

# BBS Summer Meeting 2011

## Week 1: 25 June–1 July 2011

The first week of the summer meeting was based in Angus (v.-c. 90), with most visiting participants taking up lodging in the village of Edzell, close to the border with Kincardineshire (v.-c. 91) and well-placed for the range of sites on the itinerary.

The field meeting was organized by Liz Kungu with assistance from local bryologist Theo Loizou (BBS vice-county recorder for Angus). Additional participants for all or part of the meeting were Ndurie Abah, Jeff Bates, Joyce Bates, David Bell, David Chamberlain, Bill Hay, Mark Lawley, David Long, Mark Pool and Clare Rickerby.

The aim of the week was primarily recording under-recorded hectads in Angus (with a few excursions into neighbouring Kincardineshire) for the new *Atlas*, while Jeff and Joyce used the opportunity to gather data for the BRECOG project (Bates, 2011).

Angus lies along the Highland Boundary Fault, with mountainous terrain in the north-west and undulating lowland terrain dominated by agriculture leading to the coast in the south-east. The highland glens of Angus are dominated by acidic crags, but base-rich flushes are widespread and there are a few outcrops of metamorphic limestone. The lowland portion of Angus is dominated by Lower Old Red Sandstone of the Devonian Age (Duncan, 1966), providing rich soil for agriculture and resulting in intensive farming.

Angus has been well-worked bryologically in the past, with the first bryophyte collections from the county being made by Archibald Menzies in 1778, and several sites such as Caenlochan Glen, Glen

**David Bell and Mark Pool** report on weeks 1 (in Angus) and 2 (in Sutherland), respectively, of the 2011 BBS Summer Meeting in Scotland.

Clova and the Den of Airlie known to be bryologically rich. Ursula Duncan (1966) published an excellent bryophyte flora for the county, but in recent years it has been rather neglected, and since many of the interesting historical records listed in Duncan's flora are poorly localized it was hoped that this meeting would serve to more precisely geo-reference these species, while also adding additional records to update the local flora.

▽ Eager bryologists in the basin of Corrie Fee. *M. Pool*





This was the first BBS meeting to be based in Angus since 1947, although the 1964 and 1996 summer meetings based at Braemar each had two day trips into Angus, visiting Inverquhar Castle (1964), Glen Clova (1996) and Caenlochan Glen (1964 & 1996). This was the first official BBS meeting to venture into Kincardineshire.

All records below are for v.-c. 90, except were otherwise indicated, and an asterisk (\*) indicates a new or updated vice-county record.

#### SATURDAY 25 JUNE

For those travelling to Edzell on Saturday the meeting began with some recording en route.

David Chamberlain, Clare and Ndurie found little of note around the woods and coastal cliffs of Carlingheugh Bay and Seaton Den (NO6643) with their most interesting find being *Brachythecium mildeanum* on wet gravel around woodland/disused quarry at Leysmill (NO6047). Liz fared a little better, chalking up 90 species for NO54 with local bryologists Theo and Bill in mixed woodland with a reservoir and stream at Crombie Country Park (NO5240) and Dilty Moss (NO5243), a poor fen with gorse and willow. Duncan (1966) stated that Dilty Moss deserved special mention, particularly for its abundant sphagna, but only five species were recorded on this visit, suggesting that the bog has deteriorated significantly.

On his journey north to Edzell, Mark Lawley called in at Fern, hoping to add to what was known of the Reverend John Fergusson, minister of the parish in the late 19th century, and a highly accomplished field bryologist (see p. 43 for Mark's account of Fergusson). At Fern Churchyard (NO4861) Mark picked up the first vice-county record of the meeting, a debracketing of *Marchantia polymorpha* subsp. *ruderalis*\*, before moving onto Edzell where he dutifully surveyed a portion of the Angus bank of the River North Esk straddling two under-recorded hectads (NO66 & 67); here he recorded *Barbula sardoa*, *Dichodontium flavescens*\*, *Eurhynchium crassinervium*, *Fissidens pusillus*\*, *Gyroweisia tenuis*, *Didymodon spadiceus* and *Leiocolea turbinata*.

#### SUNDAY 26 JUNE

On Sunday, participants visited two valley systems around Glen Mark.

Mark Lawley, Mark Pool, Ndurie and Theo worked their way up the Burn of Branny to Coire Breac (NO4383). Around the Burn of Branny they found *Campylopus subulatus*, *Cynodontium polycarpon*, *Ditrichum zonatum*, *Grimmia incurva*, *Pohlia proliger*, *Sphagnum angustifolium*, *S. teres*, *S. warnstorffii*, *Calypogeia azurea*, *Gymnomitrium obtusum*, *Solenostoma hyalinum*, *Marsupella funckii* and *Scapania aequiloba*.

The rocks of Coire Breac were acidic, but formed a somewhat basiphilous flora where water seeped down the rock (*Grimmia torquata*, etc.), and flushed ground near and below the rocks held calcicoles such as *Distichium capillaceum* and *Ditrichum gracile*. Other notable species included *Bryum weigellii*, *Grimmia funalis*, *Philonotis seriata*, *Harpanthus flotovianus* and *Scapania uliginosa*.

Liz, Clare and David Chamberlain were just on the other side of Round Hill, in Glen Mark. They immediately found *Orthotrichum striatum* around the car park at the mouth of the Glen and *Bryum pseudotriquetrum* var. *pseudotriquetrum*\* in a mire on the north-east bank of the river. *Cynodontium strumiferum*, *Pterigynandrum filiforme*, *Racomitrium ericoides*\* and the first of many sightings of *Tetralophozia setiformis* were noted at Gilfumman on north-east-facing slopes with block scree. On the crags and boulders of Hard Hill and Craig Breostock they added *Grimmia ramondii*, *Isopterygiopsis pulchella* and *Schistidium strictum* to the list.

Both groups were in NO48 and between them they recorded 201 species for the hectad.

#### MONDAY 27 JUNE

In the morning David Long, Clare, David Bell, Ndurie and Theo visited Loch of Kinnordy (NO3653), an RSPB reserve with marshy woodland surrounding the loch. This site defied the group's high expectations, with only 27 species recorded during the morning's search. Following this, the group went onto the Loups of Kenny on Melgam



△ (Top left) The bryologists disperse at the base of Corrie Fee. D.G. Long  
 (Top right) *Sphagnum magellanicum*, Corrie Fee. D.G. Long  
 (Middle left) *Racomitrium macounii*, Corrie Fee. D.G. Long  
 (Middle right) Clare and Theo acquaint themselves with *Racomitrium macounii* at Corrie Fee, as Mark Lawley investigates the upper ledges. D.G. Long  
 (Bottom left) *Calypogeia azurea* with its distinctive bluish hue, Corrie Fee. C. Rickerby





△ Searching for *Splachnum vasculosum* on the Plateau above Corrie Fee. M. Pool



△ *Splachnum vasculosum*, above Corrie Fee. D.G. Long

Water (NO3052). This is a wooded ravine close to the bryologically rich Den of Airlie so it was hoped that a similar geology would support an interesting suite of species. Unfortunately, the site was rather acidic with little exposed rock and the Loups of Kenny were inaccessible due to the high water level and precipitous and slippery terrain. *Dichodontium flavescens*\* and *Conocephalum salebrosum*\* brought the total for the day to 69 before heavy and persistent rain encouraged a retreat.

Mark Lawley and Mark Pool visited Craig of Balloch (NO2761) where the block scree below the crags held *Bazzania trilobata*, *Tetralophozia setiformis* and *Tetraplodon mnioides*. The crags themselves were mainly acidic, but with some base enrichment in one or two places (*Grimmia torquata*, *Neckera complanata*). Flushed ground beside a small stream, a valley mire and mortared walls of a ruined building boosted the number of species over 100 (including *Brachythecium glareosum*, *Conocephalum conicum* s.s.\*, *Isothecium myosuroides* var. *brachythecioides*, *Sphagnum magellanicum* and *Tetralophozia setiformis*) before heavy rain set in and deterred the adventurers.

Liz and David Chamberlain started the day at Arbutnot Church (NO8074) in v.-c. 91 where they

found *Conocephalum conicum* s.s.\* and *Conocephalum salebrosum*\* on the south bank of the Bervie Water and progressed to Crawton Bay where they recorded *Eucladium verticillatum* and *Leiocolea turbinata* in base-rich seepage zones of coastal cliffs. Despite being unable to increase their tally at several other sites due to free-range pigs, drained bogs and inaccessible woodland, the diligent duo still managed 73 species for NO87 and proved themselves the most hardy of the group by being the last to submit to the weather and return to base.

#### TUESDAY 28 JUNE

With the clouds having emptied their contents the previous evening, Tuesday brought some welcome sunshine and renewed vigour in the group.

David Long, Clare, David Bell, Ndurie and Theo went for a long walk into Glen Lee to the Falls of Unich and Hunt Hill (NO3880) where the river valley produced a respectable list, including *Kiaeria blyttii*, *Grimmia torquata*, *Schistidium strictum*, *Thuidium assimile*, *Douinia ovata*, *Lophozia longidens*, *Scapania lingulata*, *Scapania uliginosa* and *Tetralophozia setiformis*. With 134 species recorded for NO38, the intrepid ramblers crossed into NO37, but unfortunately time and treacherous terrain

kept them from the reaching the promising ground around the Falls of Damff and the total for the second hectad was limited to 60 species.

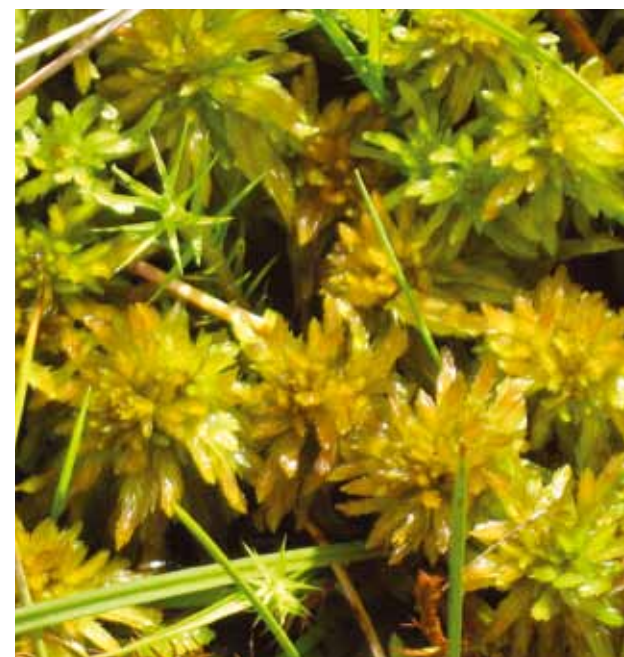
Mark Lawley, David Chamberlain and Mark Pool spent the day in Glen Effock (just south of Glen Lee), a historic site for *Timmia austriaca*. The wooded crags and stream-crossed moorland harboured *Cynodontium bruntonii*, *Kiaeria blyttii*, *Cololejeunea calcarea*, *Leiocolea heterocolpos*\*, *Scapania calcicola* and *Tetralophozia setiformis*, but unfortunately they were unable to add the elusive *Timmia* to their admirable 155 taxa total of the day.

Liz and Bill Hay tackled some lowland habitats to balance the altitudinal bias of the day, but unfortunately these sites were rather uninspiring bryologically. Nevertheless, every record counts when 'square-bashing' and our enthusiastic leader was happy to do her duty, covering a range of habitats (including raised bogs, woodlands and river banks) across three different hectads for the day, safe in the knowledge that the following day would be more stimulating.

#### WEDNESDAY 29 JUNE

This was a day for the group to be treated to a

▽ *Sphagnum lindbergii* on the plateau above Glen Doll. M. Pool



known bryological gem as a reward for all their diligent recording. The weather continued to be kind as David Long led the group deep into Glen Clova, through Glendoll Forest to Corrie Fee NNR and Glen Doll.

Amongst the rarities of the day were *Sphagnum lindbergii* and *Splachnum vasculosum* in flushes above Corrie Fee, while in the crags below the list included *Bryum dixonii*, *Grimmia funalis*, *Encalypta ciliata*, *Hygrohypnum duriusculum*, *Orthothecium rufescens*, *Paraleucobryum longifolium*, *Plagiopus oederianus*, *Pterigynandrum filiforme*, *Racomitrium macounii*, *Saelania glaucescens*, *Schistidium robustum*, *Schistidium strictum* and *Radula lindenbergiana*.

On the north-facing limestone ledges of The Dounalt (NO2476) in Glen Doll *Didymodon ferrugineus*\*, *Kiaeria blyttii*, *Schistidium trichodon*, *Scapania calcicola* and *Tetralophozia setiformis* were added to the list, bringing the total for the day to 187 taxa.

In the afternoon Liz and David Chamberlain formed a splinter group to record in NO45. Here they visited the birch scrub and bog of Forest Muir SSSI (NO4255) and Tanadice Church (NO4758) where they found *Orthotrichum rivulare* growing by

▽ Clare and Ndurie enjoy a well-earned rest beneath the crags of Carlochy Corrie. D.G. Long





the River South Esk, adding 59 species to the total for that hectad.

#### THURSDAY 30 JUNE

The team awoke to a rather dreary morning on Thursday, with intermittent drizzle and torrential showers being broken up by clear skies and sunshine as the day progressed.

Despite the weather Liz, David Chamberlain and Theo decided that a trip to the seaside was in order and took their buckets and spades to NO76 in Kincardineshire (v.-c. 91) and the sand dunes at St Cyrus SSSI, where they were pleased to find *Porella obtusata* and *Racomitrium elongatum*\*. Staying in v.-c. 91 they visited Bradieston SSSI (hill ground and valley mire) where they collected *Bryum pseudotriquetrum* s.s.\* and *Scorpidium cossonii*\* from a base-rich flush with *Tomentypnum nitens*, and *Schistidium apocarpum*\* from a wall in the yard of West Bradieston Farm.

Mark Lawley, Mark Pool and David Bell visited Glen Turret – a wooded ravine leading to open moorland at the base of Mt Battock in NO58. This hectad had no post-1970 records, so the team were guaranteed some degree of success for the day. Although no particularly rare species were discovered, the bogs supported 13 different species of *Sphagnum* and the day brought the total count for the hectad to a respectable 116 species. After lurching without shelter in a torrential downpour and with nothing new being added to the list, the soggy group decided to move onto the Rocks of Solitude (NO5872) on the River North Esk just outside Edzell. This wooded river gorge lived up to its name as the wanderers didn't encounter another soul during their search, although thankfully the bryophytes were far from solitary, with 112 taxa recorded during the course of the afternoon, including *Bartramia halleriana*, *Pterigynandrum filiforme* and *Ulota drummondii*.

The third group consisting of David Long, Clare and Ndurie returned to the Glen Lee area where the crags of Craig Turner (NO4178) harboured *Kiaeria blyttii* and *Tetralophozia setiformis*. They

then recorded a total of 123 species at Carloch Corrie (NO3978), including *Antitrichia curtipendula*, *Encalypta ciliata*, *Sphagnum contortum*, *Sphagnum warnstorffii* and *Tetralophozia setiformis* once again.

#### FRIDAY 1ST JULY

The final day of the Angus week fortunately remained dry with only light cloud overhead.

In order to do justice to the under-recorded square we had been staying in (NO66), Clare, and the two Marks began the day's adventure in the back garden of the rented accommodation before moving onto Edzell Wood and the richer pickings of the banks of the River North Esk. Determined to finish the week in style and set a high standard for the second week at Melvich, they clocked up an impressive 153 taxa for the hectad during the day.

Meanwhile, the three Davids visited Kinnaird Deer Park (NO6257) in search of some interesting parkland trees. Although the parkland was dominated by bryologically rather dull oak and beech trees, some sycamores and a horse chestnut supported several stands of *Orthotrichum tenellum*, while David Chamberlain found *Orthotrichum rivulare* on rocks on the banks of the South Esk.

After a riverside lunch, the team moved onto Rossie Moor (NO6554). Here, 13 *Sphagnum* species were recorded, including *Sphagnum warnstorffii*, along with *Campyliadelphus elodes*\* and the second Scottish record of *Scapania paludicola*\*.

Liz, Ndurie and Theo once again ventured into v.-c. 91 to visit NO75 and NO86. The sand dunes and coastal cliffs at Montrose Links and Usan provided a meagre 40 species for the list in NO75, including *Porella obtusata* at Usan. The coastal woodland at Mill of Benholm and Johnshaven in NO86 was a little richer, with 71 species recorded. Since NO86 is a coastal hectad containing only about 4 km<sup>2</sup> of land, the team's total of 71 species for this square is admirable.

This concluded the first week of the summer meeting, with some members of the party returning home while several others continued north for the second week at Melvich.



△ David Chamberlain on Rossie Moor (left), site of the second Scottish record of *Scapania paludicola* (right) D.G. Long

While most of the upland sites visited were quite species-rich, many of the lowland sites seemed very poor compared to the reports of Duncan (1966), suggesting much of this habitat has deteriorated. This may be due to the continued intensive agriculture in these lowland areas and changing farming practices since the 1960s.

Overall the week was very enjoyable and productive, and 18 new or updated vice-county records were made; 12 for v.-c. 90 and 6 for v.-c. 91. Our thanks to Liz for the excellent organization

and to the various landowners who allowed us access to the sites visited.

**David Bell**

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#### REFERENCES

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- Duncan, U.K. (1966). A Bryophyte Flora of Angus. *Transactions of the British Bryological Society* 5, 1–82.

### Week 2: 2–9 July 2011

The second week of the Summer Meeting was based at Melvich, on the north Sutherland coast; the intention was to record under-worked hectads in v.-c.s 107 (East Sutherland), 108 (West Sutherland) and 109 (Caithness). Participants for all or part of the week were Ndurie Abah, Rebecca Chance, Mark Hill, Liz Kungu (organizer), Mark Lawley, Michael Lüth, Hub van Melick, Oliver Moore, Sean O'Leary, Mark Pool, Chris Preston, Clare Rickerby and Gordon Rothero. The headquarters was a pair of self-catering units belonging to the Halladale Inn; six members stayed there, two at the inn's campsite and the rest were scattered through the village.

#### SATURDAY 2 JULY

Liz, Clare, Ndurie, Mark Lawley and Mark Pool travelled up by various routes from Edzell; they met the others (except for Gordon, who was unable to join us until Monday) at Melvich during the evening. The weather was glorious, the scenery uplifting and the wildlife interesting (among other things, the group were entertained by a brood of young Long-eared owls during the evening).

#### SUNDAY 3 JULY

As on most of the days, the group split into several sections in order to cover the maximum amount of ground. Michael, Hub, Sean, Mark Pool and Chris parked near Millburn in Strath Halladale (NC8955)





△ Chris, Sean and Michael by the Allt a' Mhuillin.  
M. Pool  
◁ (Top left) Group photo at Melvich. M. Pool  
◁ (Bottom left) *Sphagnum fuscum*. N. Abah  
◁ (Middle) Chris and Michael at the Allt a' Mhuillin waterfall; no feasible exit route in sight! M. Pool

and explored the valley of the Allt a' Mhuillin to the west. Most of the rock appeared to be very acidic, but a respectable list of calcifuge species was gradually put together. A surprise here was *Dicranoweisia cirrata*\*, new to v.-c. 108, found by Chris on an old fence post by the burn. Other noteworthy species were *Dicranella subulata* and *Jungermannia obovata*, the latter identified by Chris and Sean using its carrot-like scent. Further up the valley, at approximately NC881554, a small flushed area on the right bank produced a number of common basicoles, which helped the total considerably. Just above this point the valley narrowed into quite an impressive ravine; highlights hereabouts were *Calypogeia azurea*, *Frullania fragillifolia* (both found on a north-facing crag) and *Grimmia ramondii*.

Lunch was taken where the ravine widened out slightly; soon afterwards it was blocked by an impressive waterfall (roughly at NC880555), which necessitated the party clambering out by a variety of more or less feasible routes. Arriving

safely on the plateau to the north, some time was spent in exploring the open bogland (part of the West Halladale SSSI), just west of Cnoc a' Mhuillin (NC85S). The bryoflora here was rather disappointing; *Sphagnum fuscum* was found (although only after a long search), but we did not see any *S. austinii*. The best ground almost certainly lies further to the west; a target area for the future, perhaps?

After returning to the cars (picking up a few ruderals and *Orthotrichum pulchellum* on the way), the group paid a brief visit to Trantlemore Cemetery (NC8952). Again, the total number of species was small (18), but it included several common species of lowland walls. Following this, another brief foray took in Clais Fhliuch, a small rocky stream with rather tangled willow scrub, in NC8951. The total here was 42; although nothing earth-shattering was found there were a number of common basicoles, perhaps the best being *Entosthodon attenuatus*. At the end of the day the NC85 total was 138, a considerable improvement on the original 23.

Mark Lawley, Oliver and Clare went eastwards with the aim of breaking new ground in Caithness. In this they were successful, finishing the day with four new or debracketed records and lists from no less than four sites. They started at Geise Farm, by the Thurso River in ND16C; their second site was the Cairnfield Quarries (ND153647), followed by Castletown (ND1968) and finally Drags Moss (ND1965).

Habitats at Geise Farm included secondary woodland, a trackside and the Thurso River, the latter including a small waterfall. The group recorded 69 species here; highlights were *Conocephalum conicum* s.s.\* and *C. salebrosum*\*, both new to v.-c. 109. Other taxa found included *Didymodon spadicus*, *Orthotrichum rupestre* and *Schistidium apocarpum* s.s.\*, the latter found on a drystone wall.

The quarries produced a total of 50 species, with a reasonable mixture of calcifuges and calcicoles. The best was another new vice-county record, in the shape of *Racomitrium ericoides*\*; other useful

ones included *Dicranella subulata*, *Drepanocladus polygamus*, *Orthotrichum rupestre* and *Zygodon viridissimus* var. *stirtonii*. The third site, in and around Castletown, was also worthwhile; the 43 (mostly lowland) taxa found included *Didymodon sinuosus*\* (new to v.-c. 109) plus a debracketing in the shape of *Lunularia cruciata*\*; the former was on shaded concrete and the latter was growing well on a gravel heap behind a ruined cottage. Drags Moss also proved worth visiting; again no great rarities were recorded, but the 45 species found included *Orthotrichum cupulatum*, *O. stramineum* and *Pellia neesiana*, and boosted the group's hectad total for the day up to a respectable 110.

Ndurie, Rebecca, Mark Hill and Liz headed for Loch More and its vicinity in ND04. Beginning in tetrad 04Y above Strathmore Lodge, they recorded in a variety of habitats, including blanket bog, loch shore and conifer plantation. Perhaps unsurprisingly, the latter proved the least productive (12 species). It did, however, produce a new v.-c. 109 record in the shape of *Orthodontium lineare*\*, found by Mark.





He followed that with *Racomitrium ericoides*\* from a gravelly roadside nearby. Liz also did well here, with *Tetraplodon mnioides*. The bog and loch shore were considerably more interesting (53 taxa in all). Mark soon found another new record, this time of *Sphagnum capillifolium* subsp. *capillifolium*\*, and a debracketing (*Ptilidium ciliare*\*); Liz soon replied with *Campylopus introflexus*\*, growing by the road (a more significant record than it seemed, as Caithness had previously been the only vice-county without it); she also noted *Racomitrium heterostichum* s.s.\*, another wanted debracketing, again by the road. Other good finds were *Pseudobryum cinclidioides* (found by Liz; plentiful by the loch), *Sphagnum magellanicum*, *Chiloscyphus pallescens*, *Pellia neesiana* and *Riccardia latifrons*.

Moving on westwards, some work was done at the bridge at 072462; this had some of the usual masonry species such as *Didymodon rigidulus*, *Orthotrichum anomalum* and *Schistidium apocarpum* s.s. (the latter, noted by Mark, would have been a new record if Mark Lawley hadn't already turned it up at Geise Farm). On shoreline rocks nearby Mark found *Schistidium rivulare*. Tetrad 04S added a good number of species, mostly from the blanket bog near Lochan Chairn Lèith and from a roadside gravel pit. Noteworthy records from the former included *Campylopus brevipilus*, *Sphagnum austinii*, *S. fuscum*, *Splachnum sphaericum*, *Mylia anomala*, *Pleurozia purpurea* and *Riccardia latifrons*; the gravel pit had, among others, *Ditrichum heteromallum*\*, *Oligotrichum hercynicum*\* (both wanted debracketings) and *Blasia pusilla*. *Campylopus introflexus* turned up again hereabouts, as if to make up for its long absence. As an attempt on another different habitat, the group looked at the banks of the Thurso River in ND0543. This, together with some adjacent moist grassland, had some rather different species. Liz was in fine form and found yet another new v.-c. 109 record in the shape of *Fontinalis antipyretica* var. *gracilis*\*, together with a debracketing (*Marchantia polymorpha* subsp. *polymorpha*\*); other taxa recorded included *Dicranella crispa*, *Sphagnum*



- △ (Top) The landscape is rather larger than us ... Mark Lawley, Ndurie and Liz at Forsinard. C. Rickerby
- △ (Bottom) Wow! Mark Lawley, Ndurie and Liz with *Sphagnum fuscum* at Forsinard. C. Rickerby
- ◁ (Top) *Campylopus brevipilus*. C. Rickerby
- ◁ (Middle) Hub and Michael in the Smigel Burn ravine. M. Pool
- ◁ (Bottom) Mark Pool gets up close with *Sphagnum austinii*. M. Pool

*girgensohnii*, *S. squarrosum* and *Straminergon stramineum*. The day's total for ND04 was 96.

MONDAY 4 JULY

Chris, Oliver, Rebecca and Sean took in a hectad in the Strath Naver area, south of Tongue (NC75). Their target was an enclosed area of woodland and a bog above Skelpick Burn. Oliver found six species of *Cephalozia* during the day, including the nationally scarce *C. loitlesbergeri* and *C. pleniceps*\* (the latter needed for v.-c. 108 as a debracketing). A candidate for *Sphagnum capillifolium* subsp. *capillifolium*\* was collected and later confirmed by Mark Hill as a new record for v.-c. 108. *Conocephalum conicum* s.s.\* was another new vice-county record from this hectad. An interesting ravine was searched but there was no sign of the more demanding oceanic bryophytes. However, a good population of *Antitrichia curtispindula* existed here and *Cololejeunea calcarea* was frequent on the sheltered rock face above the burn. *Sphagnum magellanicum* was the most notable species of *Sphagnum* encountered in the boggy area. Fortunately, the weather was warm enough for Sean not to be wearing 'the yellow thing' on this day and he was rewarded with the best glimpse of a goshawk as the group ate their lunch.

Mark Hill, Michael, Hub and Mark Pool started at the Corn Mill Bunkhouse in Strath Halladale (NC895577) and explored the valley of the Smigel Burn to the east; they concentrated on hectad NC95, which started the day with only 23 post-1970 records.

Before descending to the burn, the group explored the approach track and the adjacent moorland. This produced a couple of dozen species; none were dramatic, but *Blasia pusilla* was on the track and good female *Pellia neesiana* was found in a flush nearby. The burn itself flowed through an impressive, if acidic ravine, rather like that of the Allt a' Mhuillinn; the group eventually had to traverse out, but not before they had added a good spread of species to the list. *Calypogeia azurea* was found again, in an almost identical



habitat to that of Sunday; other taxa found here included *Cynodontium bruntonii*, *Entosthodon attenuatus*, *Sphagnum quinquefarium*, *Saccogyna viticulosa*, *Solenostoma hyalinum* and *Tritomaria quinquedentata*. Above the ravine, a flush roughly at NC902573 had a lot of interest, including *Sphagnum angustifolium*, *S. teres* and a number of basicoles such as *Scorpidium scorpioides* (fruiting) and *S. cossonii*.

Lunch was taken in an old sand quarry at 903574, after which the party moved eastwards into typical Flow country south of Loch na Seilge. This had the usual local specialities such as *Sphagnum austinii* (this had to be sought for, but some good hummocks were eventually discovered and a capsule was found at one point), *S. fuscum*, *S. magellanicum*, *Splachnum sphaericum* and *Cladopodiella fluitans*. Moving northwards into tetrad NC95E, the group spent some time checking the south-western corner of Loch na Seilge after finding *Riccardia latifrons* and a good variety of other bogland species on the way. The loch margin itself looked fairly unpromising, but improved with checking; the best find was *Odontoschisma elongatum*, growing on a muddy bank, but other useful species included *Calliergon cordifolium* and *Sphagnum teres*. Bogs between here and Loch na Caorach, to the west, had a reasonable population of *Campylopus brevipilus*, while the bank of the latter loch produced a good colony of *Pseudobryum cinclidioides*.

Following a coincidental meeting with Gordon (newly arrived) back at the main road, the group spent a short time searching for missing ruderals along the road verge in NC85. Despite the dry conditions a short list was made, the most interesting records being Mark Hill's find of *Brachythecium mildeanum* on tarmac and some *Tritomaria exsectiformis* growing on a sheltered bank.

The third group (Liz, Clare, Ndurie and Mark Lawley) spent much of the day in the Forsinard RSPB reserve in NC94. On the way they stopped at Forsinain Bridge (903485) and explored a variety of habitats (car park, river bank, track and

moorland) in tetrad NC94E. There were no new v.-c. 108 records, but a good total of 71 taxa were found. Perhaps the most interesting were *Dicranella subulata*, *Didymodon spadiceus*, *Pohlia bulbifera*, *Anastrophyllum minutum* and *Scapania subalpina*; fruiting *Bryum imbricatum* was found in the car park. Some further checking was done further south, in a forestry plantation and its environs in tetrad 94D; again no new records resulted, but the 36 species recorded included *Dicranella rufescens*, *D. subulata*, *Sanionia uncinata* and *Blasia pusilla*.

Following this, the party moved further east into the reserve, working partly in NC94H and partly on Sletill Hill in 94I. The survey area in the former square consisted almost entirely of patterned bog, while the hill brought in some variety in the shape of heather moorland, acidic flushes and boulders. All in all, the area provided quality rather than quantity (55 species in all). The bogland had, among other things, *Campylopus brevipilus*, *Sphagnum austinii*, *S. fuscum*, *S. magellanicum*, *Cephalozia macrostachya* var. *macrostachya*, *Kurzia trichoclados*, *Lophozia incisa* and *Riccardia*

▽ *Climacium dendroides* on Ben Loyal. M. Pool



*latifrons*. Sletill Hill produced nothing dramatic, but it added several species which had not been seen in the bogland; highlights were *Dicranum fuscescens*, *Tetraplodon mnioides*, *Mylia taylorii* and *Pleurozia purpurea*. At the end of the day the total number of species found in hectad NC94 was 107.

## TUESDAY 5 JULY

On Tuesday the entire group set off for Ben Loyal (v.-c. 108), with the intention of recording in the underworked hectad NC54. Ben Loyal is composed mainly of syenite, an unusual type of granite made brittle by its chemistry; most of the hill is therefore acidic, but outcrops of Moine schist on the lower slopes provide some basic influence.

Members parked near Lochan Hakel, at roughly NC567532, and set off southwards through the blanket bog towards the hill; to save time, no serious bryology was done on the approach. Recording began on arrival at Coille na Cuile (NC5649), a north-west-facing birch woodland on the schist, which produced a good variety of species. Noteworthy taxa seen here included *Hygrohypnum*

▽ The way up Ben Loyal. C. Rickerby

*duriusculum* (Oliver), *Calypogeia azurea* (Sean) and a single fruiting tuft of *Grimmia ramondii* (Mark Hill); others included *Campylopus gracilis*, *Orthotrichum rupestre*, *Sphagnum russowii*, *S. teres*, *Splachnum ampullaceum* and *Ulota hutchinsiae*. By the time lunch was taken (at the top of the wood at about NC568495, just above the syenite/schist boundary), the total list stood at a very creditable 123.

After lunch, the group straggled off up the burn leading up to Coire Calbhach. The acidic rock tended to limit the number of taxa present, but a useful list of mostly commoner species was soon built up. The fragility of the rock was also in evidence on the steep climb up alongside the burn, but members were still able to keep recording. *Harpanthus flotovianus*, found in small quantity in presumably flushed turf, was a welcome discovery here, and *Grimmia ramondii* was found again; *Jungermannia exsertifolia* was frequent in the burn. The corrie itself, although not outstanding, was certainly of interest. Most members headed for the north-east-facing block scree, which produced many of the species typical of such habitats; the best were

▽ *Pterigynandrum filiforme* by Loch Loyal. C. Rickerby







△ *Sphagnum contortum* on Beinn Stumanadh. C. Rickerby

probably *Antitrichia curtispindula* (rather small and spindly), *Dicranodontium denudatum*, *Kiaeria blyttii*, *Anastrepta orcadensis*, *Anastrophyllum minutum*, *Bazzania tricrenata*, *Blepharostoma trichophyllum*, *Calypogeia azurea*, *Scapania umbrosa* and *Tritomaria quinqueidentata*. On the north-facing cliff above the block scree Mark Lawley found *Herzogiella striatella* and *Hypnum callichroum*. Other species from the corrie included *Campylopus gracilis*, *Orthotrichum rupestre*, *Sarmentypnum sarmentosum* and *Ulota hutchinsiae*.

The afternoon's total was 117 species. As 34 of them had not been found in the morning, the final NC54 total was 157, an improvement on its previous post-1970 total of 80.

### WEDNESDAY 6 JULY

Mark Lawley, Oliver and Clare paid a visit to Beinn Stumanadh, starting recording by Loch Loyal in tetrad NC64J. Due to its good variety of habitats (loch shore, basic flushes, birch woodland, wet heath and both acidic and basic rocks), this tetrad ended the day with the very impressive total of 127 records. It is hard to select highlights as so many good things were found, but perhaps the best



△ Hub, Gordon and Liz in the Chapel Geo. M. Pool

were *Anomobryum concinatum*, *Cynodontium jenneri*, *Glypomitrium daviesii* and *Trichostomum hibernicum*; others included *Kiaeria blyttii*, *Pterigynandrum filiforme*, *Racomitrium sudeticum*, *Ulota hutchinsiae* and *Pleurozia purpurea*. Later, the group moved onto the upper part of the hill, in tetrad NC64P; this produced 57 species in all, many of them typical of block scree and so not found earlier. The best was *Tetralophozia setiformis*\*, a wanted debracketing for v.-c. 108; the area also had *Dicranum flexicaule*, *Grimmia incurva*\* (new v.-c. record, confirmed later by Ron Porley), *Ptilium crista-castrensis*, *Rhabdoweisia fugax*, *R. crenulata*, *Sphagnum quinquefarium*, *Tetraplodon mnioides*, *Anastrepta orcadensis*, *Anastrophyllum minutum*, *Anthelia julacea*, *Bazzania tricrenata*, *Douinia ovata*, *Gymnomitrium crenulatum*, *G. obtusum*, *Mylia taylorii*, *Plagiochila carringtonii* and *Tritomaria quinqueidentata*. A very successful day, taking the NC64 total from 84 to a much more healthy 149.

The other two parties both headed for the Dunnet area of Caithness. The first, consisting of Liz, Michael, Hub, Mark Pool and Gordon, stopped initially at an area of machair grassland at Dunnet Bay (ND2168), where Gordon demonstrated a

colony of *Catoscopium nigratum*. Associated bryophyte species were few, but did include *Ditrichum gracile*\*; this was a welcome new record for v.-c. 109. Leaving this site, the group moved to the coast near the Point of Ness, at roughly ND 207713. After a brief search of the car park and its environs, they struck out over Dwarwick Head to try to add something to the ND27 total (previously 51). Hopes were high of finding *Sanionia orthothecioides*, which is known from further north on Dunnet Head; despite an assiduous search of the wind-clipped heathland, however, this was not found and the group had to be content with a lot of *Isothecium myosuroides* var. *brachythecioides* instead. All in all the bryophyte flora of the area was poor, but a geo on the north side of Dwarwick Head gave a welcome boost to the total, with species such as *Didymodon tophaceus*, *Entosthodon*

▽ Mark Lawley and Oliver on Beinn Stumanadh. C. Rickerby

*obtusum*, *Hookeria lucens*, *Palustriella commutata* and *Leiocolea turbinata*. Further on, a stretch of bogland and a stream side at about ND203719 added another useful batch of records (*Breutelia chrysocoma*, *Sphagnum fimbriatum*, *S. tenellum*, *Riccardia palmata* and *Scapania umbrosa*, among others), so by the time lunch was taken the tetrad total for the day stood at 74.

After lunch the group moved into ND17, a square which had only two previous records and was therefore in serious need of checking! First impressions were not at all favourable; dwarf shrub heath with dry rock outcrops, with only a few bryophytes in evidence. Even the Loch of Bushta failed to meet expectations, although its southern shore did produce some variety in the form of one or two commoner sphagna. The bog at its western end, however, was a much better proposition; species found here included *Entosthodon obtusum*, *Straminergon stramineum*, *Cephalozia connivens*,





*Kurzia trichoclados*, *Lophozia incisa*, *Mylia anomala*, *Riccardia palmata* and *Scapania umbrosa*. Duly inspired, the party then moved to Chapel Geo (ND186728); this added further to the total with species such as *Cratoneuron filicinum*, *Eucladium verticillatum*, *Fissidens bryoides* subsp. *caespitans*\*, *Schistidium maritimum*, *Trichostomum crispulum*, *Aneura pinguis* and *Pellia endiviifolia*. Although the rest of the area surveyed was bryologically poor (much of the heathland had been recently burnt), the final total for ND17 was a rather better 68.

Back in ND27, the group spent some time at Bloody Moss (ND2072). Initial impressions were that the site was well-named, but it did add 10 species to the hectad total. Most were common bogland taxa, but *Cephalozia macrostachya* var. *spiniflora*\*, found by Liz, was a wanted addition to the Caithness list.

The second Dunnet group (Ndurie, Mark Hill, Sean and Chris) went first to Dunnet Head s.s. in ND27D. Although the area of available land was not large and the habitats (coastal turf, roadsides and the margin of the Long Loch) not particularly varied,

67 taxa were recorded; two of them (*Orthotrichum cupulatum*\*, from a lump of concrete near the road, and *Tritomaria exsectiformis*\*, in very small quantity from peat on the loch margin) were wanted for the vice-county. Other good ones were *Archidium alternifolium*, *Campylopus brevipilus*, *Isothecium myosuroides* var. *brachythecioides*, *Sphagnum capillifolium* subsp. *capillifolium* and *Tortella flavovirens*. These records combined with those of Liz's group to give ND27 a total score of 100 taxa.

After leaving Dunnet Head, the group visited three other sites, all in ND15. The first was Backlass Moss (ND15W), an area of wet heath which also contained a large marshy field. Here Sean found *Rhizomnium pseudopunctatum*\* (new to v.-c. 109) and Chris found *Odontoschisma denudatum*\* (a debracketing). Among the 54 other species recorded were *Sarmentypnum sarmentosum*, *Scorpidium cossonii*, *Sphagnum squarrosum*, *Splachnum ampullaceum*, *Tetraplodon mnioides*, *Cladopodiella fluitans*, *Pellia neesiana* and *Riccardia latifrons*. *Polytrichum strictum* was seen in tetrad 15X on the way back to the car.

▷ Typical patterned bog near the Garvault Hotel.  
M. Pool



The second site was Dale Moss, near Westerdale in ND15F, and the roadside to the north. Regrettably, the site had been drained, but a number of bog species still remained (*Campylopus brevipilus*, *Sphagnum magellanicum*, *Cephalozia connivens*, *Mylia anomala*, *Odontoschisma sphagni*, *Scapania irrigua* and *S. umbrosa*, among others). The total from here was 45. Following this, the party paid a visit to the urban bryophytes of Halkirk (ND15J); this produced a new vice-county record (*Schistidium crassipilum*\*, on the bridge) and a debracketing (*Marchantia polymorpha* subsp. *ruderalis*\*), together with 37 other species, of which the most unusual were probably *Orthotrichum pulchellum*, *Schistidium rivulare* and *Syntrichia montana*.

Thanks to a good choice of sites in what appeared to be a rather unpromising hectad, the total from ND15 had reached 105 by the end of the day (formerly 57).

#### THURSDAY 7 JULY

As was becoming usual, the group split for the day. The largest party (Michael, Hub, Sean, Chris, Clare and Gordon) headed for Loch Naver in NC63; this hectad had 60 previous records but was still (as it turned out) much under-recorded. They explored the valley of the Mallart River and its environs in tetrad 63T, which contained a good spread of habitats: a stream with waterfalls, open ground, riverside and various old trees (ash, elm and aspen) and so produced no less than 102 species. There were no great rarities or new v.-c. 108 records, but many were worth noting; examples were *Bartramia ithyphylla*, *Grimmia funalis*, *G. ramondii*, *Orthotrichum striatum*, *Pohlia bulbifera*, *Pterigynandrum filliforme*, *Ulota drummondii*, *Barbilophozia hatcheri* and *Scapania scandica*. *Aulacomnium androgynum*, from a crevice in an acidic crag, was quite a surprise this far north-west; there were also a number of common lowland species, such as *Plagiomnium undulatum* and *Frullania dilatata*, which are much less common in highland localities like this.

After a quick search for masonry species on the Allt Gruama Beg bridge (640386), the group moved

into tetrad NC63J, covering Grumbeg, Loch Molach and the valley of the Allt Gruama Beag. The terrain was mainly acidic, but the habitats were sufficiently varied for a list of 107 species to be compiled before the end of the day. Again, there were no new vice-county records, but the list was still most impressive. *Haplomitrium hookeri* and *Odontoschisma elongatum* were probably the most noteworthy, but the others included *Grimmia hartmanii*, *G. ramondii*, *Orthotrichum rupestre*, *Pterigynandrum filliforme*, *Sphagnum molle*, *Splachnum ampullaceum*, *Ulota hutchinsiae*, *Anastrophyllum minutum*, *Marsupella funckii* and *Riccardia latifrons*. The day was certainly successful in gap-filling; the day's score of 145 for the hectad was well over double the previous total!

Ndurie, Mark Hill and Mark Lawley spent the day in NC74, recording in tetrads P (Beinn Rifa-gil and Loch Rifa-gil) and T (the vicinity of Meall Bad na Cuaiche) after walking in from Strath Naver. Tetrad P contained moorland, crags, bog (some of it patterned) and the margin of Loch Rifa-gil, so a good list was made. *Sphagnum austinii*, *S. fuscum* and *Pleurozia purpurea* were all found in the bog, along with a number of other typical species; the crags had *Kiaeria blyttii* and *Racomitrium ellipticum*. Rocks on the top of the hill produced *Racomitrium sudeticum*, while *Pterigynandrum filliforme* occurred on rocks by the loch; this latter habitat also had *Orthotrichum rupestre* and a single large colony of *Antitrichia curtipendula*. After recording a total of 78 from NC74P, the group moved on into tetrad T. They concentrated on the valley of a northward-flowing stream, centring roughly on NC761477, which contained a variety of habitats (crags, flushes, moorland and the stream itself). Some of the ground was clearly quite basic, as *Pseudocalliergon trifarium* was found in two separate flushes; a few other common basiphiles also occurred. The highlight here, however, was *Cynodontium tenellum*\*, new for v.-c. 108, which was found by Mark Hill in a crevice on the crags at 250 m. Other notables included *Diphyscium foliosum*, *Isothecium myosuroides* var. *brachythecioides*,



*Kiaeria blyttii*, *Polytrichum alpinum*, *Rhabdoweisia fugax*, *Sphagnum capillifolium* subsp. *capillifolium*, *S. quinquefarium* and *Douinia ovata*. 62 taxa were recorded from this tetrad, giving a combined score for NC74 of 106; this was a useful improvement on the original 79.

The third party (Liz, Oliver and Mark Pool) concentrated on hectad NC73, which had an original total of 48. They started at the entrance to the Garvault Hotel (NC7838) and struck southwards to investigate some promising patterned bog. It was unfortunate both that the best area was at the intersection of four tetrads and that a heavy shower of rain came just as they started recording, but perseverance paid off; *Sphagnum austinii* was found in both tetrads searched (Y and Z). Tetrad Y also had *S. fuscum*, *S. magellanicum*, *Calypogeia sphagnicola*, *Cephalozia connivens*\* (found by Oliver; surprisingly a wanted v.-c. 107 debracketing), *C. loitlesbergeri* and *C. macrostachya*, while Z had a selection of the commoner bog species and some roadside ruderals. On leaving the bogland, the party parked in a disused gravel pit by the road at NC787 375, with a view to checking the stream valley to the north. In the event the gravel pit itself proved very interesting, with well over 30 species recorded; three of these (*Bryum pseudotriquetrum* var. *bimum*\*, *B. pseudotriquetrum* var. *pseudotriquetrum*\* (both found by Liz) and *Pohlia drummondii*\* (found by Oliver) were all new vice-county records! *Pohlia annotina* and *P. camptotrachela* were also present, along with a number of lowland ruderals.

Suitably inspired, the group checked out the stream valley and ended with a score of 113 species from tetrad Y, in addition to those from the bogland. Few of the taxa found were of great rarity, but the total was impressive; examples included *Sphagnum magellanicum*, *S. russowii*, *S. squarrosum*, *Blasia pusilla*, *Lophozia incisa*, *Scapania irrigua* and *S. umbrosa*. Further up the valley, near the eastern edge of the tetrad, the burn became surprisingly eutrophicated and uninteresting, so the group decided to leave the valley for the slopes of Ben Griam Mòr. Just before



△ (Top) The delights of Bettyhill. Sean, Hub, Mark Lawley, Gordon and Oliver. M. Pool

(Middle) *Pleurozia* and *Sphagnum tenellum* on Maiden Pap. C. Rickerby

(Bottom) The end of a good day: Mark Lawley and Ndurie near Achiniver. M. Pool

doing so, Liz found *Marchantia polymorpha* subsp. *polymorpha*\* (new to v.-c. 107) growing by the stream; she followed this up a short time later with *Plagiomnium ellipticum*\* from a small hillside flush a little to the north. Not to be outdone, Mark added *Rhizomnium pseudopunctatum*\* from another hillside flush further north again, this time in tetrad Z. This tetrad also proved worthwhile, ending the day with 71 records (again excluding those found in the bog at the start). The southern slopes added the usual species of moorland with flushes, but the most interesting area was the north-western spur of the hill around NC799390. Sandstone crags, often basic, added a number of useful records, including what was probably the smallest *Antitrichia* found all week; others included *Amphidium mougeotii*, *Bartramia ithyphylla*, *Grimmia funalis*, *G. ramondii*, *Hookeria lucens* (unsurprisingly tucked well into a sheltered crevice), *Schistidium apocarpum* s.s., *Seligeria recurvata*, *Trichostomum brachydontium*, *Douinia ovata* and *Frullania fragillifolia*. Other notables from this part of 73Z included *Campylopus brevipilus* and *Tetraplodon mnioides*. A quick check of the bridge in 73Y near the car produced a few more additions, the best being *Orthotrichum cupulatum*.

Hectad NC73 ended the day with 153 taxa, a great improvement.

#### FRIDAY 8 JULY

The great majority of the party went off to sample the delights of Bettyhill, but Mark Hill, Chris and Clare formed a splinter group and visited Maiden Pap and its environs in v.-c. 109. They started at Braemore in tetrad ND03Q, moving westwards into 03K and then to the bogs in 03F south of Lochan nam Bo Riabhach. From here they struck south across the Berriedale Water for Maiden Pap itself; on leaving the hill they returned to Braemore via Braeval. Tetrad 03Q was much the most productive, ending with 102 species. Most were common, but Chris turned up a new vice-county record in the shape of *Orthotrichum lyellii*\*, from a sycamore at Braemore Lodge. Other notables were *Orthotrichum*

*pulchellum*, *O. rupestre*, *Ulota drummondii* and *Zygodon viridissimus* var. *stirtonii*. There were also a large number of lowland species which were useful additions to the list. Tetrad 03K produced a few additions, but the bog near the lochan was better; this had *Sphagnum austinii*, *S. magellanicum*, *Splachnum sphaericum*, *Tetraplodon mnioides*, *Cladopodiella fluitans*, *Kurzia trichoclados*, *Lophozia incisa* and *Mylia anomala*. The Old Red Sandstone of Maiden Pap proved very rough and, in parts, decidedly basic. The resulting species list (87 for tetrad ND02P) was therefore a good one. *Scapania scandica*\* (a new vice-county record) and *Gymnomitrium crenulatum*\* (a debracketing) were both found here by Chris; the former was on a peat bank and the latter on conglomerate rock in open scree. *Grimmia funalis*\*, found by Mark on dry rocks under an overhang, was also a debracketing. Other highlights included *Distichium capillaceum*, *Plagiomnium elatum*, *P. ellipticum*, *Plagiothecium laetum*, *Rhabdoweisia fugax*, *Sphagnum quinquefarium*, *Anastrepta orcadensis*, *Barbilophozia atlantica* and *Tetralophozia setiformis*.

The Bettyhill contingent began recording in NC76A, on the west side of the estuary north of Invernaver. A total of 51 taxa were recorded here; many were the common species of basic sand dunes, but a number of rarer ones soon appeared. Mark Lawley somehow managed to find a single plant of *Haplomitrium hookeri*; other members recorded *Catoscopium nigratum*, *Distichium inclinatum*, *Drepanocladus sendtneri*, *Tortella densa*, *T. fragilis*, *Ulota hutchinsiae* and *Moerckia flotoviana*. Lunch was taken below the crags at NC799608, after which the party (minus another splinter group, of which more below) continued recording in NC66V. This had substantially the same bryoflora as NC76A, but Gordon turned up *Amblyodon dealbatus* and Michael found *Orthothecium rufescens* (new for the hectad) on a crag.

The splinter group consisted of Liz, Mark Lawley, Mark Pool and Ndurie, who hoped to add something from the rather under-recorded hectad NC56 (49 species). Their first stop was a speculative



one at Achininver Beach (NC5764/5765). Roadside banks here were predominantly acidic, but much of the moorland showed significant basic flushing and the tetrad ended up with a total of 99 records. None were rarities, but the list included *Bryum pallescens* (in its usual habitat of tarmac under a crash barrier), *Dicranella subulata*, *Distichium capillaceum*, *Drepanocladus cossonii*, *Entosthodon obtusus*, *Orthotrichum rupestre*, *Zygodon rupestris* and *Riccardia latifrons*; not a bad result for a hectad Gordon had summed up as 'dour'. Moving on from here the group fragmented again; Liz to check the valley of the Strath Melness Burn near Dalvraid (NC564633) and the other three to check the moorland to the south (round about NC556630) in hopes of finding patterned bog. Liz found a credible total of 56 species. As at Achininver none were rare, but the list included a number of lowland species not previously recorded for the hectad; *Bryum argenteum* and *B. dichotomum*, for example, made a surprisingly welcome change!

The two Marks and Ndurie were disappointed, on reaching their target area, to find that most of it had been cut over for peat and there was no sign of the rarer sphagna. They did, however, find *S. magellanicum* in a relatively undisturbed area; a very good candidate for *S. molle* was also seen, but as no one collected any for checking it will have to remain a 'probable'. The group all felt that more could have been achieved if more time had been available; some of the bogland further away from the track still looked to be worth a search. On the way back to the car Mark Pool made a last-gasp check on a roadside elder at West Strathan and found a colony of *Orthotrichum pulchellum*. The hectad total now stands at 122, a considerable improvement.

#### SATURDAY 9 JULY

Although the meeting had officially finished, Liz and Mark Pool paid brief visits to a couple of sites on their way south. Both were in NC83; the intention was to add some species of patterned bogs and man-made habitats to the list. The first site was a

stretch of bog in NC8838, north of Lochan Dubh. Although only 29 species were recorded here, they included *Campylopus brevipilus* (fruiting), *Sphagnum austinii*, *S. fuscum* (fruiting), *Cephalozia leucantha* and *Riccardia latifrons*. A second stop was made at Kinbrace, where the cemetery and the neighbouring stretch of the Bannock Burn (NC8531) were checked. The former produced some useful records from walls and tombstones; these included *Orthotrichum anomalum*, *O. cupulatum* and *Schistidium apocarpum* s.s. The burn itself was disappointing, as it was almost devoid of rocks and the reachable bank was almost devoid of bryophytes. Some consolation came from a small tributary stream and the associated marsh; this had, among others, *Calliergon cordifolium*, *Plagiomnium ellipticum* (although a wanted vice-county record, this was unfortunately not collected and so could not be officially confirmed) and *Sphagnum angustifolium*. These and other records combined to give a total of 50 for tetrad NC83K, while the surveyors had achieved their aim of adding lowland and patterned bog species to the hectad.

The meeting had certainly achieved its aim of filling in gaps. Over 3,200 individual records were made (the exact total is uncertain as some of us ... no names ... still have specimens to check), including 31 new vice-county records and 12 debracketings (again, more may surface in the future). Our thanks go to all those who made it possible: to the various landowners who gave permission to visit their property; to the management of the Halladale Inn, for most of the accommodation and for restorative meals in the evenings; to whoever arranged the weather (in spite of torrential rain in the Inverness area further south, the group had very little); and most of all to Liz, who put in an enormous amount of organizational work and also kindly provided microscopes, maps and textbooks to those who needed them.

#### Mark Pool

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