

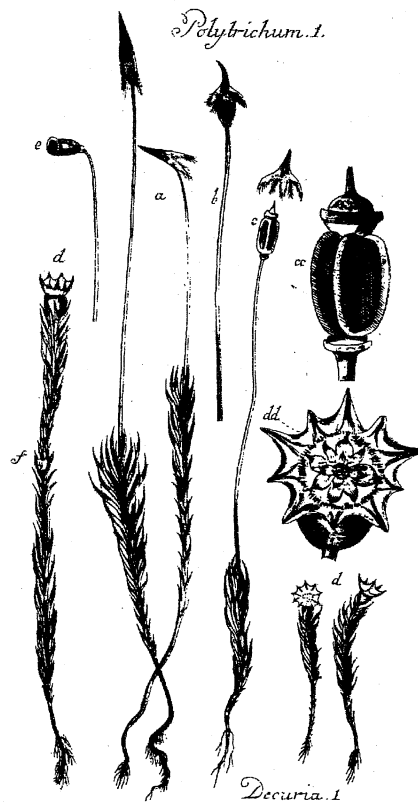


BULLETIN  
OF THE  
BRITISH  
BRYOLOGICAL SOCIETY

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*Edited by A.R. Perry*

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## BRITISH BRYOLOGICAL SOCIETY

The British Bryological Society exists to promote the study of mosses and liverworts. The Society was constituted in its present form in 1923, replacing the Moss Exchange Club founded in 1896.

Two Field Meetings, each usually of a week's duration are held every year in districts of bryological interest. In addition two weekend meetings are held in the autumn, one for the Annual General Meeting, the presentation of papers and fieldwork, and the other for practical instruction in the examination and identification of bryophytes.

Members of the Society are entitled to receive the Society's *Journal* and its *Bulletin* free of charge, to borrow books, periodicals and reprints from the Society's library, to consult or borrow specimens from the Society's herbarium, and to consult the Society's panel of referees for assistance in the identification of specimens.

The subscription, due in advance on 1 January each year, is £20.00 for Ordinary Members, £1.00 for Family Members (who do not receive the *Journal*) and £7.50 for Junior Members.

Applications for membership should be addressed to the Membership Secretary, from whom further particulars may be obtained.

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The cover illustration is of *Polytrichum commune caule simplici anthera parallelepipedata*, Plate 1, Decuria 1, of A.F. Happe, *Flora cryptogamica depicta seu muscorum et lichenum usque affinium plantarum icones*, Berolini 1783. The height of the original is approximately 139 mm.



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## SUBSCRIPTIONS 1996

You should have been notified that subscriptions were increased this year. New rates are as follows:

Ordinary member:	£20.00
Student member:	£ 7.50
Family member:	£ 1.00

Subscriptions were due on 1 January and confirm entitlement to the *Journal of Bryology* and the *Bulletin* for the current year as well as the other services provided by the Society. If you have not already paid your subscription then an early remittance to the Honorary Membership Secretary\* will help to prevent further postage costs.

We are aware that some mail has gone astray and therefore apologies are due to some members who have been punctilious in sending off their subscriptions but who nevertheless may get reminders. In particular this may have caused some problems with standing order mandates.

\* Mr A.V. Smith, 1 Carr Meadow Cottages, Glossop Road, Little Hayfield, Stockport, Cheshire, SK12 5NR, UK.

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## PROCEEDINGS OF THE BRITISH BRYOLOGICAL SOCIETY

### SPRING FIELD MEETING, AMBLESIDE, 1995

The Society's 1995 Spring Meeting took place on 5-12 April, the headquarters hotel being the Queen's Hotel, Ambleside. The Local Secretary was Peter Bullard, Director of the Cumbria Wildlife Trust; much of the meeting was devoted to surveying the bryophytes of the interesting Atlantic woodlands of the area.

#### WEDNESDAY 5 APRIL

The weather was typically Lakeland as Peter Bullard led a small but enthusiastic party for an afternoon in Stockghyll Park. This area, just on the outskirts of Ambleside, consists of a somewhat altered deciduous woodland through which flows a sizeable beck with a fine waterfall. Initial impressions were of a bryoflora dominated by fairly common, calcifuge species, but an examination of the valley of a small tributary stream quickly produced better things. Here Peter Martin turned up *Mnium stellare* on the masonry of a bridge, while *Porella cordaeana* was on damp rocks nearby. After some time the party crossed to the right bank of Stock Ghyll, and were soon heavily involved with the flora of a dripping rock face. This, like much of the area to be visited during the week, was made up of rocks of the Borrowdale Volcanic Series whose strata are often basic, sometimes quite strongly so, and this appeared to be the case here. The cliff had sheets of *Cratoneuron commutatum*, together with much *Pellia endivifolia* and other common calcicoles. *Trichocolea tomentella* was present in one spot. Moving on up the valley, the party was joined by Jeff Bates and Sean O'Leary who had come via the other side of the ghyll and over the bridge further up. Their

expertise soon led us to a stretch of wall which had, in addition to a number of common lowland calcicoles, two good patches of *Barbilophozia barbata*.

The weather was starting to improve as members came back down the other side of the valley. Whether for that reason, or coincidentally, the tally of unusual species began to rise. The first was a patch of *Hookeria lucens*, growing by a little stream; although by no means rare in the Lakes, this produced some excitement among the south-eastern contingent. *Nowellia curvifolia*, growing in some quantity on a rotting log, was another source of interest. Jeff Bates demonstrated *Dicranodontium denudatum* (on humus) and *Dicranum montanum* (on bark); the latter species had also been seen, but not recognized, earlier in the afternoon. By the time the party dispersed a very presentable list had been compiled, the rain had stopped and hopes were high for the following day.

#### THURSDAY 6 APRIL

The previous night's forecast had been correct, and members assembled at the headquarters hotel in beautiful weather. The morning's venue was Dorothy Farrer's Spring Wood, a Cumbria Wildlife Trust reserve near the village of Staveley. (The word 'spring' is used locally to mean a coppiced woodland.) The reserve consists of two separate blocks, with some privately-owned woodland between them. The bedrock is Silurian slate. The dominant tree is oak, with ash, elm and other species in the wetter areas.

The southern compartment (Dorothy Farrer's Spring Wood s.s.) was visited first. Initial impressions were a little disappointing, most of the species seen being those common ones typical of acid oak woodland. *Metzgeria conjugata* soon turned up in small quantity on rock by the stream, while Peter Martin found *Barbilophozia barbata* on an old wall near the edge of the site. A large shaded rock slab nearby was largely covered in *Metzgeria temperata* and *Orthodontium lineare* was found, fruiting copiously on open ground not far away.

The northern part of the reserve was of much greater interest, largely because it was damper. Perhaps the best among the considerable number of species here were *Jamesoniella autumnalis*, *Ptilidium pulcherrimum* (on bark at one spot), *Trichocolea* and *Dicranum montanum*; others included *Nowellia*, *Hylocomium brevirostre* and *Hookeria*. Although the bryoflora of this area was generally good, there was a paucity of epiphytic species, presumably due either to excessive exposure or to air pollution.

As a contrast to the morning's venue, that for the afternoon was the exposed limestone of Hutton Roof Crag (near Burton in Kendal) where our leader was Kerry Milligan of the Cumbria Wildlife Trust. The arrival of Martin Wigginton, John Blackburn, Jeremy Roberts and others made for a larger group and doubtless increased the number of records made.

In common with much of the Carboniferous Limestone of the area, Hutton Roof Crag shows a surprising variety of basic and acid habitats, the latter being caused by leaching and the build-up of peat over the limestone where the gradients are gentle. This contrast was evident almost as soon as the site was reached: the shaded limestone pavements sported an abundance of such species as *Tortella tortuosa*, *Neckera crispa* and *Rhynchostegium murale*, while the open leached track nearby had *Polytrichum juniperinum*, *Campylopus pyriformis*, *C. fragilis* (fruiting) and *C. introflexus*. There was also at least one good colony of *Bryum bornholmense*. Later on, the calcifuges *Orthodontium lineare*, *Plagiothecium undulatum*, *Pleurozium schreberi*, *Pellia epiphylla* (fruiting) and surprisingly, *Nowellia curvifolia* were

seen, and also *Ditrichum flexicaule* s.s. and *D. crispatisimum*, *Barbula hornschurchiana*, *Mnium stellare*, *Climacium dendroides*, *Thuidium delicatulum*, *Leiocolea alpestris* and *Plagiochila britannica* (this last species in two sites). Pride of place must go to Martin Wigginton's discovery of *Tortella densa*, a plant he knows from the nearby Dalton Crag. As at Dorothy Farrer's Spring Wood, the epiphyte flora was poor, the rarest species seen being *Ulota crispa* var. *crispa* and *Orthotrichum affine* which were both fruiting.

#### FRIDAY 7 APRIL

With a number of additional members having arrived the previous evening, it was a large group which set off for Patterdale. The goal was Birk Fell Wood, a birch/juniper wood on the southern shore of Ullswater which was known to have an interesting bryophyte flora, with old records for *Ptilium crista-castrensis* and *Hylocomium umbratum*. The excursion was led by Allan Stewart, a Conservation Officer with English Nature.

Although, to save time, bryologizing during the walk-in was discouraged, Martha Newton still managed to demonstrate a splendid colony of *Nowellia* on a large log by the path. The presence of such a shelter-loving plant in a site as open as this is a good indication of the damp, mild climate of this area. Luckily, the weather on the day was fine, but windy. Once arrived at the wood, members were quickly in the head-down position characteristic of bryologists in interesting areas. Early finds were *Sphagnum quinquefarium*, *Bryum alpinum*, *Breutelia chrysocoma*, *Hookeria* and *Neckera crispa* which, with other species typical of locally base-rich upland sites, proved of great interest to those of us from the south. The group soon fragmented, with much of the wood being worked by various people during the course of the day.

The bouldery shore of the lake was visited and found to have a luxuriant cover of mostly frequent species of which typical ones were *Lejeunea cavifolia*, *Cinclidotus fontinaloides*, *Thamnobryum alopecurum* and (locally) *Climacium dendroides*. Martha Newton recorded, among other things, *Sphagnum russowii*, *Rhabdoweisia crenulata*, *Racomitrium sudeticum* and *Pohlia elongata*. Ron Porley found *Barbilophozia atlantica* and *Plagiopus oederi*, and Martin Wigginton discovered *Dicranum montanum*. Jeff Bates and others made a determined search in the area where *Ptilium* and *Hylocomium umbratum* had previously been seen, but unfortunately were able to confirm only the latter. Gordon Rothero led a small party of enthusiasts up an interesting stream gully which, together with its environs, produced *Riccardia palmata*, *Bartramia halleriana* and *Hypnum callichroum* as well as a number of commoner species. Mark Pool found a *Thuidium* in a flush, which later keyed out as *T. delicatulum*, while *Racomitrium elongatum* was by the track above Blowick on the way back (the species of the former *R. canescens* aggregate are still under-recorded over much of the country). All in all, a most interesting day.

#### SATURDAY 8 APRIL

With the attendance now at its highest, the day was scheduled for a visit to the National Trust-owned Troutbeck valley. This is a large area containing a wide range of habitats, and hopes were high for a good total of species (the weather was still fine, which seemed a favourable omen). The leader was John Hoosen, the National Trust's Regional Biologist.

The cars were parked near Hagg Bridge, and members walked by way of the farm of Troutbeck Park to Hird Wood, where the serious bryology started. Hird Wood was found to

be of very considerable interest, the wood having a number of local western species, while the ravine of the Trout Beck had interesting basic rock. Martin Wigginton found *Scapania aequiloba*, growing with *Seligeria recurvata* on moist shaded rock by the beck and Gordon Rothero found *Jubula hutchinsiae* in a dark wet crevice nearby. Other species found near the beck included *Cololejeunea calcarea* and *Jungermannia pumila* (both fertile), *Barbilophozia atlantica* and *Plagiochila britannica*. The wood, which contained some very wet flushes, gave *Metzgeria leptoneura*, *Nowellia*, *Trichocolea*, *Dicranodontium denudatum* and *Dicranum fuscescens*. It says something for the interest of the week so far that many of the southern contingent were becoming quite blasé about these!

So rich was the woodland that a list of well over a hundred taxa had been compiled by the time members emerged (some reluctantly) for lunch which was taken by a small rock outcrop just north of the wood. During the afternoon the party became scattered all over the upper dale but unfortunately no-one reached the very head, around Threshthwaite Mouth, but the rest of the area was quite well-worked. After finding *Dryptodon patens* on a boulder in the stream, Ron Porley teamed up with Nick Hodgetts and others to visit Doup Crag where they recorded a number of species, of which the rarest was *Oedipodium griffithianum*. Gordon Rothero's group went to the impressive ravine of Blue Gill, under Froswick. This was basic, and produced a good list of taxa of which the most noteworthy were probably *Cololejeunea calcarea* and *Pterogonium gracile*. Martha Newton, in the course of a day taking in Hird Wood, Doup Crag and Hagg Gill, produced a list which rivalled those of the rest of us put together with highlights including *Jungermannia exsertifolia*, *Thuidium delicatulum* and *Calliargon sarmentosum*. *Dicranum montanum* was found again, this time on sycamore bark by a stream at an altitude of some 300 metres. The final total for the day was prodigious. While Troutbeck is not in the same class as, for example, Ben Lawers, it certainly holds great bryological promise.

Peter Martin, anxious to see some montane habitats, had spent the day on Helvellyn. He left his car at Thirlmere, and visited the summit and the vicinity of Red Tarn where he recorded 46 species, the most noteworthy being *Barbilophozia floerkei*, *Polytrichum alpinum*, *Grimmia donniana* and *Scorpidium scorpioides*.

A meeting of the Council was held during the evening in the Queen's Hotel.

## SUNDAY 9 APRIL

The morning's venue was the wooded valley of the Scandale Beck above Low Sweden Bridge where Peter Bullard was the leader. The bridge was of interest, with *Mnium stellare* and *Rhynchostegium murale*, while a tree alongside had fruiting *Orthotrichum stramineum*. A short distance upstream, a large rotting log was found to be liberally covered with *Jamesoniella autumnalis* and *Nowellia curvifolia*. The rest of the valley proved so rich that 120 species had been recorded by the time lunch was taken some three hours later. The most interesting included *Blepharostoma trichophyllum*, *Trichocolea tomentella*, *Barbilophozia barbata*, *Jungermannia paroica*, *Ptilidium pulcherrimum*, *Dicranodontium denudatum* and *Bartramia ithyphylla*. After lunch a very brief visit was paid to a site further up the hillside, west of Peel Wood where Gordon Rothero rounded off the morning's work by finding *Leucodon sciuroides* (a rare plant in the Lakes) carpeting the trunk of a moribund ash.

In the afternoon, members visited two sites on Loughrigg Fell. The first was the SSSI of Miller Brow, which is basically damp rocky pasture with some scrubby woodland and a

stream. Despite its small size the area was surprisingly productive. Nothing of great rarity was found, but species such as *Leiocolea bantriensis*, *Myliia taylorii*, *Sphagnum contortum*, *S. teres* and *Drepanocladus uncinatus* were of interest. After a time the party moved on to look at Black Mire (with the exception of Mark Pool who had been seduced by the delights of Miller Brow and had stayed on to try to boost the score). The appropriately-named Black Mire was a generally wetter site than Miller Brow, and had a good variety of sphagna which included *S. cuspidatum*, *S. teres* and *S. warnstorffii* associated with *Odontoschisma sphagni*, *Myliia taylorii* and *Riccardia multifida*.

Peter Martin had again gone off alone, this time to Birk Hagg near Rydal and returned with a short, but interesting, list of species including *Jamesoniella autumnalis*, *Gymnostomum aeruginosum* and *Orthothecium intricatum*. Another splinter group, composed of Tim Blackstock, Nick Hodgetts, Brian O'Shea and Ron Porley, revisited the Red Tarn area and came back with an impressive tally of records including *Marsupella sprucei*, *M. adusta*, *Oedipodium griffithianum*, *Calliergon sarmentosum* and *Isothecium myosuroides* var. *brachythecioides*.

#### MONDAY 10 APRIL

The group, now considerably reduced in numbers after the weekend, spent the morning in the woods at Birk Hagg, Rydal, under the guidance of Peter Bullard. They concentrated on the valley of the Rydal Beck itself (Peter Martin's earlier visit being to the tributary valley to the east). *Jamesoniella autumnalis*, *Nowellia curvifolia* and *Dicranodontium denudatum* were quickly found, as was a *Leucobryum* which turned out on later microscopic examination to be *L. juniperoides* (this plant was recorded in several other sites during the week). A fairly intensive search for *Jubula hutchinsiae*, previously recorded in these woods, proved fruitless, but compensation was provided by *Plagiochila punctata*, found on a tree trunk along with much greater quantities of *P. spinulosa*. Also on tree trunks were several colonies of *Dicranum montanum*, a plant which appears to be at least locally established in this area. Unfortunately, time did not permit as full an investigation of this valley as some would have liked but it certainly seems to have a rich bryoflora.

The afternoon excursion involved a considerable drive: the venue was the Howk at Caldbeck, a small Carboniferous limestone gorge in the valley of the river Caldew which the Society had visited the site previously, in 1959, and found such species as *Fissidens rufulus* and *Taxiphyllum wissgrillii*. En route Harold Whitehouse led a small party to try and refine *Grimmia anodon* in one of its two British sites, at Raven Crag. A plant found was initially thought to be the *Grimmia*, but subsequent checking made it *Coscinodon cribrosus*; further research has shown that the original specimen from here is also *C. cribrosus*. There is now some doubt whether *G. anodon* is still present in Britain.

Reunited in the Caldbeck car park, the group was led to the Howk by Phil Taylor, an ecologist from the Lake District National Park Authority. The site proved interesting from the first, *Porella cordaeana* being present on waterside tree roots and *Cololejeunea rossettiana* both on vertical limestone and on the mosses growing on it. Further searching resulted in *Barbula sinuosa* on shaded rock and roots, and much more of the *Porella* on rocks by the river. Some spectacular-looking climbing by Jon Graham and others should have ensured that little was missed! *Fissidens rufulus* had not so far been in evidence, but a small collection made by Ron Porley turned out to be this species when checked later. The pleasant limestone woodland above the gorge gave no great surprises, but there was a considerable



number of common basicoles. In addition, a dying elm by the river produced fruiting *Orthotrichum stramineum* and the only *Neckera pumila* seen on the trip. *Barbula hornschurchiana*, on gravel by the car park, was a new record for the *Atlas*.

## TUESDAY 11 APRIL

Carboniferous Limestone again provided the venue for the morning's visit, which took in the Cumbria Trust's Hervey Nature Reserve on Whitbarrow. This was very different from the Howk, being a high, bare escarpment with a definite shortage of water. David Harpley (Conservation Manager with the Cumbria Wildlife Trust) was the leader. The approach was made by the field path from Witherslack Hall and then up the steep western face of the hill.

The Hervey Reserve is rather similar to Hutton Roof Crag, but seems to have more bare rock and to be more windswept. The dominant plant over much of the site is the Blue Moor-grass (*Sesleria caerulea*), which is so common on this northern limestone and yet so rare elsewhere. Bryophytes are few and far between on the open limestone, but are common in the grikes of the pavements and in sheltered sites among other vegetation. As at Hutton Roof Crag, calcifuges (*Pleurozium schreberi*, *Hylocomium splendens*) were quite frequent where leaching had taken place.

*Rhytidium rugosum* was found to be scattered locally over the site (usually in small amounts) after a number of mis-identifications involving *Hyprnum lacunosum*. Lunch was taken by Argles Tarn which was surrounded by wet basic ground where the dominant bryophytes were *Scorpidium scorpioides* and *Drepanocladus revolvens*. The scrubby woodland nearby, in addition to the local Baneberry (*Actaea spicata*), produced a variety of mostly common bryophytes, the rarest being *Hylocomium brevirostre*.

As a total change, the afternoon excursion was in the lowland raised bog of Meathop Moss where, as in the morning, the leader was David Harpley. The approach was made from the east, along a track through the surrounding plantations where *Sphagnum fimbriatum* was quickly found by a runnel under the trees. First impressions of the Moss were that it had a good variety of sphagna (ten taxa were recorded, equalling the previous total) but that few other bryophyte species were in evidence though there were several good colonies of *S. magellanicum*, and many of the hummocks sprouted populations of *Polytrichum alpestre*. *Odontoschisma sphagni* was abundant among the *Sphagnum* spp., often associated with *Cephalozia connivens* and occasionally with *Kurzia pauciflora*. The previous season's cranberries were sampled by some members and pronounced to be slightly alcoholic which may explain why nearly all the *Mylia anomala* found during the afternoon turned out to be *Odontoschisma sphagni*! The genuine article was, however, eventually found, on a rotting conifer stump among the *Sphagnum* hummocks. A lucky find on the way back to the cars was a rotting log with both *Nowellia* and *Odontoschisma denudatum*.

## WEDNESDAY 12 APRIL

For this, the last morning of the trip, Peter Bullard led the half-dozen or so remaining members on a visit to Skelghyll Wood which lies just south of Ambleside, and overlies Borrowdale Volcanic rocks with a thin band of Coniston Limestone. Much of the site seemed rather less basic than the other local woodlands we had visited; the reason for this was not obvious, but may be to do with the fact that it lies very near the boundary of the Borrowdale rocks with the neighbouring Silurian slates.

The morning started well, with a good list of species from a decidedly basic wall by the track. *Porella arboris-vitae* was perhaps the pick of the crop here. Once in the wood proper the group split up, the more aquatic members following the bed of the Stencher Beck while the rest kept on (or near) the track. *Bazzania trilobata* (a plant seen in almost every woodland visited during the week other than those on limestone) and fruiting *Hookeria* were quickly found, but on the whole the beck ravine proved somewhat disappointing. *Jamesoniella autumnalis*, found on a rotting log well up the side of the valley, was rather a surprise, while another rotting log nearby was well colonized by *Riccardia palmata*. *Plagiochila killarniensis*, seen on a shaded rock face further up the beck, was of considerable interest but *Dicranodontium denudatum* had been seen so many times during the week that it was almost taken for granted!

Most of the party had to leave immediately after lunch, but John Blackburn and Mark Pool stayed on for a last-gasp attempt on what they hoped was Coniston Limestone around Jenkin Crag. In fact this rock seemed less basic than that explored during the morning, and produced no real calcicoles. There was, however, a lot of *Leucobryum juniperoideum*, which was some consolation.

In an area as well-worked as that around Ambleside, it is hardly surprising that the week produced no new vice-county records. However, a surprising number of new 10-km square records was made for the Mapping Scheme, and a considerable amount of much-needed recording work was done in the area's woodlands. In addition to the official excursions, there was a great amount of informal contact between members during the evenings. I know I found this very helpful, and I believe the same goes for many others. While on this topic, my thanks go to Harold Whitehouse and to Christine Rieser for showing their superb bryophyte photographs which were both entertaining and useful.

Our thanks as a society go to a variety of people and organizations. These are: whoever arranged the weather, which was perfect; the Queen's Hotel for their cuisine and their comfort (and for their tolerance of parties of booted and kitted bryologists in their lounge for the morning briefings); the various landowners who gave permission to visit, and in most cases to collect on, their land; all those who led walks, including any I may have inadvertently missed from the account above; and lastly, but by no means least, to Peter Bullard, whose sheer hard work as local secretary did so much to make the meeting the success it was.

MARK POOL

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## SUMMER FIELD MEETING, NORTHUMBERLAND, 1995

The attendance at this meeting was unusually low, no doubt owing at least in part to the entrancing alternative of the Tatra only a few days later. The leader, Stuart Hedley of the Northumbria Team of English Nature, ministered to the regulars – Frank Lammiman, Christine Rieser and Cliff Townsend, together with a welcome Belgian bryologist, Alain Vanderpoorten. John Blackburn came up on five days, Dr John Richards for three, and Steve Wharton for one.

Excursions were chiefly in S. Northumberland (v.-c. 67), with forays into N. Northumberland (v.-c. 68) and Durham (v.-c. 66). The meeting took place in arguably the hottest and driest part of a hot, dry summer – tiring, and with bryophytes so desiccated that

sprays were in constant use. The main object was recording of bryophytes in English Nature sites, mostly designated S.S.S.I. or National Nature Reserve.

#### THURSDAY 27 JULY

On this first day a long journey was made to The Cheviot, where the well-known locality of the Bizzle Burn was investigated – usually just referred to as The Bizzle, though on this occasion it might more aptly have been called The Frizzle! This stream, bordered with extensive outcrops of granite and smaller areas of base-rich lavas, had been visited on two previous B.B.S. meetings based on Wooler in 1963 and 1984. No doubt owing to the longer journey, fewer pairs of eyes and the very dry conditions, much seen on these earlier trips was missed. However, John Blackburn turned up *Hygrohypnum duriusculum*\* in the swift upper part of the stream, and other species of interest included *Andreaea alpina*, *Kiaeria blyttii*, *Barbilophozia atlantica*, *Fissidens osmundoides*, *Grimmia torquata*, *Plagiobryum zieri*, *Sphagnum russowii*, *Gymnomitrium obtusum* and *Cololejeunea calcarea*. In spite of considerable attention to small, flat, reddish patches of *Andreaea*, an attempt to refind *A. mutabilis*, collected here in 1930 by J.B. Duncan and Evelyn Lobley, was unsuccessful.

#### FRIDAY 28 JULY

The morning of the second day was spent in Hareshaw Dene, an SSSI with a wooded river gorge cut through sandstones of the Lower Carboniferous, situated just north of Bellingham. This produced many of the species which might have been expected of such a situation, including *Scapania gracilis*, *Dicranum fuscescens*, *Fissidens crassipes*, *Neckera crispa*, *Hookeria lucens* and *Hyoconium armoricum*, but without the richness that might be encountered in similar areas in western England. *Dicranella cerviculata* and *Pohlia annotina* occurred on a bank of fine sandy soil by the stream but a clearly base-rich area nearby was disappointing, containing only common species. *Sphagnum fimbriatum* was near the stream, and in the upper parts of it *Jungermannia atrovirens* was common, with occasional *J. pumila*. Rocks by the path not far below the small waterfall at the head of the dene produced a good quantity of fruiting *Tetradontium brownianum*, while a rocky cavity near the fall itself yielded *Seligeria pusilla* and *S. donniana*; *Scapania umbrosa* was on a single rotting log.

In the afternoon we moved on to Hesleyside Park, also with old mature woodland, a smaller stream and waterfall, but much drier and less extensive. It supports a rich lichen flora, but a much less exciting assembly of bryophytes, of which the most noteworthy were *Dicranum fuscescens*, *Hookeria lucens*, *Pseudephemerum nitidum*, *Blepharostoma trichophyllum* and *Plagiothecium latebricola*. *Tetradontium brownianum* turned up here also, in two localities not far below the waterfall, as did *Scapania umbrosa*.

#### SATURDAY 29 JULY

Kielder Forest is a horribly extensive area of planted conifers, but our objective was an area of unplanted moorland west of this, on the borders of Northumberland and Cumbria, though the sandstone crags we were to inspect are all within v.-c. 67 and rarely visited. The first stop was at Gill Pike. At first sight the small area of acid crag with large outcropping boulders in the surrounding moorland was uninspiring, but it was here that the most pleasing find of the week, *Dicranodontium asperulum*\*, new to England, was made. There was also a good haul of *Barbilophozia*, Alain turning up *B. kunzeana*, Christine *B. atlantica*, and there was a good deal of *B. attenuata*; also present were *Bazzania trilobata* and *Mylia taylorii* in quantity.

Nine species of *Sphagnum* occurred on the surrounding moorland, including *S. tenellum*, *S. compactum* and *S. magellanicum*. A distant view of Grey Mare's Crag, also considered for a visit, showed them to be even more limited and, a long trudge through deep untracked heather in the heat being felt unattractive, it was decided to adjourn to a more accessible site. Pippa Merricks, our E.N. mentor while Stuart had his day off, then took us to Seven Linns, an attractive stream area with a gorge below. Only a flying visit was possible, and we did not get into the gorge. Little remarkable was found in the way of bryophytes, though Christine turned up *Scapania subalpina* and a dark form of *Hyocomium armoricum* growing in a rather dry rock crevice perplexed us in the field. Alain did, however, find the filmy fern *Hymenophyllum wilsonii*, a rarity in Northumberland.

A move was then made to Muckle Samuel's Crag (soon conveniently abbreviated to 'Big Sam's'), another area known for good lichens but apparently not investigated for bryophytes. On the conveniently trackside small system of crags and boulders, Dr Oliver Gilbert, our companion for the day engaged on a lichen survey, was able to demonstrate some of the rarer species of these plants. The bryophytes were of interest, the more engaging being *Dicranum scottianum*, *Leptodontium flexifolium* and *Lepidozia cupressina*; *Scapania gracilis*, *Bazzania trilobata*, *Lophozia ventricosa* var. *ventricosa*\* and *Ptilidium ciliare* were also around, while just before departure John B. turned up *Dicranella staphylina* and Alain found a single tuft of *Tetraplodon mnioides*. Tiny tufts along crevices raised hopes of *Orthodontium gracile*, but subsequent large swards and later microscopic examination sadly dashed these hopes.

#### SUNDAY 30 JULY

The first visit of the day was to the famed valley mire, Muckle Moss, near Bardon Mill. This had clearly suffered in the drought. Many *Sphagna* were desiccated, and those who had visited the mire some years before remarked that it was now much easier to walk across, and very little of the surface water which previously characterised the deep lagg area was to be seen. Although eight of the commoner species of *Sphagnum* were found neither of the two specialities, *S. balticum* and *S. majus*, was encountered by anyone. The known association of *S. balticum* and *Andromeda polifolia* led Cliff to spend most of his time looking for *Dicranum leioneuron*, of which two small colonies were found; the only previous Northumberland record of this species was from Haining Head Moss, some distance westward. Other notable bryophytes seen were *Calliergon stramineum*, *Polytrichum alpestre*, *Calypogeia sphagnicola*, *Cephalozia connivens*, *Mylia anomala* and *Odontoschisma sphagni*. In the afternoon a visit was paid to the Mill Burn at Elsdon, some distance to the north-east. This is a stream on the Carboniferous Limestone with basic flushes and *Sesleria* grassland. The bryophyte flora was not rich, but included a few species not encountered previously, such as *Climacium dendroides*, *Philonotis calcarea*, *Pohlia carnea*, *Campyllum stellatum* and *Aneura pinguis*.

#### MONDAY 31 JULY

On this day we were allocated the Muggleswick Woods and Derwent Gorge National Nature Reserve – an extensive area of woodland on sheltered slopes about four miles WSW of Consett. The upper slopes are of dry acidic soils, but damper base-rich soils occur along the bottom of the Derwent Gorge. Here again it would seem that the lichen flora is richer than that of the bryophytes, but species of interest occurred – principally along the stream, though one patch of *Brachythecium glareosum* was found on a sandy/marly bank descending towards this. One peculiarity of the week hitherto had been the total absence of *Orthotricha*;

here, however, we came across five – *O. affine*, *O. anomalum*, *O. diaphanum*, *O. stramineum* and *O. striatum*. as well as both varieties of *Uloa crispa*. Species worth mentioning in the river and areas adjacent were *Hygrohypnum luridum*, *Bryum flaccidum*, *Cirriphyllum piliferum*, *Dicranum tauricum* c.fr. on a single rotting tree, *Tetraphis pellucida* also c.fr., *Calypogeia arguta*, *Jungermannia atrovirens*, *Mnium stellare*, *Homalia trichomanoides* and *Scapania nemorea*. *Pseudephemerum nitidum* and *Dicranella schreberiana* were found in damp cart ruts.

## TUESDAY 1 AUGUST

For the final day the well-known locality of Widdybank Fell in Upper Teesdale was scheduled. This too was considerably desiccated, and streams which would normally be running sufficiently to irrigate the tufts of *Gymnostomum recurvirostrum* and other bryophytes growing along them were now almost totally dried up. We made our way across sugar limestone patches and the acid ground between, finding *Breutelia chrysocoma*, *Bryum inclinatum*, *B. algovicum* var. *rutheanum*, *Campylium chrysophyllum*, *C. stellatum* and var. *protensum*, *Fissidens dubius* (*cristatus*), *Gymnostomum aeruginosum*, *Didymodon ferrugineus* (*Barbula reflexa*), *Lophozia excisa*, *Ditrichum crispatisimum*, *Philonotis calcarea*, *Racomitrium canescens*, *R. ericoides* and *R. elongatum*, *Leiocolea alpestris*, *Cololejeunea calcarea*, *Rhytidium rugosum*, *Tortella densa* and *Calliergon sarmentosum*. From here we passed through peat hags to the top of Falcon Clints, finding *Dicranella cerviculata* on vertical peat banks. Although several pairs of beady eyes sought it, *Aplodon wormskjoldii* was not seen – merely its poor relation *Splachnum ovatum*.

Working along the top of Falcon Clints, two or three species of the *Racomitrium heterostichum* group were found, together with *Grimmia trichophylla*. Continual sampling was made of fruiting nervate *Andreaea* looking at all unlike the masses of *A. rothii* spp. *falcata*, in the hopes of rediscovering *A. megistospora*, collected here by Black in 1854. This collecting continued beneath the crags, but in vain in spite of use of the spray; all gatherings subsequently proved to be *rothii*. On rock ledges on the crags were found *Gymnomitrium obtusum*, *Diphyscium foliosum*, *Grimmia funalis*, *G. torquata*, *Campylopus atrovirens*, *Bryum alpinum*, *Rhabdoweisia crenulata* and *R. fugax*. Meanwhile, other members of the party were in constant danger of immersion as they scraped rocks in the river in search of *Schistidium agassizii*, Steve being successful in finding a single small piece, also picking up *Hygrohypnum eugyrium*. Both subspecies of *Schistidium rivulare* were about, as was *Racomitrium aquaticum* and, on a rock by the river, *Pterogonium gracile*.

So ended a week which, although not notable for assemblies of rarities, still allowed all participating the chance of seeing something new, and of rendering good service to English Nature. Sincere thanks are due to Stuart Hedley and Pippa Merricks of E.N. for organizing, and guiding us on, our excursions, and to John Richards for sharing his fund of local knowledge. I am grateful to those participating for sending notes and records which have helped in the preparation of this report.

CLIFF TOWNSEND

## AGM AND SYMPOSIUM MEETING, UNIVERSITY OF EAST ANGLIA, 1995

The modernistic setting of the campus of the University of East Anglia was the venue for this year's AGM meeting, though many of the concrete structures that must have looked futuristic in the 1960s are now showing their age, with a attractive veneer of mosses and lichens becoming evident. Thanks are due to all the speakers at this meeting and especially to Mr Richard Fisk, whose efficient and caring organization of the weekend ensured that a good time was had by all. The following summaries of talks have been provided by the authors.

NICK HODGETTS

♦ **Prof. J.G. Duckett** (Queen Mary and Westfield College, London), **Mr N.G. Hodgetts** (JNCC, Peterborough) & **Mr H.W. Matcham** (Chichester): 'Bryologizing in Lesotho.'

The object of this trip, funded by the British Council, was to carry out bryophyte surveys on the last remaining substantial piece of forest in the country, *Leucosidea* woodland in the upper Hlotse valley, and on montane bogs, and also to make bird lists for each locality as far as possible, with the intention of drawing attention to the importance of these habitats for bryophytes and the threats to them, and making recommendations for their conservation. The fieldwork was carried out with the co-operation of the Lesotho Highland Development Authority (LHDA). Additional principal members of the expedition were Mrs Louise Matcham, who listed all the birds seen, and Setenani Nkopane, an ecologist with the LHDA.

Lesotho is little-known bryologically, with a current list of 165 mosses and 39 liverworts. A country of c. 30,000 sq. km (11,700 sq. miles), it is surrounded by South Africa, and is the only country in the world with all its borders over 1000 m. The geology is extremely simple: the western lowlands, which are mostly extremely degraded because of overgrazing and deforestation, being sandstone, the eastern uplands basalt, though there are a few higher sandstone outcrops. There are no native forests left in the lowlands, but much planting of poplars, eucalyptus and pine has taken place. The overgrazing has been so severe in the lowlands that wide ravines, or dongas, have appeared because of erosion. The highland parts of the country, where the vegetation is less degraded, consist of a series of roughly north-south mountain ranges, all of which exceed 3000 m in altitude, culminating in the Drakensbergs on the eastern border with Natal.

Time was found for some general bryology in the lowland sandstone areas around Roma, Maseru, Leribe and Qacha's Nek. Rock outcrops produced several liverworts new to the country. Reservoir and pool margins were productive for species of *Riccia* and the strange little *Cladophascum gymnomitrioides*. Epiphytes were rather few, but where they occurred typical species included *Orthotrichum diaphanum*, *Tortula ammoniana*, *T. pagorum* and *Fabronia pilifera*. Other common species included *Plagiochasma rupestre*, *Barbula crinita*, *Bartramia hampeana*, *Bryum alpinum*, *B. torquescens*, *Brachythecium implicatum*, *Pychomitrium cucullatum*, *Trichostomum brachydontium* and members of the Leskeaceae (*Pseudoleskea* and *Lindbergia*). Other attractions of the sandstone included some frankly unconvincing dinosaur footprints.

Several days were spent in the woodland of the upper Hlotse valley, where *Leucosidea* (Rosaceae) is the dominant tree, some specimens of which are up to 300 years old. The woodland here, the only known surviving relic of *Leucosidea* forest in Lesotho, is unofficially protected by having a large pipeline construction scheme at the bottom, thus preventing access from the villages further down the valley. It is rather Mediterranean in character, fairly dry, with a lot of epiphytic Orthotrichaceae. One almost untouched area was found in a ravine, with bamboo and luxuriant bryophytes. Bryophytes seen included *Acanthocoleus chrysophyllus*, *Plagiochila squamulosa* var. *crispulo-caudata*, *Leucolejeunea rotundistipula*, *Anacolia breutelii*, *Anoectangium wilmsianum*, *Haplocladium angustifolium*, *Orthotrichum subexsertum*, *Thuidium matarumense* and *Zygodon leptobolax*.

Moving to the north of the country, several of the highland bogs in the Oxbow and Mokhotlong areas were surveyed. There is no *Sphagnum* in these bogs, but they are peat-forming, composed mainly of a distinctive and attractive suite of vascular plants such as the endemic *Aponogeton ranunculiflorus* in pools, and a large number of small, flowering herbs. Many of the bogs have deteriorated badly in the last 30 years because of overgrazing. The few we saw that remained relatively intact had a limited but interesting bryophyte flora, much of which had to be extracted from the rather spiky tussocks of *Merxmüllera* grass. Species included *Haplomitrium gibbsiae* and *Leptodontium proliferum*, both new to Africa, as well as more common plants. The high altitude basalt rock crags that often stood over the margins of the bogs were also extremely interesting for bryophytes, particularly on the border with Natal at Sani Pass, where there seemed to be a distinctly Antarctic element to the bryophyte flora. Some of the more notable plants recorded included *Adelanthus lindenbergianus*, *Scapania cuspiduligera*, *Amphidium tortuosum*, *Andreaea* spp., *Anomobryum drakensbergense*, *Gymnostomum bewsii*, *Tortella fragilis*, and the Drakensberg endemics *Quathlamba debilicostata* and *Orthotrichum oreophilum*. The recently described *Cryptomitrium oreades* was seen on a riverside near Oxbow.

Several days were spent examining *Leucosidea* woodland in Natal, where, because of climatic factors, the bryophyte flora was quite different from that of the Lesotho woodland, being generally richer in species and more luxuriant, and including tropical elements such as members of the Lejeuneaceae and Meteoriaceae.

The expedition was therefore successful purely as a bryophyte collecting trip, with many species found new to Lesotho, several new to southern Africa and to the continent, and at least one probably new to science. It is hoped that our findings (in the form of a report to the British Council) will contribute to the conservation of some of the unique and highly threatened areas examined.

♦ **Mr K.I. Kingham, Prof. J.G. Duckett, Dr A.R. Leitch and Dr M.C.P. Glyn** (Queen Mary and Westfield College, London): 'Nuclear and cytoplasmic differentiation in the protonemata of *Funaria hygrometrica*.'

Different cell types have nuclei that vary in shape, volume, structure (Bennett, 1984), organization of chromatin (Manueldis & Borden, 1988) and distribution of nuclear proteins (Zirbil *et al.*, 1993).

In this study, the changes in cytoplasmic organization and interphase nucleus reorganization are being examined in the caulonemata of the moss *Funaria hygrometrica* Hedw. Moss

caulonemata are ideal for investigating inter-relationships between nuclear and cytoplasmic differentiation as these single files of differentiating cells show consistent developmental features. Fully differentiated caulonemal cells are morphologically similar to the food conducting tissues of gametophytes and sporophytes of mosses (Ligrone & Duckett, 1994) and parallel the development of phloem in the stele of tracheophytes. Kingham *et al.* (1995) found that, near the apices of caulonemal filaments, phenomena such as polarized tip growth, nuclear and cell division and side branch initiation are associated with haploid nuclei (1C DNA amount, 0.5 pg). These are spherical or slightly oval, with no blocks of condensed chromatin, and have a large nucleolus consisting mainly of a granular component. As caulonemal cells mature, the plastids become suspended along endoplasmic strands, the cell walls become thickened and pigmented and the majority of the organelles lie towards the apical ends of the cells. These cytoplasmic changes occur alongside major reorganization of the nucleus, which becomes endoreduplicated by amplification of the 1C genome to give mature nuclei of between 4-8C. This amplification is associated with increased nuclear volume whilst elongation of the nucleus results in a larger surface area of the nuclear envelope. Within the nucleolus, amplified ribosomal RNA genes form blocks of heterochromatin, there is an overall reduction in nucleolar volume due to a diminution in the granular component and nucleolar components become spatially separate. During this major reorganization, there is a stable distribution of the 'D' polypeptide involved in pre-mRNA splicing.

DNA methylation is thought to be a control element for gene expression (Watt & Molly, 1988) and is involved in many fundamental processes, including genomic imprinting (Lock *et al.*, 1987) and embryo development (Li *et al.*, 1992). It is also strongly implicated in regulating developmental transitions in higher plants (Burn *et al.*, 1993), where expression patterns are correlated with differential methylation of the alleles or their promoter regions. To understand further the role of nuclear differentiation in development of *Funaria hygrometrica* caulonemata, we have treated the genome with drugs that reduce the levels of DNA methylation. Methylation is a post-synthetic modification of the DNA performed by methyltransferase; in plants it can occur by methylation of the cytosine base in CG dinucleotides and in CXG triplets (Gruenbaum *et al.*, 1981). Using 5-azacytidine (5azaC) and dihydroxypropyladenine (DHPA) to hypomethylate the genome, we are able to perturb normal development. 5-azaC, a base analogue of cytosine, inhibits methylation (preferentially at CG dinucleotides) by incorporating into the genome and inhibiting methyltransferase activity (Li *et al.*, 1970). DHPA inhibits S-adenosyl hydrolase (a downstream enzyme in methylation metabolism), causing feedback inhibition of CXG methylation (Benes *et al.*, 1984). Our investigations are showing considerable changes to nuclei and cytoplasm following hypomethylation with both 5-azaC and DHPA.

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♦ **Dr A. Russell, Dr M. Leech & Dr T. Wang** (The John Innes Centre): 'Searching for a signal for plant hormone action in the moss *Physcomitrella patens*.'

The plant hormone cytokinin is known to be involved in a number of processes in higher plants, such as shoot formation and chloroplast biogenesis. To date, however, very little is known concerning the action of cytokinins in promoting these effects. Cytokinins are present in mosses and cause single-celled protonemal side-branches to undergo the morphogenetic transition to meristematic buds. We are therefore using this system to try to gain insights into how the cytokinin signal is translated into a response by the cell.

Time-lapse video microscopy has been used to record the timing of the change from side-branch initial to gametophore-bud initial. This has also revealed that the fate of cell divisions of a developing gametophore is established when the bud is still a single cell. From such microscopy, it appears that the main early effects of cytokinin in *P. patens* are the inhibition of polarized tip growth and an increase in the numbers of chloroplasts.

It has been suggested that, similar to hormones in animals, cytokinins might work by a signal transduction system in which calcium acts as a 'secondary messenger'. To try to detect any increase in calcium in cells incubated in cytokinin, moss protonema have been microinjected with calcium-sensitive fluorescent dyes. Images of calcium distribution in protonemal cells have been obtained but calcium increases in cells incubated in cytokinin have not been visualized using these dyes.

Experiments with the calcium ionophore A23187, which facilitates the transport of calcium across the cell membrane, have suggested that calcium may be a messenger involved in responses to light such as side-branch formation. Increasing the calcium concentration of protonemal cells in this manner does not mimic cytokinin-induced bud formation, contrary to earlier reports (Saunders & Hepler, 1982).

*P. patens* has been transformed with the gene for apoaquorin from the jellyfish *Aequorea victoria*. This compound produces luminescence on binding to calcium in the presence of coelenterazine. Transformed moss does not respond to plant hormones with a rise in cytosolic calcium as indicated by aequorin, but does respond to touch and cold-shock with considerable transient changes in cytosolic calcium. These responses are similar to those found for tobacco (Knight *et al.*, 1991) and show that plants are extremely sensitive to touch stimuli. Experiments with transformed moss have also demonstrated that moss can cope with large changes in cytoplasmic calcium levels.

As well as exploring possible roles for signal molecules in cytokinin signalling, we are taking a molecular approach and looking for changes in gene expression associated with plant hormones. A gene has been isolated in *P. patens* that corresponds to a gene involved in flowering in higher plants. Results indicate that this is a gene associated with the development of gametophores. Further work is required to determine whether plant hormones are involved in the regulation of this gene.

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♦ **Mr R.C. Stern** (Chichester): 'Fifteen years of BBS meetings.'

Slides of most of the twenty-seven spring and summer meetings attended by R.C. Stern between 1979 and 1984 were shown. These included group photographs taken at many of these (often including overseas members), prints of which are lodged with the BBS Photographic Archivist (Prof. M.R.D. Seaward). In several cases, individual members or small groups were shown, as well as views of the more attractive and interesting localities visited and a few of the bryophytes seen.

Among the meetings illustrated were the excursion to the Algarve in Portugal in March 1989, the international meeting based at Aigas House near Inverness in July 1988 and the IAB/BBS *Sphagnum* tour to various localities in Britain in July 1991.

♦ **Mr C.R. Stevenson** (Kings Lynn): 'Recording in Norfolk.'

A brief outline of the history of recording in the county was followed by an account of progress made and difficulties encountered. Recent recording had established that some species were much more widespread than previously suspected, whilst a trickle of new

VCRs continue to be made, even in such a well-worked county. Other species appeared to have suffered major declines, possibly to the point of extinction, although in many cases the lack of recent records probably reflected a mixture of genuine rarity and insufficient fieldwork.

After this factual introduction the talk assumed a more amusing tone, and speculated on the purpose of publishing regional floras, who they were liable to be used by and for what purposes. The appropriateness of trying to cover an area the size of Norfolk in detail was questioned, when it might perhaps be more appropriate to make detailed records of key sites of conservation interest. The talk concluded with a discussion of the appropriateness of writing accounts of the ecology of species which added little, if anything, to the store of already available information.

♦ **Mr R. Woods** (Countryside Council for Wales, Llandrindod Wells): 'Bryophyte communities.'

Under this all-embracing title, our current understanding of plant communities dominated by mosses and liverworts was reviewed. The National Vegetation Classification, now nearing completion, has revitalised an interest in plant communities. No environmental assessment of a site would be considered adequate without a description of its vegetation communities, in addition to a description of the species it supports.

Unfortunately, the NVC as yet fails to cover a number of important bryophyte-dominated communities and includes in its floristic tables barely a third of the British bryophyte flora. Notable omissions identified include epiphytic and many epilithic communities.

The lichenologists have available a preliminary conspectus of lichen communities in the British Isles by James, Hawksworth and Rose in *Lichen Ecology*, edited by Seaward (Academic Press, London, 1977). A proposal was aired that BBS members should consider collecting data to enable a comparable conspectus for bryophyte-dominated communities to be produced. A possible outline of epiphytic communities based on available data was presented.

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#### **FIELD EXCURSION TO FLORDON COMMON AND ASHWELLTHORPE LOWER WOOD, 10 SEPTEMBER 1995**

Despite earlier predictions, a cloudless blue sky and warm sunshine were an encouraging start for the day's excursion. First stop was at Flordon Common, just to the south of Norwich. It is renowned for being the site of the discovery of *Leiocolea rutheana* in Britain and, during the First World War, *Sphagnum* was collected from the Common in some quantity for use in first aid dressings. Drainage and other changes have left only one small wet area but this produced plenty of interest. After some discussion the '*Drepanocladus revolvens*' was pronounced as *D. cossonii* and some fine *Moerckia hibernica* with perianths tempted Harold's camera into the open. Other species recorded included *Campylium stellare*, *Fissidens adianthoides*, *Rhizomnium pseudopunctatum*, *Scorpidium scorpioides*, *Sphagnum palustre*, *S. subnitens*, *Aneura pinguis*, *Calypogeia fissa* and *Pellia endiviifolia*.

Our second site was at Lower Wood, Ashwellthorpe. This is a recent acquisition by the Norfolk Wildlife Trust and was bryologically unknown. It consists of 93 acres of mainly ash

but with some hornbeam, which is at its northern limit as a native species. Unfortunately, recent rains had not revived the bryophytes after the long hot spell so well as a certain brand of lager would have, if one believes the advertisements. Jeff Duckett spotted *Ulota phyllantha* almost as soon as we entered the wood but other species seen were typical of an East Anglian wood on boulder clay. These included *Cirriphyllum piliferum*, *Eurhynchium pumilum*, *E. striatum*, *Homalia trichomanoides*, *Isothecium myurum*, *Rhytidiadelphus triquetrus* and *Metzgeria furcata*. Most members had a long journey home, so the meeting broke up in the early afternoon after a very enjoyable day in the field, and just before rain arrived to spoil it.

RICHARD FISK

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### BRYOPHYTE WORKSHOP, MANCHESTER, 1995

The theme of the workshop was the taxonomic and evolutionary significance of the moss peristome. It was held on 21-22 October at Manchester University, and was organized and led by Dr Sean Edwards. Eight members attended.

We began with an outing to the Cheshire side of the Goyt Valley to collect material. We were able to find material illustrating all the variations of the polytrichoid peristome (*Polytrichum*, *Polytrichastrum* and *Pogonatum*) and species with haplolepidous (*Dicranella*) and diplolepidous (*Bartramia*, *Bryum*) peristomes. A nice bonus was Martin Wigginton's find of *Tetrodontium brownianum*.

In the early evening of the first day we learned about the structure and development of the peristome. Or rather peristomes: a major theme of Dr Edwards' lecture was the importance of recognizing that polytrichoid 'peristomes' are not homologous to the peristomes of haplo- or diplolepidous mosses, and the central importance of this fact to the taxonomy.

The second day was spent in the laboratory dissecting peristomes of our various species and seeing for ourselves the features outlined in the previous day's lecture. A further talk on the evolution of the peristome gave rise to a lively discussion, and we learned useful tricks of dissection and sectioning. It was a very informative and enjoyable weekend. Thanks are due to Sean Edwards for all the work of organization and preparation, and to Sean and Salosh for entertaining us so generously at their home on the Saturday evening.

JOHN LOWELL

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### FUTURE MEETINGS OF THE SOCIETY

Members are reminded to read the BBS Safety Code, which is published in *Bulletin* 43 and is available from local secretaries for inspection during BBS meetings. Please inform local secretaries well in advance if you intend to join a meeting, even if you are not staying at the headquarters hotel.

#### **SPRING FIELD MEETING 1996, Dolgellau, Gwynedd, 10-16 April.**

Local Secretaries: Tim Blackstock & Marcus Yeo, Countryside Council for Wales, Plas Penrhos, Penrhos Road, Bangor, Gwynedd, LL57 2LQ. Tel.: 01248 370444.

It was at the final meeting of the Moss Exchange Club held in Dolgellau in 1922 that its two sections agreed to unite and form the British Bryological Society. In recognition of that landmark meeting in the Society's history, Dolgellau has been chosen as a venue for a field meeting in the centenary year. Most of the excursions will be in Merioneth (v.-c. 48), taking in a range of coastal, woodland, ravine and submontane habitats.

The meeting will be based at the Royal Ship Hotel (the largest in Dolgellau), tel.: 01341 422209. Participants should make their own booking arrangements. There is a variety of alternative accommodation, and a list of hotels and guest houses in the vicinity of Dolgellau can be obtained from the local organizers.

Please inform the local organizers well in advance if you intend to join the meeting. A detailed programme will be prepared before the meeting and made available to participants.

**BBS CENTENARY SYMPOSIUM 1996, University of Glasgow, 4-8 August. Bryology for the Second Century.**

Local Secretary: Dr J.H. Dickson, Department of Botany, The University, Glasgow, G12 8QQ. Tel.: 0141 339 8855, Fax: 0141 330 4447.

The programme of papers is as follows:

**Sunday 4 August, 1400 to 1800 hrs, registration at Queen Margaret Hall, Bellshaugh Road, Kirklee, Glasgow G12 0SQ. Tel. 0141 334 2192 /3 /4; Fax. 0141 339 2883.** (Registration on subsequent days at Boyd-Orr Building, University Avenue.)

**Monday 5 August, 0900 to 1700 hrs.** Symposium (Lecture Theatre 2, Boyd-Orr Building)

- 09.00 Welcome and Introduction by A.R. Perry, President of the Society.
- 09.15 D. Edwards (Cardiff, UK): 'Origins of land plants: the palaeobotanical perspective.'
- 09.45 T.A. Hedderson (Reading, UK): 'Origins of land plants: new evidence from molecular biology.'
- 10.15 K.S. Renzaglia (Johnson City, Tennessee, USA) & D. Garbary (Nova Scotia, Canada): 'Phylogenetic analyses of bryophytes and their relationships with other plants.'
- 10.45 Coffee
- 11.15 M. Bopp & E. Capesius (Heidelberg, Germany): 'The molecular approach to bryophyte systematics.'
- 11.45 H. Bischler-Causse (Paris, France): 'Molecular taxonomy of liverworts.'
- 12.15 D. Long (Edinburgh, UK): '*Asterella*: taxonomy on a global scale.'
- 12.45 Lunch
- 14.00 J.H. Dickson (Glasgow, UK): 'New discoveries of sub-fossil bryophytes especially concerning the Tyrolean Iceman.'
- 14.30 D.H. Vitt (Edmonton, Canada): 'Taxonomy of mosses: relationships of the major groups.'
- 15.00 Tea
- 15.30 L. Hedenäs (Stockholm, Sweden): 'Cladistic analysis of pleurocarpous mosses.'
- 16.00 B. Goffinet (Edmonton, Canada): 'Molecular phylogeny of the Orthotrichales.'
- 16.30 Concluding remarks.

**Tuesday, 6 August, 0900 to 1800 hrs.** Symposium continued (Lecture Theatre 2, Boyd-Orr Building)

- 09.00 N.W. Ashton (Regina, Canada): '*Physcomitrella* and the mode of action of auxin.'
- 09.30 T. Wang (Norwich, UK) & D.J. Cove (Leeds, UK): 'Molecular development of *Physcomitrella* (the Leeds 'Euromoss Project').'
- 10.00 J.G. Duckett (London, UK): 'Protonemal morphogenesis.'
- 10.30 Coffee
- 11.00 P. Apostolakos (Athens, Greece): 'Microtubules and morphogenesis in liverworts.'
- 11.30 K.C. Vaughn (Mississippi, USA) & J. Hasegawa (Kyoto, Japan): 'Cytoskeletal proteins of bryophytes and the systematic position of the hornworts.'
- 12.00 R. Ligrone (Caserta, Italy): 'Conducting tissues in bryophytes.'
- 12.30 Lunch
- 14.00 F. Sack (Ohio, USA): 'Gravitropism in bryophytes.'
- 14.30 J.G. Duckett (London, UK): 'The life and work of P.W. Richards.'
- 15.00 Poster session
- 18.30 Buses depart from Queen Margaret Hall for Civic Reception at City Chambers, George Square, Glasgow. The reception is a dinner. Dress: informal, national dress if possible.

**Wednesday, 7 August, 0900 to 1730 hrs.** Symposium continued (Lecture Theatre 2, Boyd-Orr Building)

- 09.00 J.A. Raven (Dundee, UK) & H. Griffiths (Newcastle, UK): 'New perspectives in the biophysics and physiology of bryophytes.'
- 09.30 H.J.B. Birks, E. Heegaard & B. Jonsgard (Bergen, Norway): 'Quantifying bryophytes – environmental relationships.'
- 10.00 J. Martinez-Abaigar & E. Nuñez-Olivera (La Rioja, Spain): 'Ecophysiology of pigments in aquatic bryophytes.'
- 10.30 Coffee
- 11.00 J.A. Lee (Sheffield, UK): 'Nitrogen and ozone pollution.'
- 11.30 J. Silvola, H. Vansander & J. Jauhiainen (Joensuu, Finland): 'Effects of elevated nitrogen and carbon dioxide.'
- 12.00 R.S. Clymo (London, UK): '*Sphagnum*, the peatland carbon economy and climatic change.'
- 12.30 Lunch
- 14.00 G. Hendry (Sheffield, UK): 'The biochemistry of desiccation tolerance.'
- 14.30 J.W. Bates & S. Bakken (London, UK): 'Nutrient retention, desiccation and recycling.'
- 15.00 J. Shaw (Ithaca, USA): 'Hybridization in mosses.'
- 15.30 Tea
- 16.00 R.E. Longton (Reading, UK): 'Advances in population biology.'
- 16.30 L. Söderström (Trondheim, Norway) & T. Herben (Pruhonice, Czech Republic): 'Modelling the dynamics of bryophyte populations.'
- 17.00 Concluding remarks

**Thursday 8th.** Departure.

**Poster Sessions.** Offers of posters on any innovative aspect of bryophyte research are welcome and should be addressed to Dr Royce Longton, Department of Botany, University of Reading, Reading, RG6 2AS.

**Accommodation.** Accommodation will be in Queen Margaret Hall, Bellshaugh Road, Kirklee, Glasgow G12 0SQ, at a cost of £20.50 per person per night for bed and breakfast. A booking form is enclosed with this *Bulletin*. For further details consult the Local Secretary.

**Registration Fee.** There will be a registration fee of £30.00, with a reduction for full-time students.

**Participation.** The Society looks forward to the participation of bryologists from throughout the world in its Centenary Symposium, and its Summer Field Meeting which will follow immediately afterwards (see below).

## **SUMMER FIELD MEETING 1996**

### **(I) Ballachulish, Argyll, 10-17 August.**

Local Secretary: Gordon Rothero, Stronlonag, Glenmassan, by Dunoon, Argyll, PA23 8RA.  
Tel.: 01369 706281.

The headquarters hotel will be the Glencoe Hotel, Glencoe, Argyll, PA39 4HW (Tel.: 01855 811245). This is a small hotel so early booking is recommended, particularly of single rooms. There is a lot of other accommodation of all types within a short driving distance.

It is intended that a variety of sites will be visited in this classic area, concentrating on the nearby oceanic woodlands and the volcanic and mica schist mountains. Most of the broadleaf woodland in the area has a range of 'Atlantic' species including *Drepanolejeunea hamatifolia*, *Leptoscyphus cuneifolius*, *Cohura calyptrifolia*, *Plagiochila exigua* and *Radula aquilegia* and there are records for *Daltonia splachnoides*, *Sematophyllum micans*, *Acrobolbus wilsonii* and *Plagiochila atlantica*. In the mountains there is the attraction of a selection of the oceanic, montane hepatics including *Anastrophyllum donianum*, *Plagiochila carringtonii*, *Mastigophora woodsii*, *Scapania ornithopodioides* and *Scapania nimbosa*, as well as a range of montane calcicoles such as *Barbilophozia quadriloba*, *Aulacomnium turgidum*, *Bryoerythrophyllum caledonicum*, *Gymnostomum insigne* and *Timmia norvegica*. Other excursions may include a trip to the limestone island of Lismore and, in complete contrast, to the complex mire areas of Rannoch Moor. The scenery is spectacular and the weather can be wonderful!

For those members attending both this meeting and the following one in Braemar, Saturday 17 August will be the 'change-over' day. There are plenty of interesting and potentially interesting bryological localities to visit between Ballachulish and Braemar.

### **(II) Braemar, Kincardine & Deeside, 17-24 August.**

Local Secretary: Dr Noel Pritchard, Foresters' Cottage, Durris, Kincardine, AB31 3BD.  
Tel.: 01330 811215.

It is intended to explore the many and varied habitats to be found in the Braemar and Deeside area, including some classic Grampian and Cairngorm bryophyte sites and some bryologically lesser known ravines, pinewoods, etc. Although there have been many bryological visits to the area over the years, it is so vast that much of it is still under-explored, and it is not unlikely that unexpected and interesting things will turn up in addition to the more well-known species. Cairngorm specialities that might be found include interesting montane species of *Andreaea*, *Marsupella* and *Gymnomitrium*, while other sites might reveal more calcicolous montane bryophytes such as species of *Lescuraea* and the rarer *Hypnum*s and *Mnium*s. Sites being considered at the moment include Ben MacDhui, Beinn a' Chaorainn, Caenlochan and Mount Blair as well as a number of shorter and less strenuous outings. The headquarters hotel is the Braemar Lodge (Glenshee Road, Braemar, AB35 5YQ (Tel.: 013397 41627) but there is a selection of alternative accommodation in the area, including hotels and guest houses.

Write to the local secretary for further details, preferably well in advance.

**ANNUAL GENERAL MEETING AND SYMPOSIUM MEETING 1996: Ness Botanic Garden, Wirral, 20-22 September.**

Local Secretary: Dr Hugh McAllister, Ness Botanic Gardens, The University of Liverpool, Environmental & Horticultural Research Station, Ness, Neston, Wirral, Cheshire, L64 4AY. Tel.: 0151 3530123.

The unique setting of Ness Gardens has kindly been offered for the AGM in our centenary year. Accommodation will be at Burton Manor Management, Development & Conference Centre, 1 mile from the gardens. There will be a celebratory centenary dinner on Saturday night. Sunday excursion: Loggerheads, near Mold, a limestone area. Further details from local secretary and in the next *Bulletin*.

**BRYOLOGICAL WORKSHOP 1996 , National Museum of Wales, Cardiff, October.**

Local Secretary: Roy Perry, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP. Tel: 01222 397951. Fax: 01222 239829. E-mail: perryr@cardiff.ac.uk

We are trying to arrange this meeting during the weekend of 26 October, *but this has not yet been finalized*. It is hoped to have a specialist available to lead a workshop on a difficult taxonomic group which is still to be decided. However, as befits the final meeting of the centenary year, this will be rather more than a workshop meeting. Organized by our President, there will also be a reception at the Museum (which, as the site of the Society's herbarium, can be regarded as our headquarters). Final details will be in *Bulletin 68*.

**SPRING FIELD MEETING 1997, Torquay, Devon.**

Local Secretary: Mark Pool, 'Camelot', 91 Warbro Road, Torquay, Devon, TQ1 3PS. Tel.: 01803 316154.

It is some time since the Society visited Devon so this should be an interesting meeting. The provisional base for the meeting is Torquay. Further details in future *Bulletins*.



## **SUMMER FIELD MEETING 1997 (II), North Italian Alps, early September.**

Local Secretary: Prof. René Schumacker, Station Scientifique des Hautes-Fagnes, Université de Liège, Mont-Rigi, B-4898 Robertville, Belgium. Tel.: 00 3280 446182. Fax: 00 3281 738200.

This is an 'early warning' that it is planned to hold a field meeting in the Italian Alps in 1997. Professor Schumacker has kindly offered to host the Society for this exciting trip. As well as being a leading hepaticologist, he has many years of experience bryologizing in the Alps. However, many areas remain poorly known, not having been visited in recent years.

There will of course be an alternative summer meeting somewhere in the British Isles (yet to be arranged) for those who cannot or do not wish to go to the Alps.

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## **LOCAL MEETINGS PROGRAMME, 1996**

### **BRITISH BRYOLOGICAL SOCIETY AND NORTH WESTERN NATURALISTS' UNION (North West Group)**

Please advise one of the contacts given below (well before the meeting date!) to ensure that there have been no changes in time or venue. On some meetings there may be limitations on numbers. Adequate clothing and refreshments must be taken.

All meetings are on a Saturday and the meeting time is 11.00 am unless otherwise indicated.

March 2: RODDLESWORTH. Visitor centre: SD 665215. Leader: Mr John Lowell.

March 23: GRATTON DALE. Meet: SK 211613. Leader: Dr Martha Newton.

April 27: CILYGROESLWYD. Prestatyn Railway Station: SJ 070830: **10.30 am**. Leader: Mrs Wendy McCarthy.

May 25: ALDERLEY EDGE. Car park by 'Wizard' pub: SJ 859772. Leader: Dr Sean Edwards.

June 8: CRINGLEBARROW WOOD (WARTON). Village car park: SD 4972. Leader: Mr Mike Gosling.

July 20: EDALE PARISH. Meet bottom of Station car park approach: SK 125853. Leader: Mr Gordon Miller.

August 10: BURBAGE BROOK. SK 263806. Leader: Prof. Brian Fox.

September 28: BLACK CLOUGH. Car park: SK 114998. Leader: Dr Martha Newton.

October 19: RUDHEATH WOOD. Car park: SJ 733708. Leader: Mr Len Johnson.

November 16: ROWARTH. Car park: SK 013892. Leaders: Messrs Alan & Norman Bamforth.

December 7: DELAMERE FOREST. Visitor centre: SJ 546704. Leader: Mr John Holness.

CONTACTS: British Bryological Society: Mr A.V. Smith. Tel.: 01663 744499

North Western Naturalists' Union: Mr E.P. McCann. Tel.: 0161 962 1226

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## OTHER BRYOLOGICAL MEETINGS, 1996

March 9-10, 1996: **MOSESSES & LIVERWORTS**. With emphasis on identification and the effects of atmospheric pollution. Tutor: Dr Ken Adams, Epping Forest Field Centre (FSC), High Beach, Loughton, Essex, IG10 4AF. Offering individual guidance at all levels. Details from the administrative officer, Mr Peter Roberts.

March 15-17, 1996: **INTRODUCTION TO MOSESSES AND LIVERWORTS**. Tutor: Dr Martha Newton, Rhyd-y-creuau, Drapers' Field Centre, Betws-y-coed, Gwynedd, LL24 0HB. Especially for beginners, but others welcome too. Details from the Warden, Mr J. Ellis.

April 26-28, 1996: **SPHAGNUM WEEKEND**. Tutor: Dr Martha Newton, Rhyd-y-creuau, Drapers' Field Centre, Betws-y-coed, Gwynedd, LL24 0HB. A chance to learn how to recognize most of the British species in the field, and to study them alongside keys. Details from the Warden, Mr J. Ellis.

May 17-19, 1996: **INTRODUCING MOSESSES**. Tutor: Gordon Rothero, Kindrogan Field Centre, Enoch Dhu, Perthshire, PH10 7PG. A weekend course intended for complete beginners and for those who wish to consolidate and improve the knowledge of bryophytes that they have, Kindrogan is an excellent centre with good facilities. Enquiries to The Director, Kindrogan Field Centre. Tel. 01250 881433.

May 22-29, 1996: **MOSESSES AND LIVERWORTS**. Tutor: Dr Martha Newton, Orielson Field Centre, Pembroke, Dyfed, SA71 5EZ. Offering individual guidance at all levels. Details from the Warden, Dr R.G. Crump.

July 26 - August 2, 1996: **MOSESSES AND LIVERWORTS**. Tutor: Dr Martha Newton, Malham Tarn Field Centre, Settle, North Yorkshire, BD24 9PU. Offering individual guidance at all levels. Details from the Warden, Mr K. Iball.

**August 1-3, 1996: Workshop on Conservation of Bryophytes in Europe.** The University of Reading, UK.

A 2-day workshop will be organized by the European Committee for Conservation of Bryophytes and held at the School of Plant Science, The University of Reading, Reading RG6 2AS on 1-2 August. The workshop aims to bring together bryologists and conservationists to discuss recent advances in bryophyte conservation and further development of conservation strategies. It will be followed by a field excursion on 3 August.

The main topics will be: 1. Revision of Red Data Books for Europe. 2. Floristic investigation of Europe. Participants will be invited to give oral or poster presentations on these or related topics. Reasonably priced University accommodation will be available but must be booked by 1 April 1996. There will be a registration fee of £10 per person. Enquired and offers of contributions to Dr Royce Longton at the above address. The workshop will immediately precede the conference on 'Bryology for the Second Century' in Glasgow (see pages 19-21 of this *Bulletin*).

August 9-16, 1996: **MOSSES AND LIVERWORTS**. Tutor: Dr Martha Newton, Preston Montford Field Centre, Montford Bridge, Shrewsbury, Shropshire, SY4 1DX. Offering individual guidance at all levels. Details from the Warden, Ms S. Townsend.

August 16-23, 1996: **MOSSES AND LIVERWORTS OF THE LAKE DISTRICT**. Tutor: Dr Martha Newton, Blencathra Field Centre, Threlkeld, Keswick, Cumbria, CA12 4BR. Offering individual guidance at all levels. Details from the Warden, Dr R. Lucas.

September 1-6, 1996: **WOODLAND BRYOPHYTES**. Tutor: Dr Martha Newton, Rhyd-y-creuau, Drapers' Field Centre, Betws-y-coed, Gwynedd, LL24 0HB. Offering individual guidance at all levels. Details from the Warden, Mr J. Ellis.

September 7-14, 1996: **MOSSES AND LIVERWORTS**. Tutor: Dr Martha Newton, Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, PH10 7PG. Offering individual guidance at all levels. Details from the Warden, Dr A. Gimingham.

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### **BRITISH MYCOLOGICAL SOCIETY CENTENNIAL SYMPOSIUM, SHEFFIELD 1996**

As part of the celebrations of the hundredth anniversary of the British Mycological Society in 1996 there will be a 3-day symposium held in Ranmore Hall, University of Sheffield in April 1996. One of the lectures on Day 2 (11 April) may be of interest to BBS members. Its title is 'Are there bryophytes without Ascomycetes?' which will be delivered by Dr P. Döbbeler (Münich) at 1625 hrs. BBS members are welcome to attend and may obtain further details of the meeting from Dr A. Lyon, Department of Animal & Plant Sciences, University of Sheffield, S10 2UQ.

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### **INTERNATIONAL BOTANICAL CONGRESS, 2005**

A small group, chaired by Prof. D. Hawksworth, President of the International Union of Biological Sciences, has established that there is strong support in Britain for the proposal to host the Congress in the U.K. The Royal Society has therefore submitted notice of its intention of making a bid for the year 2005. To this end, plans are now being made by Prof. Hawksworth's group for the preparation of a detailed case in time for its consideration during the 1999 Congress in Missouri. The B.B.S. has been invited to lend its support, and Council will give full attention to the matter. In addition, individual members of the B.B.S. who may wish to become involved in subsequent organization, if the bid proves successful, are asked to contact Dr J. Marsden, The Linnean Society of London, Burlington House, Piccadilly, London, W1V 0LQ.

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### **REPORTS OF LOCAL MEETINGS**

#### **South-east group**

The first meeting of the season, led by Jeff Duckett, started at Bough Beech Reservoir near Edenbridge, v.-c. 15. The summer drought had left a large expanse of silt and mud, grading

into grassy scrub at the margin. Ten well-waterproofed bryologists spent a very wet morning searching for marginal species but it was only when the rain eased that plants became easily recognizable. These included *Bryum klinggraeffii*, *Ditrichum cylindricum*, *Physcomitrella patens*, *Dicranella staphylina*, *Phascum cuspidatum*, and *Pseudephemerum nitidum*. The concrete dam wall had a fine growth of *Tortula ruralis*, with *Grimmia pulvinata*, *Homalothecium sericeum*, *Schistidium apocarpum* and *Orthotrichum anomalum*.

Later we moved to Stridewood, a steep-sided stream woodland with alder carr on deep mud along the floor. Here, the great find of the day (JD) was *Platygyrium repens* growing on alder in the carr. This is a new v.-c. record, a rare occurrence in this well-worked county. An outcrop of large sandrocks was explored but yielded only abundant *Orthodontium lineare* and *Tetraphis pellucida*. The bryophyte flora here seems much reduced since the rocks were exposed during the 1987 Storm. Back in the wood, another notable find was a large patch of *Archidium alternifolium* growing in short grass on disturbed ground near the woodman's hut.

Twelve members gathered for the next meeting at Farningham Wood, v.-c. 15, a well-known site covering parts of four tetrads which needed separate recording. The wood is a Kent Trust reserve of ancient semi-natural woodland, much of it now sweet chestnut coppice, lying on Tertiary sands and gravels over chalk.

*Scleropodium tourettii* occurred along several metres of a heathy track together with *Polytrichum juniperinum*, *Bryum pallens*, *Pohlia nutans* and *Campylopus paradoxus*. A dried up pond margin yielded *Drepanocladus fluitans*, *Pseudephemerum nitidum*, *Bryum klinggraeffii*, with *Gymnocolea inflata*, *Lophozia ventricosa*, *Cephalozia bicuspidata* and *Fossombronia wondraczekii* with abundant capsules on the surrounding banks.

The prize of the day was *Sphaerocarpos* sp. growing on a fallow field outside the wood. The only thallus had empty capsules, but *S. michellii* was recorded here in 1967, and presumably it has maintained itself at what is probably its only site in Kent since then. With it were *Riccia glauca*, *Ephemerum serratum*, *Phascum cuspidatum* and *Eurhynchium swartzii*.

The whole wood was still suffering from the summer drought. The local members intend to re-visit the site later in the winter to try to improve on the 59 species recorded.

JAN HENDEY

On 16 December 1995 the Group, led by Simon Geikie and Jeff Duckett, explored Beacon Country Park at Bean near Dartford, Kent. The site has an exposed geological fault line and has been used for clay extraction as well as a gunpowder works. Despite a polluted environment we found over 70 species of bryophytes; indeed, one area known to be heavily polluted with chromium, zinc, cadmium, arsenic and selenium, had a healthy-looking cover of *Barbula fallax*, *B. tophacea* and *Leptobryum pyriforme* in place of grass. Other species recorded included *Henediella microphylla* (on a badger sett), *Pohlia camptotrachela*, *Schistidium apocarpum*, *Drepanocladus fluitans* and *D. aduncus*.

ROY HURR

### **The Welsh Border Bryologists in 1995**

It has come to our attention, as one's old headmaster might have said (had he been a bryologist) that God created mosses and liverworts to keep botanists from idleness during the winter months. As vascular plants slumber underground, bryophytes look their brightest and

best, thriving in our mild, moist Atlantic winters, particularly near the western seaboard and in the hills, where water from the ocean dampens the air and ground, protecting these sensitive little plants from the dry heat and cold to which they are susceptible. In consequence, Britain has two thirds of the Continent's bryoflora, compared with less than a fifth of its vascular plants, and botanists who shun acquaintance with mosses and liverworts overlook a substantial proportion of the diversity in our country's green mantle.

The green colour of mosses and liverworts raises their botanical status above that of more lowly cryptogams. Lichens and fungi are the Henry Fords of the plant world: you can have them any colour you like except green. Furthermore, lichens are not proper species at all, but ecosystems of two species living together, while fungi, pretty as they may fleetingly be for a week or two each year, are ecologically more animal than plant, as they profit from the misfortunes of other organisms, wherefore those of us with a fetish for frogstools may feel encouraged to join the Zoological Society. However that may be, alone among the non-vascular cryptogams, the green leaves and other corporeal accoutrements of mosses and liverworts confirm their status as proper plants, suitable subjects for the attention of field-botanists.

The Border Bryologists reconvened for 1995 with Roy Perry in the Clun Valley (v.-c. 40) on a fine, mild morning in February. The Rock of Woolbury was our trysting place, a long-abandoned quarry of Silurian Shales, now a sequestered enclave embowered with oaks and further sheltered from wind by the lie of the rocks – an Arcadian amphitheatre perfect for bryophytes. Here lives *Atrichum crispum*, a first record for Shropshire, and *Scleropodium tourettii*, a xerophytic pleurocarp now rare away from the coast, since much of the short turf it favours has been lost by changes in the management of land and the demise of the rabbit. Other classy incumbents include *Plagiochila spinulosa* and *Scapania irrigua*, while the apblemoss *Bartramia pomiformis* festoons the rocky ledges with its pale green leaves and capsules.

The forest tracks and hedgebanks nearby were equally interesting: growing on the fissured bark of elder trees, the epiphytes *Ulota phyllantha*, *Orthotrichum stramineum* and *Metzgeria fruticulosa* all have rather westerly distributions in Britain, as does *Dicranella rufescens*, and another first record for the vice-county – *Oligotrichum hercynicum* – which Dan Wrench found on a path in the forest near the quarry.

Dallying along the quiet by-ways, the long delay to our lunch was no concern to the Ludlow contingent, which had presciently dined on a full English breakfast, but those less well fortified became ever more anxious as lunchtime came and went, with never a break from the moss-gathering. Lunch in mid-afternoon left little daylight for inspecting Sowdley Wood, especially as we had forgotten the arc-lamps, so we bequeathed to the Shropshire Wildlife Trust the task of compiling a fuller list for their nature reserve.

Next day turned out equally mild and even sunnier as we despoiled at the north end of Wenlock Edge SE of Hughley (v.-c. 40), where the calcareous rock and soil betrayed their content of lime by a range of calcicoles new to many in the party: *Homalothecium lutescens*, the less common lime-loving cousin of *H. sericeum* which occurs so frequently on the tops of walls built of acidic stone; also *Trichostomum crispulum*, *Fissidens cristatus*, *Brachythecium glareosum*, *Campyllum chrysophyllum*, *Cirriphyllum crassinervium*, *Ditrichum crispatisimum*, *Aloina aloides* in abundance, *Pottia lanceolata*, *Leucodon sciuroides*, and

the little leafy liverwort *Leiocolea badensis*, while a brave Jacob's Ladder (*Polemonium caeruleum*) had put out leaves but dared not flower so early in the year.

Rehydrated and refreshed by the botanical banter over a liquid lunch, we returned to Wenlock Edge, c. 1 km W. of Much Wenlock, where Roy found the uncommon pleurocarp *Entodon concinnus* in an old grassy quarry. Nearby, arable fields which had lain unploughed during the winter rains offered an unexpectedly diverse ephemeral bryoflora, including *Pottia recta*, *P. starkeana* ssp. *conica*, *P. lanceolata* and *P. intermedia*. More *Pottia recta* turned up on a sandy bank in the wood, and *Leiocolea badensis* made its second appearance of the day on a rocky ledge in a shaded quarry.

On 12 March we defected to Breconshire (v.-c. 42) with Ray Woods. While he recorded for the projected *Flora of Breconshire*, his acolytes crawled a little further up the learning-curve with an introduction to the mosses and liverworts of the National Nature Reserve at Cwm Clydach near Brynmawr, where the river cuts deep into the Carboniferous Limestone. It seemed unnecessarily perverse to enter a defile so damp and gloomy on a day so warm and sunny, but the fussier objects of our hearts' delight prefer its moist and shady, so into the gorge we went. The amateur botanist fondly supposes that nearly all the species living in our National Nature Reserves have been recorded, and is much surprised when many species can be added to the lists. And so it proved at Cwm Clydach, with leafy liverworts a particularly prominent component of the bryoflora. *Cololejeunea calcarea*, *Jungermannia sphaerocarpa*, *Lejeunea lamacerina*, *Leiocolea turbinata* and *Scapania aspera* all merit a mention in despatches. The mosses, though not in the same distinguished league as the liverworts, nevertheless constituted an interesting assemblage of species characteristic of wet, lime-rich rock shaded by the gorge and overhanging beech trees: *Dichodontium pellucidum*, *Hygrohypnum luridum*, *Neckera crispa* and *Trichostomum brachydontium*. *Cratoneuron commutatum* var. *commutatum* and *Eucladium verticillatum* sufficiently slowed the flow of water from lime-rich springs to enable deposits of tufa to form. Outside the Reserve, *Barbula reflexa* was worthy of notice.

The advent of spring and the reappearance of flowering plants and ferns distracted us from our vocation until late July, when Roy Perry reminded us of our priorities as he called us back to point-duty for a weekend in Shropshire in July. With the mosses and liverworts fast frying in the arid heat, we sought out the damp springs and streamsides of the county's hill-country.

In wet flushes on Wild Moor, high on the Long Mynd, we found a new locality for the rare *Bryum weigelii*. *Sphagnum contortum*, a new vice-county record, grew in a slightly basic flush with *Scorpidium scorpioides*, and *Sphagnum russowii*, *Calliergon cordifolium*, and *C. stramineum* also came to notice.

Next day we admired the lovely Ivy-leaved Bellflower (*Wahlenbergia hederacea*) on wet heath and hillside near Cleeton St. Mary on the east side of Titterstone Clee Hill, while further up the hill wet springs amid otherwise uninspiring moorland contained several other local vascular plants. Choice among the bryophytes a few stems of the little leafy liverwort *Odontoschisma sphagni* weaved between the bog-moss like fleas through fur. *Riccardia multifida*, *Pellia neesiana*, *Cinclidotus fontinaloides* and *Calliergon stramineum* were noted, while black patches of *Andreaea rupestris* sprouted from the pale grey gritstone boulders. Earlier reconnaissance had revealed the liverworts *Barbilophozia floerkei* and *B. attenuata*, the former well represented in the rock-strewn grassland on the upper slopes of the hill.

These two liverworts confirm Titterstone Hill's growing reputation as an easterly outlier in the distributions of species constrained by their ecological requirements to the higher, wetter parts of western Britain.

On a balmy day in October, Ray Woods led a select band of enthusiasts astray in Breconshire (v.-c. 40). The first object of our endeavour was the wooded dingle of Pwll y Wrach, near Talgarth, a nature reserve of the Breconshire Wildlife Trust, where Ray reacquainted us with many of the region's common woodland species. The stream cuts into the Old Red Sandstone, which forms soils of varying acidity and moisture, some supporting calcicoles such as *Anomodon viticulosus*, others with a neutral-to-basic reaction growing *Eurhynchium striatum* and *Cirriphyllum piliferum*, while the most acidic substrates displayed calcifuges such as *Rhytidiadelphus loreus* and *Thuidium tamariscinum*. On wet rocks by the stream grew the dendroid moss *Thamnobryum alopecurum* and the shiny fronds of *Homalia trichomanoides*, while the less common *Plagiochila britannica* was new to the Reserve.

After lunch we changed habitat and 5 km square by moving up onto the open hillside at the edge of the Black Mountains, where wet flushes, dripping rocks and turf by a small waterfall presented an assemblage of species very different to that encountered in the shaded dingle during the morning. *Scapania irrigua* was perhaps the pick of the new bunch.

Our last meeting of 1995 was spread over the weekend of 9-10 December, when Roy Perry attended to the paucity of records for the 10 km square SO48 (v.-c. 40) around Craven Arms so evident from the *Atlas of the Bryophytes of Britain and Ireland*. But by close of business on the Sunday, SO48 had become one of the best recorded squares in Shropshire, with 151 species of bryophyte. Frosty ground hindered progress, the County Recorder having failed to bring the blow-torches, but the white heat of enthusiasm generated by ten ardent moss-lovers gathered (or huddled) at Stokesay Church went some way to overcoming the unpropitious conditions.

Nortoncamp Wood produced *Mnium stellare*, *Metzgeria fruticulosa*, and growing on ash-boles several clumps of *Dicranum tauricum* with uniseriate gemmae in groups on its leaves, especially near the broken leaf-tips.

Next day found us mousing about on Wenlock Edge, near Harton, several miles south-west of where we had botanized in February. The Wenlock Limestone exposed in old quarry-workings, and loamy banks in the woodland supported several species of note: *Eurhynchium pumilum* and *E. schleicheri*, *Fissidens incurvus* (distinguishable with care from *F. pusillus* by its inclined capsules), luscious specimens of *Homalia trichomanoides*, also *Encalypta streptocarpa*, *Neckera complanata* and *Rhynchostegium murale*. Nearby, several large clumps of the uncommon Wood Barley (*Hordelymus europaeus*) still retained their dead-heads.

We take interest in south Shropshire's bryoflora partly because others no longer do. One has to look back to the late 19th and first part of the 20th century for information about the occurrence of mosses and liverworts in the county, when interesting records were reported each year in the Caradoc and Severn Valley Field Club's 'Record of the Bare Facts'.

The 'Bare Facts' were formerly published annually as appendages to the Club's *Transactions*, and extensive runs of these valuable records up to the 1930s lie forgotten and unread in the Woolhope Library. But the Shropshire club's vitality waned after the Depression, and sadly it

can no longer measure up to the task of either identifying or recording bryophytes. Our own Society's botanical work in the Border Counties therefore assumes greater importance, as its Salopian peer lapses into terminal coma with the passing of its final years.

A thriving natural history society operating in tandem with a crusading conservation-trust makes a healthy partnership for furthering interest in the study and welfare of a county's wildlife, and any shire lacking this balance deserves our condolence. So it was poignant, on our visit to Stokesay Churchyard, to pass by the grave of the Reverend James Dignes La Touche. There his bones lie still in the mouldering dust, and his soul cries out in silent torment at the melancholy fate of the Field Club he strove so hard to foster. May his heart's vain hieroglyph find consolation in a rising generation of naturalists more kindly disposed than its predecessors to investigating the bryological secrets of the delightful countryside which surrendered the Reverend gentleman to his fathers a century ago.

MARK LAWLEY

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## ELECTION OF OFFICERS AND ELECTED MEMBERS OF COUNCIL

The terms of four Officers, the General Secretary (Dr M.E. Newton), Journal Editor (Dr J.W. Bates), Meetings Secretary (Mr N.G. Hodgetts) and Reading Circle Secretary (Mr R.J. Fisk), expire at the end of 1996, and their present incumbents are eligible for re-election. The three Elected Members of Council who retire at the end of 1996, Mr J. Blackburn, Mr B.J. O'Shea and Dr A. Russell, are not eligible for re-election in this capacity until two years have elapsed. Members are invited to submit nominations for Officers and Elected Members, sending them, in an envelope marked PRIVATE, to the General Secretary of the B.B.S., Dr M.E. Newton, c/o Botany Department, Liverpool Museum, William Brown Street, Liverpool, L3 8EN, to arrive no later than 24 August, 1996. A nomination must not be made without the consent of the person it is wished to nominate. If elections are needed, they will be held at the A.G.M. at Ness Botanic Garden, Wirral, on 21 September, 1996.

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## RECORDING MATTERS 11

### Regional Recorders

A full list of BBS recorders for vice-counties in Britain and Ireland appeared in this column, *Bulletin 66*. The following new Regional Recorders have recently been appointed:

**62:** Mr J.M. Blackburn, 6 Bylands Grove, Fairfield, Stockton on Tees, Cleveland, TS19 7BG  
**92:** Mr K. Raistrick, 1 Drewton Avenue, Heysham, Lancashire, LA3 1NU

Mr Blackburn takes over in v.-c. 62 from Tom Blockeel who has done an excellent job since the Regional Recording scheme was initiated. The correct address for the Surrey Recorder is as follows:

**17:** Mr P.G. Adams, 5 Elm Cottages, Byttom Hill, Mickleham, Dorking, Surrey, RH5 6EL

### New Recording Secretary

By the time this article appears Ron Porley will have succeeded me as Recording Secretary. Many of you will know that Ron works for English Nature and that he is unassuming, but a



competent bryologist indeed! I hope that he will receive the generous support of members in continuing our flourishing recording activities that I enjoyed. In future, Regional Recorders should send their completed record cards to Ron who now also holds the stock of new cards.

In my five or so years as Recording Secretary I have enjoyed developing the network of Regional Recorders. I think that we have also just about got over the inertia against further recording that followed publication of *Atlas of the Bryophytes of Britain and Ireland*. Continued recording is necessary to fill in gaps and to identify future changes in distribution patterns (including extinctions, and invasions of aliens), and it provides a unique meeting point of amateur and professional, so vital to the Society's well being. It is gratifying to see recording activities picking up in different vice counties so that the survey of recording activities that appeared in this column in *Bulletin 65* is already out of date for some areas (e.g. Cornwall). I hope that members will support any future 'special' recording projects that are initiated as there is a lot more to 'knowing' bryophytes than simply mapping where they live! This is an area that could be taken a lot further. The development of local groups is a very encouraging feature of the Society's 'recording' activities - if you have felt too intimidated to attend a national meeting, please try to get along to the local meetings (or even help start a new group) where I am sure you will be warmly welcomed and helped in your endeavours to get to grips with mosses and liverworts.

*Dr Jeff Bates, Department of Biology, Imperial College at Silwood Park, Ascot, Berkshire.  
SL5 7PY*

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## COUNCIL NEWSLETTER NUMBER 12

Time flies, and once again I am writing with news of Council's wide-ranging work. There is much to report, for 1996, our Centenary year, is now upon us. Before going into detail, however, I must tell you of a number of sad losses the Society has suffered in the deaths, not only of our Honorary Member and longest-serving member, Prof. P.W. Richards, who joined our predecessor, the Moss Exchange Club, in 1920, but also of Mr F.E. Branson, Mr J.H. Field, Miss J. Griffiths, Mr A.R. Milne and Prof. J. Poelt. Their individual bryological interests significantly enriched the B.B.S.

Council's current efforts on your behalf are varied, for they are intended to cater for every member of the Society. Some of our work is still at an early stage, and this includes correspondence with Blackwell's, about stocks of back-numbers of the *Transactions* and *Journal*, as well as tentative proposals to become involved in a teachers' conference, Lifescience 2000. There is also some, such as our Conservation Officer's proposals on the availability of data, about which you will read elsewhere. There are, however, many things about which I can tell you more.

### **Centenary celebrations**

There is something for everyone. Leading bryological speakers from around the world will converge on Glasgow for a major international symposium, and this will be followed by an opportunity to see some of Scotland's rich bryoflora. Plans are also afoot to ensure the publication of a West-African Hepatic Flora, produced by the generous efforts of the Tropical Bryology Group from the unfinished manuscript left by Dr E.W. Jones. Similarly, plans for a coffee-table book are in hand. A new *Census Catalogue* will promote an up-to-date interest in British bryology, and the Society will visit Dolgellau, where the

decision was made in 1922 to merge the two sections of the Moss Exchange Club, leading to the origin of the B.B.S. the following year. Members will also gather on the Wirral for the paper-reading meeting and a celebratory dinner. Overall, we hope that as many people as possible will take part in these celebrations, all of which are intended to advance bryology in a variety of ways as the Society enters its second century.

### **Internet**

Also looking to the future, Council has initiated moves to investigate the possible benefits of electronic means of communication and publication.

### **Committees**

Since details of B.B.S. Committees were published in *Bulletin 66*, Prof. J.G. Duckett has taken over as convener of the Side Bequest Committee. Council has also established a Publications Committee composed of Dr J.W. Bates (convener), Dr G.C.S. Clarke, Prof. J.G. Duckett, Mr E.R. Hurr, Miss J.M. Ide and Mr A.R. Perry. It has an important role to play in facilitating the Society's work, its remit being: a) to consider the marketing of B.B.S. publications; b) to oversee the progress of publications in preparation; c) to monitor the Society's periodicals and suggest improvements; and d) to initiate new publishing projects.

### **Subscriptions**

Although no-one likes to see an increase, Council, and subsequently the A.G.M., agreed that our Treasurer's advice to raise the ordinary subscription to £20 was timely. The rate had remained unchanged for five years and will, it is hoped, remain static for a further prolonged period. I might also mention in this context that our Membership Secretary has thoroughly examined the possibility of introducing facilities for paying subscriptions via direct debit and/or by covenanting. Despite his leaving no stone unturned, it is unfortunate that neither can be implemented, the former being precluded by disproportionate costs, and the latter, potentially a means of maximising income, being deemed unacceptable by the Charity Commissioners.

### **B.B.S. Rules**

In the absence of untoward comment from the Charity Commissioners, whose opinion was sought, Council believes these to be appropriate to the Society's position as a registered charity.

### **E.W. Jones Bequest**

This, as you know, included a number of books, which are still being catalogued. There were also microscopes, and Council took the view that Dr Jones' wishes could best be realized by selling two of them to finance the purchase of modern ones for members to buy. The sale was well organized through Christie's by Mrs C.M. Rieser, and raised a figure in excess of the initial valuation.

In all this work, Council is endeavouring to consolidate and celebrate past achievements, as well as to build on them a sound and innovative future. Your participation is needed at every stage and, as always, your help and advice are welcome, so please let a member of Council know your ideas.

M.E. NEWTON

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## REFEREES (February 1996)

The refereeing service is intended to provide assistance to members who have genuine difficulty in naming their collections. **It is not intended as a 'free-for-all' identification facility**, least of all for bulk collections. Please therefore respect the following guidelines when submitting material.

- If possible, avoid sending large quantities at any one time. Do not send material if you are not prepared to examine it yourself in advance.
- Please ensure that fragile specimens are adequately protected in the Post. This applies particularly to material with lumps of soil attached. It is dispiriting to open a packet and find nothing but a pile of dust inside! Small boxes or tins are ideal for protection from crushing.
- Please label all packets clearly with full collection details, including habitat, locality, altitude and at least a 10 km grid reference.
- Always enclose a stamped addressed envelope (or label), even if material is sent from universities or institutions. Otherwise you may not receive a reply.

The General Referee will help beginners who are having difficulty in placing their material in a genus. If you encounter any other problems send it to the appropriate Recorder – Mr David Long for hepatics (Herbarium, Royal Botanic Garden, Edinburgh, EH3 5LR) or Mr Tom Blockeel for mosses (9 Ashfurlong Close, Dore, Sheffield, S17 3NN).

The numbers below refer to genera in *Distribution of Bryophytes in the British Isles* by M.F.V. Corley & M.O. Hill (1981).

**GENERAL REFEREE:** H.W. Matcham, 111 Winterbourne Road, Summerdale, Chichester, W. Sussex, PO19 4PB

### HEPATIC REFEREES:

**1,2,11,12,38,53-55,58,64-67,69:** D.G. Long, Herbarium, Royal Botanic Garden, Edinburgh, EH3 5LR

**3-10,18-24:** Dr M.E. Newton, Department of Botany, Liverpool Museum, William Brown Street Liverpool, L3 8EN (All mail to be marked 'Private'.)

**13-17,36,37,39-44:** G.P. Rothero, Stronlonag, Glenmassan, By Dunoan, Argyll, PA23 8RA

**25-35,45-47:** M.F.V. Corley, Pucketty Farm Cottage, Faringdon, Oxfordshire, SN7 8JP

**48-52,78-86:** M.J. Wigginton, Joint Nature Conservation Committee, Monkstone House, City Road, Peterborough, PE1 1JY

**56,57,59-63,68,70-74:** T.L. Blackstock, Nature Conservancy Council, Ffordd Penrhos, Bangor, Gwynedd, LL57 2LQ

**75-77:** G. Bloom, 15 Tatham Road, Abingdon, Oxfordshire, OX14 1QB

### MOSS REFEREES:

**1:** Dr M.O. Hill, Monk's Wood Experimental Station, Abbots Ripton, Huntingdon, PE17 2LS; A. Eddy, Department of Botany, Natural History Museum, Cromwell Road, London, SW7 5BD

**2-10,143:** Dr M.O. Hill (address above)

**11-36:** M.F.V. Corley (address above)

- 37,38,62-66: Dr A.J.E. Smith, School of Biological Sciences, Brambell Building, University College of North Wales, Bangor, Gwynedd, LL57 2UW
- 39,67-81,96-104: N.G. Hodgetts, Joint Nature Conservation Committee, Monkstone House, Peterborough, PE1 1JY
- 40-61: Dr D.F. Chamberlain, Dept of Botany, Royal Botanic Garden, Edinburgh, EH3 5LR
- 82-90,105: Dr E.V. Watson, Little Court, Cleeve, Goring on Thames, Reading, Berkshire, RG8 0DG
- 91-95: A. Orange, Department of Botany, National Museum of Wales, Cardiff, CF1 3NP
- 106-138: M.J. Wigginton (address above)
- 139-142,144-175: A.C. Smith, End House, 24 Shelfanger Road, Diss, Norfolk, IP22 3EH

### B.B.S. LIBRARY SALES AND SERVICE 1996

#### FOR LOAN (U.K. Members only):

Members wishing to borrow books or papers are advised to consider whether a Xerox copy of the appropriate pages would suffice instead of the original in those cases where copyright has expired. Charge 10p per exposure. Limit 50.

(a) Approximately 250 bryological books and journals and several thousand offprints of individual papers. A catalogue of the books and journals is available, price £1.00.

(b) Transparency collection, list available (s.a.e.). 630 slides in the collection. Loan charge (to cover breakage of mounts) 50p plus return postage. Only 50 slides may be borrowed at a time to minimize possible loss or damage.

(c) Microscope stage-micrometer slide for calibration of eyepiece graticules. 10µm divisions. Loan deposit £45.00.

#### FOR SALE:

British Bryological Society Bulletins: back numbers from no. 23 @ £1.00 each.

Transactions of the British Bryological Society/Journal of Bryology:

Vol. 1	parts 1-5	(£2.40 each) £12.00 per volume
Vol. 2	part 1-4	(£3.00 each), part 5 out of print
Vol. 3	parts 1-5	(£2.40 each) £12.00 per volume
Vol. 4	parts 1, 3-5	(£2.40 each), part 2 out of print
Vol. 5	parts 1-4	(£3.00 each) £12.00 per volume
Vol. 6	parts 1-2	(£6.00 each) £12.00 per volume - ends series of <i>Transactions</i>
Vols. 7-9	parts 1-4	(£5.00 each) £20.00 per volume - renamed <i>Journal of Bryology</i>
Vol. 10	parts 1,3,4	(£8.00 each), part 2 out of print
Vol. 11	parts 1-4	(£10.00 each) £40.00 per volume
Vol. 12	parts 1-3	(£11.50 each), part 4 out of print
Vol. 13	parts 1-4	(£15.50 each) £62.00 per volume
Vol. 14	parts 1-4	(£18.00 each) £72.00 per volume
Vol. 15	parts 1-4	(£22.50 each) £90.00 per volume
Vol. 16	parts 1-4	(£29.75 each) £119.00 per volume
Vol. 17	parts 1-4	(£39.50 each) £158.00 per volume
Vol. 18	parts 1-4	(£42.25 each) £169.00 per volume

#### B.B.S. Special Volumes:

1. Longton, R.E. & A.R. Perry, 1985. Proceedings of Jubilee Meeting 1983, 89 pp.(£6.00)

2. Newton, M.E., 1989. A Practical Guide to Bryophyte Chromosomes, 19 pp. (£2.50)
3. O'Shea, B.J., 1989. A Guide to Collecting Bryophytes in the Tropics, 28 pp. (£3.50)
4. Edwards, S.R., 1992. Mosses in English Literature, 44 pp. (£2.50)

Census Catalogues:

- Duncan, J.B., 1926. Census Catalogue of British Mosses, 2nd edition (20p)  
 Sherrin, W.R., 1946. Census Catalogue of British Sphagna (20p)  
 Warburg, E.F., 1963. Census Catalogue of British Mosses, 3rd edition (20p)  
 Paton, J.A., 1966. Census Catalogue of British Hepatics, 4th edition (20p)  
 Corley, M.F.V. & M.O. Hill, 1981. Distribution of Bryophytes in the British Isles:  
 a census catalogue of their occurrence in vice-counties  
 Price incl. p.& p.: members (£5.00), non-members (£6.00), trade (£4.00)

Other items:

- Evans, D.E. & A.R. Perry, 1987. Moss Wall Chart Price incl. p.& p. (£2.80)  
 Grolle, R., 1983. Hepatics of Europe and the Azores: an annotated list of species  
 with synonyms Price incl. p.& p. (£2.50)  
 Newton, M.E. *et al.*, (eds), 1988. Bryology: modern research and the ways forward (£5.50)  
 Pearman, M.A., 1979. A short German-English bryological glossary (£0.50)  
 Perry, A.R., 1992. Mosses and liverworts of woodland, 41 pp. (£2.95)  
 BBS Tie, claret with single BBS logo (£4.95)  
 Swift x20 handlens and leather case (£11.70)  
 Patterson no. 2 stainless steel forceps (£2.00)  
 Idealtek no 3 stainless steel forceps (£9.30)  
 Eyepiece graticule 1 cm x 10 micrometer, 16 mm diam. (£25.00)

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 PLEASE DO NOT INCLUDE CASH WITH ORDERS. Customers will be invoiced for the correct amount including p.& p. (postage and packing is extra unless stated). Address label legibly printed would be appreciated. All the above are available from the BBS Librarian:  
*Kenneth J. Adams, 63 Wroths Path, Baldwins Hill, Loughton, Essex, IG10 1SH, U.K.*  
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**TRANSACTIONS OF THE BRITISH BRYOLOGICAL SOCIETY – BACK NUMBERS**

The remaining stocks of our *TBBS* parts are now mostly down to single figures and additional parts are likely to run out over the next year. Council has no plans to reprint missing parts because of the cost at today's prices, but the Librarian is willing to purchase outstanding parts at full price (to keep the stocks going a little longer, if any members are wishing to sell individual parts or sets, in good condition.

Ken Adams, BBS Library & Sales

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**BBS TROPICAL BRYOLOGY GROUP – PROGRESS IN 1995**

**Uganda expedition**

The most important event of 1995 for the TBG was the success of our application for a grant from the government's Darwin Initiative, for three expeditions to Uganda. The first of these expeditions was arranged at short notice, and left for Uganda on 20 January 1996. Because of the short notice, the expedition members had to be decided on very quickly, and the six

UK-based members are Nick Hodgetts, Martin Wigginton, Ron Porley, Robin Stevenson, Howard Matcham and Jeff Bates. The first three of these also went on the Malawi expedition, providing a degree of continuity and experience. There will be two Ugandans on the expedition, from Makerere University. The TBG is now the proud owner of two GPSs (Global Positioning Systems), which give instant readings of grid reference and latitude/longitude, and which will no doubt prove invaluable in the forest. The first year's target is Bwindi (Impenetrable) Forest, a National Park in the SW of Uganda, near the borders of Rwanda and Zaire. It is a moist, evergreen, sub-montane and montane forest with what is described as an 'extremely rugged' topography, and is one of the main strongholds of the mountain gorilla. It is unusual to find an altitudinal range from 1100 to 2600 m still with forest cover, so one of the team's projects will be to look at altitudinal variation in bryophyte cover and diversity. The forest is known as a centre of endemism, although it is not thought to be part of the Pleistocene refugium centred on eastern Zaire; it is assumed that the plants migrated into Bwindi as the climate became less severe. There is no checklist of the plants of the Bwindi forest, so the expedition will provide valuable input to this, and to the continuing attempts to make this forest a model of conservation activity in tune with the local population. The plan over the three years is to look at the forest belt in western Uganda, and the initial plan for future expeditions is to look at forest on the lower slopes of the Ruwenzori mountains, and also the Mgahinga Gorilla National Park. Preliminary investigations of existing Ugandan collections suggest that the latter area may already be well-worked, and so the final decision on next year's expedition will not take place until after this information is reviewed. It is hoped that the expedition team members will be able to identify many more specimens themselves than was possible with the Malawi expedition, because of increased expertise and literature availability, and thus the specimens should be processed more quickly, so the input of one expedition can feed into the next. In parallel with this it is hoped to work on some of the unidentified Uganda material in the BM. It is one of the TBG's objectives to exploit the wealth of existing collections, as well as to collect specimens.

#### **Malawi Expedition collections**

The current estimate is that 3274 specimens have now been looked at by experts, or are now available for examination (and this is probably an under-estimate), but less than half this number have so far been confirmed to species. 131 species have been identified as new to the Malawi checklist, a 43% increase to the existing list! The first three papers containing taxonomic results will appear in the next *Journal of Bryology*, and several more are underway. The main delay is caused by the need for major revisions in many genera and families. Several hundred specimens are also held awaiting further investigation because of our inability to key them to family; many are just labelled 'pleurocarp' for instance. If there is anyone out there who would like to help, please get in touch: much assistance can be given even by those unfamiliar with tropical bryophytes.

#### **Eustace Jones' West African Hepatic Flora**

The text of Eustace Jones' flora has now been fully revised, but a number of illustrations need adding or re-drawing. Martin Wigginton is seeking helpers for this task. Although the book should be completed during the year, it will be a rush to get it out before the end of the Centenary year.

#### **Lists of tropical African bryophytes**

Checklists have now been produced covering all the bryophytes of sub-Saharan Africa, including Atlantic and Indian Ocean islands. This makes the task of identification that much simpler, and provides a base for future taxonomic work. Brian O'Shea's 'Checklist of the

mosses of sub-Saharan Africa' appeared in *Tropical Bryology* **10**: 91-198, and for hepatics and anthocerotous, Martin Wigginton's checklist (excluding East African islands) is now being reviewed for publication, and Riclef Grolle's checklist of the East African islands was published in *Bryophytorum Bibliotheca* **48**: 1-178.

#### **Other news**

Nine TBG members (three from England) attended the IAB Tropical Bryology conference in Mexico City in August 1995, and all gave papers. The proceedings will be published in *Anales del Instituto de Biología Serie Botánica*.

Only one newsletter was published during the year to members of the group, mainly due to pressures on time. There were four new members, and one death (Paul Richards) (giving a membership of 46).

Brian O'Shea, 141 Fawnbrake Avenue, London SE24 0BG

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#### **Bryological contract work**

The importance of bryophytes as a taxonomic group requiring proper conservation is being increasingly recognized by National and Local Government Bodies (including local planning authorities), as well as N.G.Os (non governmental organizations), such as Wildlife Trusts. The B.B.S. and a number of its members (particularly the Regional Recorders) are being approached by these organizations as well as by individuals working on specific projects with requests for advice and information on bryophytes and sometimes also for identification and survey work. If the work concerned is time-consuming or involves expensive travelling, it is normally expected to be provided on a fee-paying basis.

The Recording Secretary and I are proposing to hold a list of members who are prepared to undertake work as paid contractors/consultants. Because of the status of the BBS as a Charity this list cannot be an official one (i.e. not officially approved by the BBS) and this will be made clear when sending the list to the organization or individual requiring work to be done.

Would any member who wishes to have his or her name on this list please let me know. I intend to update the list every 2 or 3 years.

R.C. Stern, Conservation Officer

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#### **The Botanical Research Fund**

The Botanical Research Fund is a small trust fund which annually, in May, makes modest grants to individuals to support botanical investigations of all types and, more generally, to assist their advancement in the botanical field. It is available to amateurs, professionals and students who are unable to obtain support from other sources. Where appropriate, grants may be awarded to applicants in successive years to a maximum of three.

Applications should be made in writing (there are no forms) to the Hon. Sec:-

Professor Keith Jones, 57 Marksbury Avenue, Richmond, Surrey, TW9 4JE

## COMMON NAMES FOR BRITISH BRYOPHYTES

BBS Council (Autumn 1992) agreed that a list of common names for bryophytes should be drawn up and published. The list has so far accumulated 2,738 published or submitted English names for British bryophytes (2,317 for mosses, 12 for hornworts, and 325 for liverworts), plus 84 names for non-British bryophytes. Of the British bryophytes, 85 species of moss, no hornworts, and 115 liverworts, still lack an English name. Most of the names have each been found in two or more sources, several times in eight or more sources although these include duplicate finds through secondary sources. A total of 70 sources have been examined and referenced, and many of these have themselves gathered from further sources which are subreferenced here when known.

I have one major source that I know of yet to see, and time is now coming when I should like to complete the list. So this may be the last chance to trawl the collective memory or imagination of the BBS membership. I should welcome suggestions for common names for those bryophytes yet lacking any, listed below, or for any newly described species, or for any that you think I may have missed anyway. Please send to Sean Edwards, Manchester Museum, Manchester University, Oxford Road, Manchester M13 9PL

### MOSESSES

<i>Amblystegium compactum</i>	<i>Eriopus apiculatus</i>	<i>Plagiothecium succulentum</i>
<i>Amblystegium humile</i>	<i>Eurhynchium swartzii</i>	<i>Platydictya confervoides</i>
<i>Anoetangium aestivum</i>	<i>Fissidens celticus</i>	<i>Pohlia camptotrachela</i>
<i>Aongstroemia longipes</i>	<i>Fissidens curnowii</i>	<i>Pohlia carnea</i>
<i>Atrichum tenellum</i>	<i>Fissidens polyphyllus</i>	<i>Pohlia lutescens</i>
<i>Barbula ferruginascens</i>	<i>Fissidens rufulus</i>	<i>Pohlia myldermaensis</i>
<i>Barbula mamillosa</i>	<i>Funaria attenuata</i>	<i>Pohlia rothii</i>
<i>Barbula nicholsonii</i>	<i>Funaria fascicularis</i>	<i>Pottia commutata</i>
<i>Brachythecium mildeanum</i>	<i>Funaria obtusa</i>	<i>Racomitrium affine</i>
<i>Bryum creberrimum</i>	<i>Grimmia retracta</i>	<i>Rhabdoweisia crenulata</i>
<i>Bryum dunense</i>	<i>Gymnostomum insigne</i>	<i>Rhynchostegiella curviseta</i>
<i>Bryum elegans</i>	<i>Hedwigia stellata</i>	<i>Rhynchostegium alopecuroides</i>
<i>Bryum gemmiferum</i>	<i>Hygrohypnum eugyrium</i>	<i>Schistidium alpicola</i>
<i>Bryum gemmilucens</i>	<i>Hyophila stanfordensis</i>	<i>Sphagnum majus</i>
<i>Bryum microerythrocarpum</i>	<i>Hypnum callichroum</i>	<i>Sphagnum molle</i>
<i>Bryum mildeanum</i>	<i>Hypnum lacunosum</i>	<i>Sphagnum pulchrum</i>
<i>Bryum sauteri</i>	<i>Hypnum mamillatum</i>	<i>Sphagnum strictum</i>
<i>Calliargon giganteum</i>	<i>Hypnum resupinatum</i>	<i>Thuidium philibertii</i>
<i>Campylium calcareum</i>	<i>Isopterygiopsis muelleriana</i>	<i>Thuidium recognitum</i>
<i>Campylopus polytrichoides</i>	<i>Isothecium holtii</i>	<i>Tortella densa</i>
<i>Cinclidotus mucronatus</i>	<i>Lescurea patens</i>	<i>Tortula amplexa</i>
<i>Cirriphyllum crassinervium</i>	<i>Mielichhoferia elongata</i>	<i>Tortula canescens</i>
<i>Cratoneuron decipiens</i>	<i>Orthotrichum schimperii</i>	<i>Tortula rhizophylla</i>
<i>Cynodontium gracilescens</i>	<i>Oxystegus hibernicus</i>	<i>Tortula latifolia</i>
<i>Cynodontium jenneri</i>	<i>Philonotis seriata</i>	<i>Tortula virescens</i>
<i>Dichodontium flavescens</i>	<i>Philonotis tomentella</i>	<i>Trichostomopsis umbrosa</i>
<i>Dicranella staphylina</i>	<i>Pictus scoticus</i>	<i>Weissia sterilis</i>
<i>Dicranum glaciale</i>	<i>Plagiothecium cavifolium</i>	<i>Zygodon baumgartneri</i>
<i>Ditrichum zonatum</i>	<i>Plagiothecium laetum</i>	
	<i>Plagiothecium platyphyllum</i>	TOTAL: 88 species
	<i>Plagiothecium ruthii</i>	



## HORNWORTS

TOTAL: 0 species

## LIVERWORTS

*Anthelia juratzkana*  
*Aphanolejeunea microscopica*  
*Barbilophozia attenuata*  
*Bazzania tricrenata*  
*Calypogeia arguta*  
*Calypogeia fissa*  
*Calypogeia muelleriana*  
*Calypogeia neesiana*  
*Calypogeia sphagnicola*  
*Calypogeia suecica*  
*Cephalozia hibernica*  
*Cephalozia leucantha*  
*Cephalozia loitlesbergeri*  
*Cephalozia humilifolia*  
*Cephalozia macrostachya*  
*Cephalozia pleniiceps*  
*Cephaloziella divaricata*  
*Cephaloziella elachista*  
*Cephaloziella hampeana*  
*Cephaloziella rubella*  
*Cephaloziella stelldifera*  
*Cephaloziella subdentata*  
*Chandonanthus setiformis*  
*Cladopodiella fluitans*  
*Cololejeunea calcarea*  
*Cololejeunea rossettiana*  
*Diplophyllum taxifolium*  
*Douinia ovata*  
*Drepanolejeunea hamatifolia*  
*Fossombronina caespitififormis*  
*Fossombronina husnotii*  
*Fossombronina incurva*

*Frullania microphylla*  
*Frullania teneriffae*  
*Gymnomitrium crenulatum*  
*Gymnomitrium obtusum*  
*Harpalejeunea ovata*  
*Harpanthus flotvianus*  
*Hygrobliella laxifolia*  
*Jungermannia atrovirens*  
*Jungermannia borealis*  
*Jungermannia confertissima*  
*Jungermannia exsertifolia*  
*Jungermannia obovata*  
*Jungermannia paroica*  
*Jungermannia subelliptica*  
*Kurzia sylvatica*  
*Kurzia trichocladus*  
*Leiocolea alpestris*  
*Leiocolea bantriensis*  
*Leiocolea heterocolpos*  
*Leiocolea fitzgeraldiae*  
*Lejeunea lamacerina*  
*Lejeunea patens*  
*Lepidozia cupressina*  
*Lepidozia pearsonii*  
*Leptoscyphus cuneifolius*  
*Lophocolea bispinosa*  
*Lophocolea semiteres*  
*Lophozia bicrenata*  
*Lophozia longidens*  
*Marsupella adusta*  
*Marsupella brevissima*  
*Marsupella emarginata*  
*Marsupella funkii*  
*Mastigophora woodsii*  
*Mylia taylorii*  
*Nardia breidleri*  
*Nardia geoscyphus*  
*Odontoschisma denudatum*

*Odontoschisma elongatum*  
*Pedinophyllum interruptum*  
*Pellia borealis*  
*Plagiochila atlantica*  
*Plagiochila britannica*  
*Plagiochila carringtonii*  
*Plagiochila corniculata*  
*Plagiochila killarniensis*  
*Plagiochila porelloides*  
*Plagiochila punctata*  
*Pleurocladula albescens*  
*Porella cordaeana*  
*Porella obtusata*  
*Ptilidium pulcherrimum*  
*Radula aequiloba*  
*Radula lindenbergiana*  
*Scapania aequiloba*  
*Scapania aspera*  
*Scapania calcicola*  
*Scapania curta*  
*Scapania cuspiduligera*  
*Scapania degenii*  
*Scapania gracilis*  
*Scapania gymnostomophila*  
*Scapania irrigua*  
*Scapania lingulata*  
*Scapania parvifolia*  
*Scapania scandica*  
*Scapania subalpina*  
*Scapania uliginosa*  
*Sphenolobopsis pearsonii*  
*Sphenolobus minutus*  
*Tritomaria exsectiformis*  
*Tritomaria polita*  
*Tritomaria quinquedentata*

TOTAL: 105 species

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## BBS SWEATSHIRTS

BBS sweatshirts have sold well, with 78 already being sported by members. This leaves only 7 medium Ash (a slightly mottled grey), and 10 medium Burgundy. They will be on sale at the 1996 Spring meeting at Dolgellau, but only small people need apply because the sizes are a little optimistic, and the only size left (so-called 'Medium') had better be regarded as small. Those unable to wait until then can buy them by post from me. This venture is now well into profit, so every shirt you buy (for your children?) directly helps the Society.

The sweatshirts are 'Genuine 3-needle Tomkin fleece, 50% polyester 50% cotton, machine washable, tumble dry, with 5-needle Raglan stitch', longsleeves, and bear a green and gold(ish) 4" diameter BBS logo (as featured on the *Bulletin* cover) on the left breast. In other

words, very attractive, lightweight, warm, suitable for under-jacket wear in the winter, and on their own in the summer. Cost £12, plus postage and packing (£2.50 first class boxed recorded delivery).

Please send cheque (payable to the British Bryological Society), to: Sean R. Edwards, The Manchester Museum, Manchester University, Oxford Road, Manchester M13 9PL (or better still, the postage & packing part payable separately to me). 'Phone for more information:- work 0161-275-2671, home 0161-442-9346.

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## BBS POSTCARDS

BBS postcards are selling well, with 586 sets of 16 cards sold so far. That is an astonishing 9,376 cards, which are now publicising the BBS. Still, we need to sell a further 240 sets to break even.

If you haven't bought your sets yet, and also if you have, each set of 16 colour postcards of British bryophytes costs only £2.95, which is 18½p a card. They have been bought by several major retail outlets, who are selling them for up to 30p per card. Order several sets and:

- \* publicise mosses and liverworts;
- \* help the BBS (we must sell more than one set per member to break even!);
- \* impress your friends;
- \* save money by not buying other more expensive cards.

Post them off to somebody (preferably not BBS members, who will already have some), and buy more! The A6 postcards are printed by Judges, and are laminated with semi-gloss anti-UV film. The photographs are the best 16 selected from 186 entries to the BBS photographic competition. They will be on sale at the 1996 Spring meeting at Dolgellau.

Available from: Sean Edwards, Manchester Museum, Manchester University, Oxford Road, Manchester M13 9PL, U.K. Postage and packing 50p extra for one set, 60p for two, 70p for three, and £1.00 for 4 sets (because of the bigger envelope). Also available at BBS meetings. Cheques payable to the British Bryological Society. 'Phone for more information:- work 0161- 275-2671, home 0161- 442-9346.

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## The Bygone Botanists of Herefordshire

'The bygone botanists' describes the exploration of Herefordshire's flora during the last 200 years. Augustin Ley, Eleonora Armitage and Charles Binstead all figure prominently, having contributed substantially to elucidating the bryoflora of their home county. Each botanist's interests and discoveries are discussed in the context of social and botanical history, from the rise of the Woolhope Naturalists' Field Club, the famous 'forays among the funguses', the fieldwork for Purchas and Ley's *Flora* of 1889, to the time of the Herefordshire Botanical Society since the Second World War.

The article costs £3.75 (incl. p.& p.) from the Hon. Treasurer, Herefordshire Botanical Society, 7 Church Street, Presteigne, Powys, LD8 2BU. Please make your cheque payable to the 'Herefordshire Botanical Society'. All proceeds will help defray costs of the projected *Herefordshire plant atlas*.

## COARSE *BRYUM* GROWING

Michael FLETCHER

70 South Street, Reading, Berkshire, RG1 4RA, U.K.

I have at present over 100 cultivars, including about(!) 30 British species, and up to 15 from elsewhere, notably New Zealand and Greenland. Many are duplicated to reduce the risk of chance loss. The oldest date is from before 1970, but the genus has become an especial interest of mine recently, and over half have been added since 1993, notably *Bryums* of urban Reading, plants of zinc-contaminated habitats, and duplicates of material from Labrador and Morocco, collected for experimental work at Reading University by Terry Hedderson.

For many years most were kept rather conventionally in pots of soil, spread in a thin layer over peat, in rather dry conditions. For *B. argenteum*, and other plants of similar appearance (*Anomobryum*, etc.) this seemed pretty useless, though I do not understand why. My accession catalogue records 6 attempts to grow *B. argenteum* before 1980 in pots of soil. All disappeared without trace, yet in mounted culture it is a quite straightforward plant.

In 1991-92 many cultures were replanted more carefully in pots of sand with loam or lime added, wet in winter. Some increased rapidly, but many were still overrun by other species, especially by *Bryum dunense*. A pot containing a few sickly remnants and hundreds of young shoots of other unnameable *Bryums* is not a pretty sight. I have had good cultures in pots here destroyed by insect larvae. *Bryums* in pots of soil in a greenhouse at Reading University grow very well at times, but many there have also been damaged or destroyed by larvae.

Many test-tube cultures made in 1991 on Fison's 'nutrient gel' were of *Bryums*. Most survived four years of neglect, though not in any recognizable form, and regenerated when replanted on soil in winter 1994-95.

The greatest improvement was the move in 1993 to 'mounted' cultures, initially to rescue scarce or unhealthy cultures. This was so successful that almost all *Bryums* here are now grown on thin layers of peat or soil on pieces of polystyrene tile. I do not know any which cannot be grown thus. Even bulbiferous *Bryums* such as *B. microerythrocarpum*, which are normally on soil, grow more reliably and cleanly.

'Mounted' cultures dry out more quickly than pots of soil, but this is an advantage, for a plant on a thin layer of soil is easily and thoroughly wetted, even with a small handspray, and yet in spring and summer does not remain wet so long if temperatures rise too high for safety, say above about 40°C by day, or 20°C by night. Weeds and adventives are fewer and less troublesome in mounted cultures than in pots of soil, and far smaller amounts of a plant (even single shoots or fragments of protonema), can be handled, observed and reliably grown. There is thus far less risk of finishing up with the wrong species.

I do not yet know of any *Bryum* which is destroyed by desiccation. Most are dry for much of the summer. Even *B. weigelii* and *B. riparium* reach the autumn in better condition and regenerate better if left dry in summer, though it would be rash to expose them to the hot

sunshine and extreme high greenhouse temperatures (over 60°C.) which some of the genus can survive. A few, including *B. weigelii* and *B. pseudotriquetrum* will also endure fairly high temperatures (up to about 40°C) with some sunshine on wet soil, if well lit. They can occur here as weeds among *Philonotis*, etc. Most *Bryums* are overrun or damaged in such conditions.

Most dislike deep shade and, if kept humid and shaded in summer, make poor etiolated shoots. They are best kept in stronger light, as on a top greenhouse shelf. However *B. capillare* is a widespread weed here, and can occur in small amounts on almost any substrate and in almost any culture, including those which are shaded and moist in summer. *B. billardieri* from New Zealand (a much larger relative of *B. capillare*) and a broad-leaved rosette-forming *Bryum* from Papua (resembling a *Rhodobryum*) grow best on well-drained or mounted humus or decayed wood on a shaded damp lower shelf.

*Bryums* can grow in a wide range of temperatures. On a sunny top greenhouse shelf where January temperatures may reach 15°C in sunshine, *Bryums* are at their best, and grow fast. This is equally true of *Bryums* of warm habitats, even some nondescript ones from Egypt. *B. weigelii* and *B. cryophilum* from Greenland were put on wet soil in the refrigerator late this summer, next to the icebox, where they were intermittently covered in ice, and never much above 0°C, yet they grew about as well as the same plants elsewhere. At the other extreme, between June and early September 1994, many mounted *Bryums* on a top shelf were intermittently wet, sometimes experiencing temperatures as high as 40°C before drying out. A few made useful growth in high summer. In the hotter 1995 summer all were dry, hot but shaded. They are draped in polythene for much of the spring and autumn, to speed growth by keeping them more continuously wet. They benefit from thorough wetting, rather than light spraying.

Substrate seems not very critical. Most *Bryums* here are on a medium-textured slightly basic loam, often a trace of garden soil, higher in nutrients than might be desirable for some mosses of soil. If it gets washed away, more can be sprinkled over the culture. Tufts of moss can be spread out, squashed, or attached initially by spearing them onto the polystyrene (I use *Berberis* spines). Protonema may grow into the polystyrene, soon anchoring the plants. A few, such as *B. radiculosum*, *B. canariense*, *B. elegans*, and some forms of *B. pallens*, are on limestone or basic soil. A trace of lime can make an acid culture basic. If they stop growing well, especially if too contaminated by algae, cultures can be discarded or kept as herbarium specimens, and a few shoots laid sideways on a fresh culture. New shoots or protonema can appear in as little as a week.

*Bryums* are among the most difficult of all mosses taxonomically, and, to be honest I am not very successful at naming them. I have some older plants (pre-1980) from sterile gatherings which have never fruited and are still not reliably named. Their interest, if any, is in their antiquity, though some might make capsules eventually. As on wild *Bryums* in Reading, setae start growing in late autumn and capsules ripen in spring, but the 1995 crop was disappointing. In hot May weather capsules on several cultures of zinc *Bryums* shrivelled before ripening. Trying to prolong growth till they were mature, by keeping plants moist and draped in polythene, caused further damage, since if the polythene touched young setae it bent and deformed them. So I am still no wiser about the identity of the more peculiar ones.

Vegetative characters are not totally reliable. Recurved margins, borders, excurrent nerves and axillary protonema are sometimes missing, especially from young growth, in plants that

look healthy and normal and ought to have them. Colour, leaf shape and general habit in some cultures can vary greatly over a year. There are sometimes small but consistent differences between different clones of the same species. Stem colour in normal plants of some species is characteristic, or varies within characteristic limits. Yet I think that in general plants which can be named on vegetative characters can be named sooner or later from cultured material. I have not seen many of the species considered unnameable without fruit, but suspect they would probably remain unnameable in culture.

There seems to be unfinished taxonomic business among several common species. I have no wish to enter a taxonomic minefield, but feel also that the distinctions between many species are smaller than would be accepted in most genera.

The opportunity I have enjoyed, to watch so many growing *Bryums* so closely and so conveniently must be unique. Even nondescript urban ones can produce fine colourful material in culture. Since *Bryums* are among the hardiest and most consistently easy mosses to grow, and since live plants which can be propagated and distributed are a far more valuable resource – even if sterile – than herbarium material, they should surely be used whenever possible by any taxonomist working on the genus, and perhaps kept in culture for later reference.

I have kept comments on individual species to a minimum here, but an annotated list of current cultures is available to anyone interested. Material of most is available, though often in amounts rather small for a herbarium. Return postage would be appreciated, as would puzzling or abnormal plants or new species to grow.

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### **The disappearance of *Splachnum ampullaceum* Hedw.**

Alan Crundwell, in his comments in the *Atlas* (Hill, Preston & Smith, 1994) on the disappearance of *Splachnum ampullaceum* from southern England, attributes it largely to habitat destruction and water table lowering. However, a recent article in the *Independent on Sunday* (Lean, 1995), in drawing attention to the decline in swallow numbers over the last 25 years, suggests that, among other factors, the use of certain chemicals to control cattle parasites may result in cow pats becoming sterile, thus affecting the number of flies and other insects breeding on them. Could this be a further factor in the decline of *Splachnum ampullaceum*?

#### **References**

- Hill MO, Preston CD, Smith AJE. 1994.** *Atlas of the Bryophytes of Britain and Ireland. Volume 3. Mosses (Diplolepidae).* Colchester: Harley Books.
- Lean G. 1995 (11 June).** The sacred swallow, summer's missing guest. *Independent on Sunday.* London.

ROBIN STEVENSON

## News from Missouri Botanical Garden (MO)

The Missouri Botanical Garden announces the acquisition by gift of the Bryological Herbarium of The Pennsylvania State University (PAC). This collection consists of about 25,000 specimens, mostly from North America. It includes an excellent representation of world-wide *Fissidens* and has strong holdings of Western Hemispheric Erpodiaceae. These two groups constitute the special research interests of R.A. Pursell.

The MO herbarium is rich in Pennsylvania mosses, having previously acquired the CM bryophyte herbarium, the basis for Otto Jennings's formative *The Mosses of Western Pennsylvania*. The PAC herbarium, with its numerous collections from Central Pennsylvania, complements this previous acquisition. The personal herbaria of Monte Manuel, Bruce Allen, and Lloyd Stark, also strong in Pennsylvania mosses, have been deposited in MO. Furthermore, these three collections are strong in mosses from Mexico and Malaysia (Manuel), Maine and Delaware (Allen), and California and New Mexico (Stark).

BRUCE ALLEN

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## INTERNATIONAL ASSOCIATION OF BRYOLOGISTS

IAB – The International Association of Bryologists is a world-wide organization dedicated to the advancement of all aspects of bryology. Currently the Association has well over 500 members. When you are member, you receive the following benefits:

- The newsletter *The Bryological Times* distributed 4-6 times per year, providing up-to-date information on the latest happenings in bryology. Editor: Lars Söderström, Trondheim, Norway.
- 25% discount on all Cramer publications, including *Advances in Bryology* published exclusively by IAB. Editor: Royce Longton, Reading, UK.
- The International Awards of IAB: the Sinske Hattori Prize for best paper; the Spruce Award for distinguished contributions; and the Hedwig Medal for long-term, outstanding service in bryology.
- The Stanley Greene Research Grant – awarded every two years for research in bryology.
- Biennial meetings – the next one in Beijing, China in 1997.
- Support of endangered and rare bryophyte species. Chairman: Tomas Hallingback.

Annual dues are 7 pounds sterling per year (\$11.00 US) of which \$1.00 US goes to support research in rare and endangered bryophyte species. British members may pay their dues to F.H. Dawson, Freshwater Biological Association, River Laboratory, East Stoke, Wareham, Dorset, BH20 6BB, UK.

For further information, contact Dale H. Vitt, Secretary IAB, Department of Biological Sciences, University of Alberta, Edmonton, Alberta, Canada, T6G 2E9.

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## Names in E.W. Jones' *African hepatics*

Dr E.W. Jones made a handwritten list of all hepatic names, including synonyms, in his series of *African hepatics* papers. If anyone would like to borrow this list please contact Dr P. Stanley, 48 Glisson Road, Cambridge, CB1 2HF, UK.

## Modern studies in *Drepanocladus*; a Poem

By ANON.

Lars Hedenäs of Sweden,  
By the Nine Gods he swore,  
The genus *Drepanocladus*  
Should trouble us no more.

The concept was old-fashioned  
Just taxonomic tedium,  
So he split it into several parts.  
And one of them's *Scorpidium*.

Perplexed and puzzled by the rest,  
He paused to scratch his ear,  
And after labours long and hard,  
Arrived at *Warnstorfia*.

Axillary hairs he laboured o'er,  
And peristomial matters,  
And other trivial details which  
Will drive us mad as hatters.

At last he faced the final rump  
'Now what on earth'll I call this?'  
Then final inspiration struck –  
And gave us *Hamatocaulis*.

Now sound his reasons may well be,  
For splitting, and not lumping,  
But as I struggle with new names,  
I'm half inclined to thump him!

(Apologies to Thomas Babington. Lord Macauley).

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## Lost and found

A BBS member visiting Flordon Common with the BBS on 10 September during the Paper-reading weekend in East Anglia lost a small red notebook and a hand lens. These were found by Ida Holmes near the gateway to the Common. They can be claimed from Richard Fisk, 1 Paradise Row, Ringsfield, Beccles, Suffolk, NR34 8LQ.



## CHANGES TO THE MEMBERSHIP LIST, JANUARY 1996

### NEW MEMBERS

- Buryova**, Ms Blanka, Kurimska 6, Praha 3, CZ-13000, Czech Republic (1996)
- Cox**, Cymon J., Department of Botany, Plant Science Laboratories, The University,  
Reading, Berkshire, RG6 6AS, UK (1995)
- Crowthier**, Mr K.A., 75 Hebble Vale Road, Wheatley, Halifax, West Yorkshire, HX2 8TL,  
UK (1996)
- Downing**, Dr Alison, School of Biological Sciences, Macquarie University, Sydney, NSW  
2109, Australia (1996)
- Frücht**, Dr Franz-Paul, Leo Tolstoi Straße 5, D-38820 Halberstadt, Germany (1996)
- Goode**, Mrs E.D., Flintstones, Polka Road, Wells-next-the-Sea, Norfolk, NR23 1EE, UK  
(1995)
- Griffiths**, Dr P., Vailima, Broomhall, Nr Nantwich, Cheshire, CW5 8BA, UK (1996)
- Heylen**, Olivier, Kerkstraat 36, 2222 Itegem, Belgium (1995)
- Jones**, Mr Andrew, Countryside Council for Wales, Ladywell House, Newtown, Powys,  
SY16 1RD, UK (1995)
- Kruijjer**, Drs J.D., Vierlinghlaan 146, NL-2332 CX, Leiden, The Netherlands (1996)
- Luca**, Dr Miserere, Via M. Voli 14, 10135 Torino, Italy (1995)
- Meier**, Markus, Josefstraße 102, CH-8005 Zurich, Switzerland (1995)
- Pankhurst**, Mr T.J., 44 The Avenue, Leighton Bromswold, Huntingdon, Cambridgeshire,  
PE18 0SH, UK (1995)
- Phillips**, Dr S., 66 Calder Road, Bellsquarry, Livingston, West Lothian, EH54 9AD, UK  
(1996)
- Ritson**, Mr A.W., Stainsacre Hall, Whitby, North Yorkshire, YO22 4NT, UK (1996)
- Ross**, Miss Sarah E., 'The Rookery', 196 Palatine Road, Didsbury, Manchester, M20 2WG,  
UK (1995)
- Sclater**, Mr Alastair D., 54 Innis House, East Street, London, SE17 2JN, UK (1996)
- Smith**, Mr J., 48 Dean Road, Handforth, Cheshire, SK9 3AH, UK (1996)
- Smith**, Dr E.C., Dept. of Agricultural & Environmental Science, University of Newcastle,  
Ridley Building, Newcastle-upon-Tyne, NE1 7RU, UK (1995)
- Stark**, Dr Lloyd R., Department of Biological Sciences, University of Nevada, 4505  
Maryland Parkway, Box 454004, Las Vegas, NV 89154-4004, USA (1996)
- Tranter**, Mr J., 1 Charmans Close, Horsham, West Sussex, RH12 4HQ, UK (1995)
- Veall**, Dr R.M., 1 Plant's Close, East Wellow, Romsey, Hants, SO51 6AW, UK (1996)
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