rhaptocarpa*, *E. streptocarpa* and *E. vulgaris* all made a bow, but choicest of this genus was an extensive colony of *E. alpina* on the northern slopes of Carn Breac, alongside much smaller quantities of *Bryum elegans* – a moss which fully justifies its specific epithet. *Scapania aequiloba*, *S. aspera*, *S. gymnostomophila*, *S. subalpina*, *Entodon concinnus*, *Grimmia hartmanii*, *Gymnostomum aeruginosum*, *Hymenostylium recurvirostrum*, *Mnium marginatum*, *Myurella julacea*, *Ortobothecium intricatum*, *Poblia cruda*, *Pseudoleskeella catenulata* var. *catenulata*, *Racomitrium canescens*, *Seligeria donniana*, *Thuidium delicatulum*, *Trichostomum crispulum* and *Weissia brachycarpa* var. *obliqua* also appeared. Schistidiophiles assuaged their affliction and sated their addiction with *Schistidium apocarpum*, *S. crassipilum*, *S. papillosum* and *S. robustum*.

Crossing from Carn Breac to Meall Breac, we did not dally long by small flushes containing *Catoscopium nigratum*, with *Sphagnum austini* nearby, but headed down to a more extensive flushed area a little to the west of Loch Valigan. Here Seán found *Tomentypnum nitens* growing near *Scapania calcicola*, *Meesia uliginosa* and

*Oncophorus virens*, with phanerogams such as False Sedge (*Kobresia simpliciuscula*), Three-flowered Rush (*Juncus triglumis*), Few-flowered Spike-rush (*Eleocharis quinqueflora*) and Variegated Horsetail (*Equisetum variegatum*) nearby.

### Sron na h-Innearach (NN9670)

Late in the afternoon we briefly explored the northern end of Sron na h-Innearach, whose limestone cliff supports a bryoflora similar to that of Carn Breac and Meall Breac, with *Jungermannia borealis*, *Leiocolea alpestris*, *Scapania aequiloba*, *Bryum elegans*, *B. imbricatum*, *Campylophyllum calcareum*, *Encalypta rhaptocarpa*, *Hypnum hamulosum*, *Mnium marginatum* and *Myurella julacea*. *Apometzgeria pubescens* appeared for the first time during the day, but we failed to relocate a puzzling *Eurhynchium* found there recently, with concave branch leaves and stem leaves with very narrow mid-leaf cells (about 5 µm wide).

### Wednesday 16 July: Cama' Choire (NN7079 and NN7179)

Wednesday's jolly found us parked at the far end of a very long track just to the north of Sronphadruig Lodge, whence we explored the lower reaches of Cama' Choire. We had elected to explore this east-facing valley more because of its remoteness rather than in expectation of finding base-rich ground, and to begin with the bedrock of acidic quartzite did indeed yield a calcifugous flora, which included *Hygrobiella laxifolia* and *Nardia compressa* beside the stream. *Philonotis seriata* also showed affinity for the streambank, appearing at two places beside the watercourse. Mark Pool did his *Sphagnum* thing, finding *Sphagnum magellanicum*, *S. russowii*, *S. tenellum* and *S. teres*. *Splachnum sphaericum* and *Tetraplodon mnioides* were there too, and among the liverworts we recorded *Anastrophyllum minutum*, *Douinia ovata*, *Fossombronina incurva*, *Jungermannia atrovirens*, *J. borealis*, *J. pumila*, *Scapania paludosa*\*, *S. scandica* and *S. subalpina*.

Pushing further upstream towards the northern and western extremities of the grid-square NN7079, we encountered rock and soil apparently rich in iron, and with calcareous or basic influence. The bryoflora changed accordingly, with *Amphidium lapponicum*, *Anoetangium aestivum*, *Bryoerythrophyllum ferruginascens* and *Molendoa warburgii* in evidence. *Cololejeunea calcarea*, *Scapania aequiloba*, *Campylophyllum calcareum*, *Distichium capillaceum*, *Mnium marginatum*, both species of *Orthothecium* and *Schistidium strictum* completed a respectable complement of calcicoles. Seán found *Bartramia balleriana*\*.

### Thursday 17 July: Ben Gulabin (NO1171, NO1172 and NO1072)

Thursday brought yet more wall-to-wall sunshine as we toiled up and around the eastern slopes of Ben Gulabin, near Spittal of Glenshee. We passed much of our morning on acidic felspar, quartzite and schists, but as we moved north some of the schists became associated with a heavily-weathered calcareous sandstone. Mark Pool found *Cynodontium jenneri* on boulders in scree, and a patch of *Ditrichum lineare* appeared by a sheep-path. *Barbilophozia hatcheri*, *Grimmia curvata*, *Pohlia filum*, *Pterigynandrum filiforme*, *Splachnum sphaericum* and *Tetraplodon mnioides* went on the list. Climbing on towards the pass into Coire Shith, Mark recorded a number of bog mosses, including *Sphagnum girgensohnii*, *S. molle*, *S. quinquefarium*, *S. tenellum* and *S. warnstorffii*. On and among some of them grew *Calyptogeia sphagnicola*, *Cephalozia pleneiceps*, *Cephaloziaella* cf. *spinigera* and *Kurzia pauciflora*. *Scapania uliginosa* occurred in a runnel by the stream.

Passing into Coire Shith, we came upon a large expanse of base-rich ground with wet stones and gravel sprouting impressive hummocks of *Catoscopium nigratum* and less *Meesia uliginosa*.

### Friday 18 July: Delvine (NO1138 and NO1238)

The sun finally forsook us for our last day in the field. Storm clouds gathered and rain fell on the

hills around us, but our chosen ground remained dry. After a succession of strenuous days in the hills, we languidly potted about on shingle and soil banks at Delvine – a fine, open, peaceful place by the River Tay, a few miles downstream from Dunkeld – keeping company with Sand Martins, who flickered and wittered quietly by.

A few minutes into the morning's exploration, Seán found *Syntrichia papillosa* on an oak tree, and then *Pohlia filum* appeared on the riverbank near to *Archidium alternifolium*\*. *Riccia canaliculata*\* and *R. cavernosa* sprawled over damp mud in a drying lagoon, alongside a little *Ephemerum serratum* var. *minutissimum*. Mudwort (*Limosella aquatica*) and the aquatic cabbage Awlwort (*Subularia aquatica*) were both in bloom, and another patch of damp mud by sequestered water in an old oxbow carried Needle Spike-rush (*Eleocharis acicularis*).

With arable bryophytes so topical at present, we felt obliged to close the week's fieldwork with a

few minutes on our knees in a field of arable set-aside. Prayers were answered in the forms of *Fossombronia pusilla*, *Marchantia polymorpha* subsp. *ruderalis* and *Phaeoceros carolinianus*\*.

### Summary

In the course of our week, we recorded six species that were either new to the vice-county or had not been seen there for over 50 years. *Riccia canaliculata* and *Phaeoceros carolinianus* from our day at Delvine are both Red Data Book species, reminding us that many bryophytes are rare because their favoured haunts are rare too. In turn this prompted the reflection that while bryologists understandably head straight for the hills when they go north, in doing so we unjustifiably neglect low-lying habitats and places that may yield uncommon species. Scotland surely has much to offer on low ground as well as high, a notion that we can test again when we sally into north Aberdeenshire next summer.

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## AGM and Bryological Symposium 2003, London

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The Annual General Meeting and Bryological Symposium were held at Queen Mary College, University of London on 5-7 September, with Prof. Jeff Duckett as local secretary. This, the first autumn meeting to have been held at the College, proved to be a popular venue for the bryological diaspora, with a total of 54 members

attending the symposium and 20 going on to join the Sunday excursion. Participants were housed in the College's halls of residence at the Mile End Site overlooking the Regent's Canal in whose murky depths they were both surprised and delighted to find the local bryological jewel *Octodicerias fontanum*.

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### Bryological Symposium

The Symposium, held in the School of Biological Sciences at Queen Mary, and chaired by David Long and Jeff Duckett, comprised a

remarkably eclectic and enjoyable selection of presentations, as can be seen from the abstracts on pp 32-44.