



BULLETIN  
OF THE  
BRITISH  
BRYOLOGICAL SOCIETY

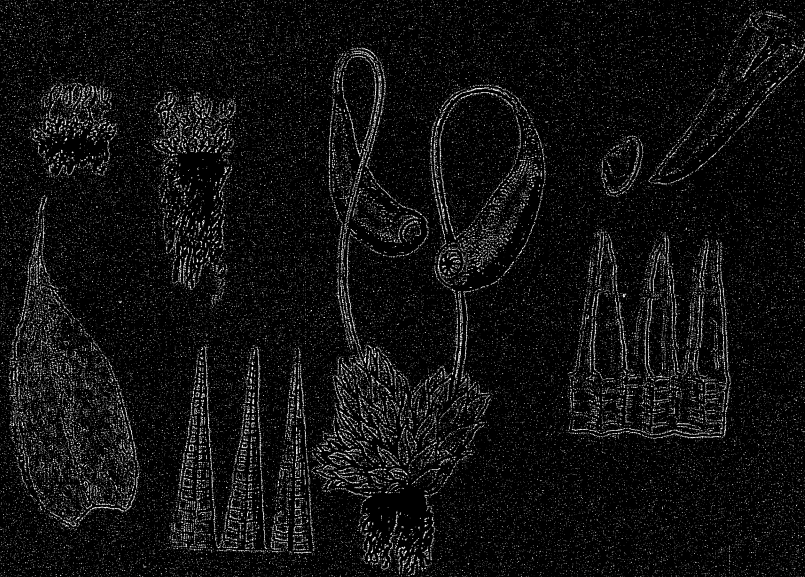
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*Edited by* M.J.M. Yeo

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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; £10.00 for Senior members, Junior members and Student members; and £1.00 for Family members (who do not receive the *Journal*).

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 *Bryum dominicum* (= *Plagiodium dominicum*) from W. Wilson's 3<sup>rd</sup> edition of *Hooker and Taylor's Muscologia Britannica*, 1853.



# BULLETIN OF THE BRITISH BRYOLOGICAL SOCIETY

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## ARTICLES FOR *BULLETIN* 79

Items for inclusion in the July 2002 issue of the *Bulletin* should be sent to me at the address below by **24 May 2002**. Wherever possible, material should be provided as word-processing files, either on disk or by e-mail.

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## SUBSCRIPTIONS FOR 2002

Subscriptions were due on 1 January 2002 and confirm entitlement to the *Journal of Bryology* and the *Bulletin* for the current year, as well as for the other services provided by the Society. If you have not already paid your subscription then an early remittance to the Membership Secretary (address below) will help to minimise postage costs.

I would like to thank all of those members who paid promptly last year. However, it was necessary to send reminders to over 160 people. Members will realise that this results in significant expense to the Society, and are asked to pay promptly to minimise such avoidable costs. My thanks also go to the considerable number of UK members who pay by standing order. This method is both simple and convenient, and also guarantees the Society at least some subscription income early in January! Standing order forms can be obtained direct from me at the address below if required.

Current rates are as follows:

Ordinary Members:	£20.00
Family Members:	£1.00
Concessionary Subscription:	£10.00

There are three categories of members who may opt to pay the concessionary subscription:

Senior Members:	Ordinary Members who have been members of the Society for 40 or more years.
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1. By £ Sterling cheque payable on a London bank.
2. By annual standing order from a UK bank account.
3. By credit card mandate (**ONLY** Barclaycard, Visa, Access, Mastercard, Eurocard accepted). **Since 1 December 2001 the cost to the Society of this method is 5% of the subscription; this must be included in the mandate, making a total of £21.00 for ordinary members (£10.50 for concessionary subscriptions).**

An alternative method of payment is available for North American members. For details of this please contact me at the address below.

Please note that both the collection and conversion of payments involves a cost to the Society and to the member, and this cost should be minimised as far as possible by prompt payment and choice of the most cost-effective system of payment available.

Cash is sent at sender's risk.

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## **PROCEEDINGS OF THE BRITISH BRYOLOGICAL SOCIETY**

Throughout the following accounts of BBS meetings, new vice-county records are indicated by an asterisk (\*). Nomenclature follows Blockeel & Long (1998), *A Check-list and Census Catalogue of British and Irish Bryophytes*.

### **BRITISH BRYOLOGICAL SOCIETY MEETING ON TENERIFE, CANARY ISLANDS, FEBRUARY 2001**

The archipelagos of northern Macaronesia (The Azores, Madeira and Canary Islands) have a fascinating and diverse flora, with habitats ranging from warm semi-deserts to wet evergreen broadleaved forests. With greater accessibility their bryophyte flora has become increasingly well-known in recent decades, but there is still more to discover.

The opportunity for the BBS to visit Tenerife, the largest of the Canary Islands, was due to Roy Perry's generous offer to organise a week's meeting from 16-23 February 2001. On a fairly large and diverse island such as Tenerife, Roy had the difficult task of packing a suitable programme of excursions into just six days of field work. This he did admirably well: we ranged widely over the island and visited a truly remarkable series of habitats.

Our base for the meeting was the tourist resort of Los Christianos, perhaps not the most obvious choice for a bryological meeting, but with plenty of accommodation and easy access to the road network. The participants in the meeting, in addition to Roy and Hilary Perry, were John Blackburn, Tom Blockeel, Gerard Dirkse, Uwe and Elena Drehwald, Gert and Elisabeth Mogensen, David Rycroft, Jonathan Sleath and Tony (A.J.E.) Smith. We were also joined on several days by Ana Losada-Lima of La Laguna University.

#### **SATURDAY 17 FEBRUARY**

##### **Barranco del Infierno**

Our first venue required only a short drive from Los Christianos to the village of Adeje and the Barranco del Infierno, at 300-600 m altitude. Barrancos in the Canary Islands are ravines

and gorges of various sizes. The Barranco del Infierno is particularly grand and impressive; it is approached by a path along steep slopes with xerophytic vegetation characteristic of the lowland parts of southern Tenerife. We set out without Gerard Dirkse, whose arrival in Tenerife had been delayed by flight problems. The first part of the path, on south-facing slopes fully exposed to the sun, was devoid of bryophytes, but provided an excellent opportunity to become familiar with some remarkable flowering plants. Among these were the cactus-like clumps of cardon (*Euphorbia canariensis*), with its succulent columnar stems reaching a height of two metres or more, and the shrubby *Euphorbia obtusifolia*, *Plocama pendula* and *Ceballosia (Messerschmidia) fruticosa*. Even the convolvulus (*C. floridus*) and dock (*Rumex lunaria*) formed shrubs, and there was a strange scrambling asclepiadaceous plant *Periploca laevigata*. The first bryophytes found were mainly on slopes sheltered from the full effects of the sun. They included *Crossidium crassinerve*, *C. squamiferum*, *Riccia gougetiana*, and a *Tortula* which may be *T. brevissima* but raises questions about the separation of this species from *T. muralis*. A small water channel leading from higher parts of the ravine contained *Philonotis rigida*. After about 30 minutes walk, the path descends to the bed of the ravine and the walls begin to close in. A few isolated specimens of the famous dragon tree (*Dracaena draco*) could be seen high on the crags above. Along the bed of the ravine there were stands of the Canary willow (*Salix canariensis*), and we made our first acquaintance with the magnificent Canary bellflower (*Canarina canariensis*) with its large pendent orange bells. There were some further bryophytes: *Grimmia laevigata* on a boulder, *Timmia barbuloidea* c.fr. in the stream bed, and *Frullania ericoides* on a bank of soft rock. Tom collected an odd moss from the muddy path, which proved to be *Chenia leptophylla*. We were to see this species several times again during the week. It is evidently a fairly common weedy species on the island.

This barranco is one of the few places in southern Tenerife where there is running water for much of the year. The stream is a small one and it eventually peters out, but at the head of the ravine it forms a high waterfall which bars further progress. This is the type locality for the moss *Platyhypnidium torrenticola*, originally described in the genus *Gradsteinia* but now known to be related to *Rhynchostegium (Platyhypnidium) riparioides*. Having *P. torrenticola* in mind, we looked at the aquatic mosses in the stream at various points, and *R. riparioides* was present. When we reached the head of the ravine, there was some confusion about the precise whereabouts of the type locality for *P. torrenticola*. Some of us investigated a dripping cliff and found a small spiky pleurocarpous moss which turned out to be *Rhynchostegiella teneriffae*. A little further along, the rest of the party found the main waterfall and in it a large sheet of pleurocarpous mosses, accessible only by wading into the large pool below. Jonathan did the noble thing, waded in, and was rewarded with *P. torrenticola*. Subsequently it turned out that a moss collected by Tom from a small waterfall further down the stream was also *P. torrenticola*, so there is more than one population of the species.

During the walk back to Adeje we finally met Gerard Dirkse. Gerard's knowledge of the local bryophyte flora was to prove invaluable to us during the meeting.

## Arona

Our next stop was a brief visit to a small barranco at 600 m near the village of Arona. As this was a shallow, open barranco, the xerophytic flora was rather different from that at Adeje. It was not long before we found a fine patch of *Gigaspermum mouretii* on thin soil on a ledge,

and there were a number of small Pottiaceae, including *Tortula atrovirens* (a species found in many subsequent localities), *T. perlimbata* (usually regarded as synonymous with *T. solmsii*), *Didymodon australasiae*, and further specimens of the moss resembling *T. brevissima*. Among the flowering plants, the strange *Ceropegeia fusca* (Asclepiadaceae) attracted attention.

### **Ifonche**

The final venue for the day was another xerophytic site, but this time at a higher altitude (1040 m) at the edge of Canary pine (*Pinus canariensis*) forest near Ifonche. There is a shallow barranco here, the upper part of Barranco del Rey, with open pine woodland nearby. Some of us searched the barranco, which proved to be an excellent place for thallose liverworts and small Pottiaceae. Among the former, *Exormotheca pustulosa* and *Targionia hypophylla* were found on soil on a ledge, and *Oxymitra incrassata*, *Riccia nigrella* and the very hairy *R. trichocarpa* in the barranco bed. The Pottiaceae included *Timmiella barbuloidea*, *Tortula ampliretis*, *T. cuneifolia* and a good quantity of *Crossidium geheebii*. Under the pine trees there were extensive sheets of *Gongylanthus ericetorum*. *Pleurochaete squarrosa* and *Acaulon muticum* s.l. were also found.

### **SUNDAY 18 FEBRUARY**

#### **Las Cañadas: Boca de Tauce**

No visit to Tenerife is complete without a trip to Mt Teide and the Las Cañadas National Park. The Park occupies a large caldera, the floor of which lies at about 2000 m altitude. The rim of the caldera is incomplete, but in places reaches over 2500 m high. In the centre the cone of Mt Teide rises to 3715 m, much the highest point in the Canaries and indeed Macaronesia. The caldera is a subalpine volcanic desert. There are some relatively recent lava flows dating from the 18<sup>th</sup> century. Bryophytes occur primarily on hard rocks on north-facing slopes, in sheltered places, and in the few gullies where seepages and trickles of water emerge.

We approached the caldera via Vilaflor and through open forests of Canary pine. These forests on the south-facing slopes of Tenerife are very dry, and have only a sparse ground vegetation. The effects of past forest fires can be seen in places. Canary pine is unusual in being fire-resistant; the shoots sprout back again from the burnt trunks and branches.

Our first stop was at Boca de Tauce to examine the rocky slopes at 2050-2100 m on the approach to Mont. Gangarro. We hoped to see the endemic *Grimmia curviseta* here, with its distinctive gymnostomous capsules, and were delighted to find it almost immediately. *Grimmia* indeed was the most prominent genus on the rocks and boulders: we also saw *G. laevigata*, *G. ovalis* and a sterile species of the *G. montana* complex. Other mosses on the rocks included *Syntrichia virescens*, *Schistidium flaccidum*, *Orthotrichum rupestre* and, in deep crevices, *Fabronia pusilla*.

#### **Barranco de los Riachuelos**

While the rest of us were searching these rocks, Roy had a rendezvous at the visitor centre a little way along the road at the parador. There he discovered that as today was a Sunday there

would be a *manifestación* (demonstration) on the road through the caldera. This has become a regular event each week; the demonstrations are in protest by hunters against the proposed elimination of mouflon from the park. The mouflon were introduced in the 1970s but have had a damaging effect on the native vegetation, which evolved in the absence of grazing ungulates. This meant a rapid change of plans for the day, and put an end to our own intended bryological manifestation at El Portillo on the other side of the Park. After some discussion, we decided to visit a barranco on the north side of the caldera wall, at the Fuente de los Riachuelos (2000-2100 m alt.). The *Fuente* is a spring giving rise to a small stream in the barranco, a rare phenomenon in the caldera. Initially we headed into the wrong barranco, and to find the spring some of us crossed over into the next ravine. The stream was duly found, and in it beds of sharp-leaved *Carex paniculata* subsp. *calderae*. There were a few bryophytes in and near the stream. *Brachymerium notarisii* with capsules was by a little waterfall, and there were some sterile *Bryums*. A trickling rock face had *Rhynchostegium riparioides*. Unexpectedly, in an excavated tunnel (dug for water catchment) we found *Aulacomnium androgynum* and *Leptobryum pyriforme* in quantity. The *Aulacomnium* was also found in a natural habitat among the roots of a small stand of *Salix canariensis*. *Philonotis fontana* was in another seepage area.

### Vilaflor

In the early afternoon, after confirming that the road past the Mt Teide telerifico was indeed blocked, we made our way back down to Vilaflor. Tom was keen to search for xerophytes in the low-lying barrancos in the south-west of the island, and it was unlikely that we would have any further opportunities on subsequent days. We made a short stop just above Vilaflor during our descent, to look at the Barranco del Chorillo, a dry barranco in pine forest at 1450 m. Here we found good fruiting material of *Fabronia pusilla* in rock crevices, and a patch of *Frullania* on a rock face nearby. The latter was at first taken for *F. ericoides*, but it has a large stylus and appears to be a form of *F. dilatata* with spreading to subsquarrose dorsal lobes.

### Barranco near El Guincho

The south-west part of Tenerife is being rapidly developed and the low-lying barrancos are under increasing threat. We visited one just off the autopista 1 km west-north-west of El Guincho, at 150 m alt. It was a bit squalid, with dumps of rubbish, but the flora was fascinating. Gerard almost immediately located *Goniomitrium seroi* on thin soil on the rock ledges. There were good quantities present, but frustratingly all of it was sterile. *G. seroi* has rhizoidal tubers, and their presence was later confirmed under the microscope. In one place the *Goniomitrium* was associated with *Riccia trabutiana*. Another interesting find was *Crossidium davidai*, which mimics and is easily passed over as tiny *Tortula atrovirens*. Under the little roadbridge across the barranco, there was some damp soil with nice rosettes of *Riccia crystallina*. On the same damp soil there was *Tortula bogosica*, associated with a tiny and as yet unidentified pottiaceous moss with distinctive lingulate leaves.

This was not Roy's lucky day. Having already had to re-think the programme because of the *manifestación* in the National Park, he ended the day with a double puncture caused by a broken road edge on the way back from the barranco. Fortunately it was not far from the airport, and the necessary repairs were eventually accomplished.

## MONDAY 19 FEBRUARY

### El Pijaral

On this day we made the first of two trips to the Anaga peninsula. After two days in xerophytic habitats, the vegetation in this north-east corner of Tenerife was strikingly different. The peninsula is rugged and the mountains rise to an irregular crest with peaks exceeding 900 m. Cloud forming on the north-west side of the peninsula swirls over the summit ridges. The tops of the hills therefore are moist and humid, and support some fine areas of laurel forest (*laurisilva*). The *laurisilva* is evergreen woodland formed by several superficially similar trees from many genera in various plant families, including species of *Ilex*, *Prunus*, *Heberdenia*, *Laurus*, *Persea*, *Ocotea* and *Picconia*. *Viburnum tinus* subsp. *rigidum* is also widespread. At the upper edges of the forest, and especially on the ridges, tree heather becomes prominent, often accompanied by *Myrica faya*.

Anaga is a long drive from Los Christianos, but the journey is speeded by the autopista. Our route was via San Andres to El Bailadero. Tom's car load, arriving with time to spare, stopped at 450 m on the way up to El Bailadero and found *Exormothea pustulosa*, *Mannia androgyna* and *Campylopus pilifer* near the roadside.

The main excursion was to El Pijaral, a little to the north-east of El Bailadero. There is a path around the north-west side of the hill, through wet laurel forest at about 760 m. The entry point on the summit ridge leads through mixed woodland with *Erica scoparia* subsp. *platycodon*. We were immediately able to appreciate many of the characteristic epiphytic bryophytes, some of them in pendent masses; *Neckera intermedia* and *Porella canariensis* were abundant, and other species included *N. cephalonica*, *Leptodon longisetus*, *Leucodon canariensis* and *Frullania teneriffae*. In places there were masses of *Plagiochila bifaria* and a second *Plagiochila* resembling *P. spinulosa* but recently identified by David Rycroft and his collaborators as *P. stricta*. There were large *Sonchus* species (*S. acaulis* and *S. congestus*) along the way. As we moved into more sheltered parts of the forest, the canopy became more closed. The pathside banks supported numerous species: *Atrichum angustatum*, *Fissidens serrulatus*, *F. curvatus* (*F. algarvicus*), *Eurhynchium meridionale*, *Rhynchostegiella trichophylla*, *Andoa berthelotiana*, *Telaranea nematodes*, *Jungermannia hyalina*, *Lophocolea fragrans* and *Lejeunea eckloniana*. On tree boles there were some familiar Atlantic liverworts, including *Plagiochila punctata* and *P. exigua*, and also the moss *Dicranum scottianum*. A wet bank by the path had both *Tetrastichium fontanum* and *T. virens* growing in close proximity. A gully with a small stream was wet enough for *Jubula hutchinsiae*, and also had *Heteroscyphus denticulatus*. The tiny *Aphanolejeunea sintenisii* grew here as an epiphyte on other bryophytes (including *Thamnobryum* and *Porella*) and on fronds of Killarney fern (*Trichomanes speciosum*).

Further along we passed a steep crag with sheets of *Radula jonesii*. It also supported *Myurium hochstetteri* and small amounts of *Marchesinia mackaii* and *Acanthocoleus aberrans*. More familiar to most of us, but very rare on Tenerife, was *Racomitrium aquaticum*. Gerard was able to demonstrate *Plagiochila virginica* (*P. dubia*) on tree roots nearby. Eventually the path climbed back over the summit ridge through tall *Erica*, with *Lepidozia cupressina* in the ground flora. The very humid conditions on the ridge were demonstrated by the presence of epiphyllous liverworts. The commonest of these were *Drepanolejeunea hamatifolia* and *Microlejeunea ulicina*, but there were several others, including *Colura calyptrifolia*, *Cololejeunea minutissima* and *Aphanolejeunea microscopica*.

## Chinobre

We moved from El Pijaral further along the peninsula to the recreation area 'La Ensillada' west of Chinobre. Ana directed us to a path through *Erica scoparia* woodland (at 810 m) where she had previously seen several *Riccias*. The visit was intended to be short one, but the path held our attention for over an hour. The *Riccias* were found, and included *R. nigrella*. *Phaeoceros bulbiculosus* was plentiful. Among the mosses were *Anomobryum julaceum*, *Philonotis rigida* with capsules, and *Bryoerythrophyllum inaequalifolium* with abundant axillary gemmae. Gerard found a few stems of *Chenia leptophylla*, and this prompted a close and prolonged scrutiny of the bare soil. Eventually we found further good material close to our starting point!

## Mont. Paso: Barranco de la Iglesia

In the late afternoon we had time for a short visit to the upper parts of the Barranco de la Iglesia at about 850 m. This is an area of little-visited laurel forest on the steep slopes of Mont. Paso. Gerard and Tom disappeared quickly into the forest and eventually found a gully at the base of a large crag. The vegetation was dense and progress difficult. Additional species to those seen at El Pijaral included *Homalia lusitanica* on a boulder, *Asterella africana* growing with *Jubula* in a wet crevice in the gully, and *Anthoceros caucasicus* at the base of the crag. Filmy fern (*Hymenophyllum tunbrigense*) was present. A very interesting find on a moist lightly shaded rock near the base of the crag was *Rhamphidium purpuratum*, growing with *Epipterygium tozeri*. Higher up the gully there was some very robust *Plagiochila exigua* on rock, and *Ulota calvescens* on a twig. Meanwhile David found further material of *Plagiochila stricta*.

## TUESDAY 20 FEBRUARY

### Montaña de la Hoya

The fourth day of the meeting took us to the opposite side of Tenerife, in the vicinity of Santiago del Teide. We visited two very different habitats. The first locality was Montaña de la Hoya, a little to the south of Las Manchas, at an altitude of 1080-1100 m. We investigated the open rocky north-west-facing slope of the montaña, which was covered with a fine growth of the shrubby *Euphorbia atropurpurea* (in full flower) and *Retama raetam*. The bryophyte flora had a Mediterranean feel. There were large quantities of *Riccia gougetiana* and *R. lamellosa*, partly dried out but partly (in the shade of some of the larger crags) in moist, fresh condition, and then very distinctive. *Riccia nigrella*, *R. crozalsii* and *Gongylanthus ericetorum* were also found. The mosses included *Cheilothea chloropus*, *Tortula cuneifolia*, *Crossidium squamiferum*, *Brachymerium notarisii*, *Bartramia stricta* and *Anacolia webbii*. Gerard found a few stems of *Syntrichia bolanderi* at the edge of a path. By late morning, when we left the site, the sun had coaxed into flower the beautiful crocus-like blooms of *Romulea grandiscapea*.

### Monte del Agua

The central ridge of Tenerife descends to the north-west corner of the island and terminates in the Teno Peninsula. From Montaña de la Hoya we drove north through Santiago del Teide across this ridge to our second venue, Monte del Agua, just west of Erjos del Tanque, at 1000-1050 m. Here there is a very fine tract of laurel forest on north-facing slopes. An earth road, winding but level, leads through the forest. The approach took us past a rock cutting with

*Ptychomitrium nigricans* and *Anacolia webbii*. There was some *Chenia leptophylla* by the track. The laurel forest at this site is much drier than on the Anaga peninsula, and the undergrowth is less dense. Many of the characteristic *laurisilva* epiphytes were present, including *Neckera intermedia*, *N. cephalonica*, *Leptodon longisetus*, *Frullania polysticta* and *Porella canariensis*, and there were additional ones, including *Cryphaea heteromalla*, *Pterogonium gracile* and *Ptychomitrium nigricans*. The banks by the road were interesting, with *Fossombronina angulosa*, *Cephaloziella turneri*, *Rhabdoweisia fugax*, large quantities of *Scapania compacta*, and bewildering forms of *Scleropodium tourettii*. The forest road was also interesting; some of the characteristic species were now becoming very familiar, including *Phaeoceros bulbiculosus*, *Riccia nigrella* and *Bryoerythrophyllum inaequalifolium*. In the interior of the forest the bryophytes, especially the liverworts, were less prominent than at El Pijaral. They included *Sematophyllum substrumulosum* on a stump, *Rhynchostegiella trichophylla* on stones, and *Cololejeunea schaeferi* epiphytic on *Porella* on small rock outcrops. Gerard, Tom and David were keen to find *Plagiochila virginica*, previously recorded from here by Gerard. After prolonged searching they eventually found small amounts of it on the roots of laurel trees in a dry gully. During the search they also found *Lophocolea fragrans*, *Homalia webbiana* and *Isothecium algarvicum*. After such an excellent day the walk back to the cars in the late afternoon, to the sound of laurel pigeons taking flight in the forest, was very gratifying. An added bonus was a clump of the green-flowered orchid *Gennaria diphylla* on the roadside bank.

## WEDNESDAY 21 FEBRUARY

### Aguamansa

The Orotava valley penetrates the northern slopes of Mt Teide and the central ridge of Tenerife. In this area the effects of temperature inversion are particularly dramatic. The moisture-laden prevailing winds form cloud banks on the north- to north-west-facing slopes. They ascend the mountainside but are trapped by an upper layer of hot dry air. The road from Mt Teide into the Orotava valley overlooks the sea of cloud below, and the views are spectacular. The cloud banks also give this part of Tenerife a very different climate from the southern part.

We spent most of the day near Aguamansa, following the path above Los Organos, from the recreation area of 'La Caldera' to Roque de El Topo, at 1200-1400 m. The slopes are steep and are covered with *Pinus canariensis* forest and some *Erica-Myrica* woodland. The forest is much more humid than on the southern slopes of Mt Teide, and some of the trees are draped in pendent lichens. Initially we investigated the tracksides. *Anacolia webbii* occurred in remarkable abundance, and capsules were found. On and by the path we also noted *Riccia crozalsii*, *Cephaloziella turneri*, *Funaria convexa*, *Entosthodon obtusus*, *Syntrichia bolanderi* (with capsules), *Bryum canariense*, *B. donianum* and *Anomobryum julaceum*, as well as some of the common ruderal species seen on previous days. The path soon reaches steep woodland and crags. At one point there is a huge chasm in the rocks, on the floor of which was a stand of the strange rosaceous shrub *Bencomia*. We gradually accumulated a good list of bryophytes: *Mannia androgyna*, *Fissidens curvatus* (*F. algarvicus*), *Syntrichia princeps*, *Tortula ampliretis*, *Anoetangium aestivum*, *Grimmia lisae*, *G. decipiens*, *Hedwigia ciliata*, *Leptodon smihii* (on rock), *Antitrichia californica* and *Isothecium algarvicum*. There was a fine group of *Orchis canariensis* on a forest bank. At one point, in dense mist, we encountered a handrail at the side of the path. It was only when the mist cleared briefly that we realised we had just traversed a precipitous and vertiginous crag! The reward was *Amphidium tortuosum* (*A. curvipes*) in a damp

cleft, and a fine stand of *Antitrichia curtipendula*, which we could compare with the *A. californica* found previously.

### **Roque Acebe**

Our second venue of the day was at Roque Acebe, along the road from La Esperanza to El Portillo. It is at 2000 m, near the upper reaches of the pine forest, and is a known site for *Andreaea heinemannii*, indeed the only known locality for the genus on Tenerife. Roy had refound the *Andreaea* (originally recorded by Per Størmer in the 1950s) on a previous visit, but conditions had been poor and Roy was concerned that only small quantities might be present. In fact, we found it plentifully, at two nearby places on opposite sides of the road. This was a good place for Grimmiaceae, with (among others) *Racomitrium heterostichum*, *Grimmia ovalis*, *G. curviseta*, *G. laevigata*, *G. montana*, *Schistidium flaccidum* and *S. confertum*. *Tortula inermis* was also seen.

From Roque Acebe, we drove a few kilometres westwards for a roadside stop by some overhanging cinder depositions, at 2050 m, just west-north-west of Montaña de la Negrita. In the unusual habitat inside the overhang *Leptobryum pyriforme* and *Funaria hygrometrica* were plentiful, and there was a little *Syntrichia bolanderi* and some quantities of an unidentified concave-leaved *Bryum*.

### **THURSDAY 22 FEBRUARY**

#### **Llano de los Viejos**

For the final excursion of the meeting, we returned to the Anaga peninsula and the laurel forests. We made a brief stop at Llano de los Viejos, at 780-800 m, north-east of Las Mercedes. This is now a recreation area, and the site is therefore disturbed and defaced by litter. Nevertheless there were some interesting bryophytes, including *Chenia leptophylla* (predictably) in the car park, *Homalia webbiana* and *Fissidens taxifolius* subsp. *pallidicaulis*. Both *Lejeunea flava* and *L. canariensis* were found near the bases of laurel trees.

#### **Pista de las Hiedras**

The main venue for the day was the laurel forest along Pista de las Hiedras to the west of Mont. Taborno. This *pista* is an earth road at 870 m. Initially, at the western end of the pista, the laurel forest was relatively dry, and we concentrated on the road edges and banks. We found many of the ruderal species that we had seen on previous days, but also saw *Corsinia coriandrina* for the first time during the meeting; *Riccia crozalsii* was also present. Further along we found a superb colony of *Asterella africana* in a damp hollow. There were some attractive flowering plants too, including *Geranium canariense* and purple cinerarias belonging to the genus *Pericallis*.

As we progressed along the *pista* the laurel forest became more varied, and there were some wet gullies. In these gullies were *Heteroscyphus denticulatus*, *Plagiochila stricta*, *Jubula hutchinsiae*, *Fissidens coacervatus*, *Tetrastichium fontanum*, *Thamnobryum maderense*, *Rhynchostegiella macilentia*, and a few clumps of Killarney fern (*Trichomanes speciosum*). Epiphytes in the laurel forest included *Plagiochila bifaria*, *P. virginica* (on the roots and bases of the trees), *Frullania microphylla*, *Radula carringtonii*, *Marchesinia mackaii* (also found covering an old concrete cistern) and *Cololejeunea schaeferi*. The upper parts of the gullies led

to the summit ridge and some wet *Erica-Myrica* forest. In spite of the exotic trees, these woods had something of the feel of a western British oakwood, with clumps of *Luzula* (here *L. canariensis*), masses of *Hypnum* (much of it *H. uncinulatum*), *Dicranum scottianum*, *Isoetecium myosuroides*, *Scapania gracilis* and *Polytrichum formosum*. *Ulotia calvescens* was found in small quantity on *Erica*.

## POSTSCRIPT

In all respects the meeting was a great success. At the time of writing not all of our specimens have been identified and some taxonomic problems remain. We were able to add new localities for several rare bryophytes on Tenerife (e.g. *Rhamphidium purpuratum*, *Crossidium davidai* and *Tortula bogosica*). We are particularly grateful to Roy for the time and trouble he took in organising the meeting and obtaining the necessary permissions. He managed the logistics of the meeting impeccably. We are also very grateful to Ana Losada-Lima for her support and assistance, and for joining us on several excursions.

TOM BLOCKEEL

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## SUMMER FIELD MEETING 2001, FIRST WEEK, LANARKSHIRE,

This meeting was originally planned as an exploration of Renfrewshire (VC 76) and Lanarkshire (VC 77), both relatively under-recorded areas. Due to the uncertainties caused by the foot-and-mouth outbreak, the meeting was seriously threatened, but with the reduction in restrictions by mid-summer, and the fact that the Skye meeting was still on, it was decided to compromise by having a shortened meeting based in Lanark. The location serves as useful stopping-off point for travellers from the south, and provides a good introduction to the Scottish flora.

The setting proved to be very convenient for exploring some of the rich woodlands associated with the Clyde Valley and also the upland landscape to the south. Three BBS members (Richard Fisk, Mark Pool and Sam Bosanquet) travelled up for the meeting and stayed at the base hotel together with myself; two others (David Rycroft and David Long) joined us for some of the days. All localities visited were in VC 77.

## WEDNESDAY 1 AUGUST

### Lower Nethan Gorge (NS8246)

The first session was gentle, as most of the participants had had long drives that morning; the four 'residents' were joined by David Rycroft. The wooded valley is a National Nature Reserve (NNR) owned by the Scottish Wildlife Trust, and is situated to the north-west of Lanark. The valley sides are steep, with a number of rock outcrops, and the riverbed is rocky. A good range of woodland species was found, including *Neckera complanata*, *Homalia trichomanoides* and *Isoetecium alopecuroides*, with *Amblystegium tenax* by the water's edge. Some of the rock exposures were dry and provided little of interest (although *Seligeria*

*recurvata* was noteworthy). One of the more interesting epiphytic finds was *Orthotrichum stramineum*\* by Mark. Access further up the riverbed was impeded by recent landslips, so we cut up to the path along the valley top; near here Sam found *Riccardia palmata* on a rotting log in deep shade. A microscope session after supper allowed comparison of *Fissidens viridulus*\* and *F. pusillus*, collected from soil and inundated rocks respectively.

The short visit (afternoon only) resulted in nearly 100 records, and had more time been available to explore the upper valley the total would have undoubtedly increased. All in all though, it was an enjoyable start to the meeting.

## THURSDAY 2 AUGUST

### Culter Waterhead (NT0327 – NT0425)

The hills around Culter Water rise to 600 m and provide an ideal introduction to Scottish bryology. Under a threatening sky, David Long joined the four ‘residents’ and gave expert guidance throughout the day. After a typical BBS start examining the roadside and dam walls (*Orthotrichum cupulatum*, *O. anomalum*, *Didymodon rigidulus*, and *Racomitrium elongatum*\* found on roadside gravel by David), we headed to some mud near one of the reservoir’s inflow burns. A mat of *Dicranella rufescens* and *Archidium alternifolium*\* was interspersed with *Fossombronina incurva*, *F. wondraczekii*\*, *Riccia sorocarpa*\*, *Pohlia flexuosa*\*, *Ephemerum serratum* var. *serratum*\* and *Climacium dendroides*.

From the reservoir we climbed Snow Gill with the intention of reaching the blanket bog above in time for lunch. Base-rich flushes with *Philonotis calcarea*, *Drepanocladus revolvens*\*, *D. cossonii*\*, *Dicranum bonjeanii* and *Leiocolea bantriensis*\* provided attractive features. The sides of the burn produced *Scapania subalpina* and lots of *Anomobryum julaceum*, and fine gravels or clays above supported *Diphyscium foliosum*\* and *Entosthodon obtusus*\*. Other finds included *Bryoerythrophyllum ferruginascens*\*, *Hedwigia stellata*\* and, on boulder scree, *Grimmia donniana*. The various *Sphagnum* species included *S. teres* and convincing *S. russowii*, with tattered notches to its stem leaves, but the ‘convincing’ *S. warnstorffii*, growing in a basic flush, later proved to be *S. capillifolium*.

During lunch we discussed the Splachnaceae and Sam promptly found *Tetraplodon mnioides* on a dead hare within five metres of where we were sitting. A relatively rich area of blanket bog, with frequent *Sphagnum magellanicum* and both *Mylia* species, produced several notable finds, including *Hypnum imponens*\* and, more surprisingly, *Dicranodontium denudatum*\*. Further east a small peaty bank supported *Kurzia trichoclados*\*, and nearby David found *Anastrophyllum minutum* and *Riccardia latifrons*.

The burn we selected for our descent lay in a different tetrad and had a few rock outcrops and basic flushes. It produced more remarkable finds for the day. *Bryum weigeli*, with strongly decurrent leaves, was found in a flush, but of most note were rocky outcrops. Records here included fruiting *Arctoa fulvella*\*, *Gymnomitrium obtusum*, *Scapania aequiloba*\*, *Jungermannia paroica*\*, *Lejeunea lamacerina*\*, *Fissidens osmundoides*, *Plagiobryum zieri*\* and *Andreaea alpina*, whilst a low waterfall supported fruiting *Hygrohypnum eugyrium*\*.

The day was enjoyed by all and proved far more rewarding than any of us could have expected. A total of nearly 200 species was recorded, including over 20 new vice-county records!

## FRIDAY 3 AUGUST

### Near Shotts (NS8761)

After the rich pickings of the previous day, the final day commenced with fruitless searches for two rarities. *Buxbaumia aphylla* has been recorded from several pit bings (spoil heaps) near Shotts (east of Glasgow). David Long pointed out likely *Buxbaumia* habitat (the peatier areas on the bing sides where *Calluna* and *Cladonia* species were abundant), but unfortunately the moss appears to have gone from these bings. As compensation, finds included *Blasia pusilla*, *Leiocolea turbinata* and *Calypogeia neesiana*. A good area of raised bog, adjacent to the first bing, was searched for *Sphagnum pulchrum*, recorded some ten years previously by Keith Watson. The area was searched but the species was not refound (some recent severe fires may have taken their toll). However, a good range of typical bog species was seen, including *Calypogeia sphagnicola*\* and *Cladopodiella fluitans*\*.

### Cleghorn Glen (NS8845)

The afternoon was more rewarding. We headed to another valley woodland, Cleghorn Glen NNR, just north of Lanark, where a good range of woodland species were noted, including *Mnium stellare*, *Plagiothecium curvifolium*\*, *Zygodon viridissimus* var. *stirtonii*\*, *Z. rupestris*, *Neckera crispa*\*, *Fissidens crassipes* and *Metzgeria conjugata*\*. The final species list reached 90.

## POSTSCRIPT

We were all agreed that the short excursion had been most enjoyable. Most importantly, a very good range of species had been found, including some 30 new vice-county records! There are still plenty of upland burns and mires and deep, wooded valleys to be explored in the area. Hopefully, future excursions can be arranged in the area, and bryologists travelling north may decide to stop off and sample some of the delights and discover more new records in this attractive part of Scotland.

KEITH WATSON

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## SUMMER FIELD MEETING 2001, SECOND WEEK, THE ISLE OF SKYE

The week in Skye was split into two halves, the first based at the Toravaig Hotel on the Sleat Peninsula and the second at the Taigh Ailean Hotel in Portnalong. A total of 20 members attended the meeting: Frank Bentley (Saturday-Wednesday), John Blackburn, Tom Blockeel (Monday and Thursday), Sam Bosanquet (Saturday-Wednesday), Richard Fisk, Nick Hodgetts (local secretary), Frank Lammiman, Mark Lawley, David Long (Monday and Thursday), Sandra McLean (Saturday-Wednesday), Pete Martin, Sean O'Leary, Roy Perry, Mark Pool, Christine Rieser, Martin Robinson (Wednesday-Friday), Gordon Rothero (Sunday-Monday), Graeme Smith, Phil Stanley and Keith Watson (Saturday-Monday). We were also pleased to welcome Sid Clark, the photographer from the Royal Botanic Garden in

Edinburgh who was accompanying David Long on a trip to photograph bryophytes, and Stephen Varwell and Alex Turner, two members of staff from the Portree office of Scottish Natural Heritage (SNH).

All excursions were in VC 104 (North Ebudes). In the following account, tetrads are indicated in the standard fashion, i.e. labelled A-N, P-Z within each 10-km square, with A being in the SW corner of the square and Z in the NE corner.

## SUNDAY 5 AUGUST

### Mudalach (NG72M, NG72S)

Roy and Phil decided to record on forestry tracks in the extensive afforested area west of Kyleakin while the rest of us went on to Mudalach itself (which is apparently not known by this name to the locals). Once we'd left the forestry track, the initial going was rough, and we had to pick our way over deep tussocks of *Molinia* on land ploughed for tree planting. A path eventually appeared beneath the pylons after a few hundred metres. As it turned out, this difficult route was unnecessary, since a path went round through the trees and would have led us to the same destination. We went back that way! At last we left the conifers and the woodland became more natural, with mainly birchwood in the swampy valley bottom leading to the beach at the head of Loch na Béiste, the rather open and young woodland continuing along the southern side of the loch. The swampy woodland had some interest, with much *Sphagnum* and masses of *Frullania* and *Ulota*, including *U. drummondii*. Heathy and rocky banks supported many typical western woodland species, including *Hylocomium umbratum*, *Ptilium crista-castrensis*, *Lepidozia pearsonii* and *Kurzia trichoclados*. Keith delighted many of us by finding a solitary Bog Orchid (*Hammarbya paludosa*) in a flush in an open area, with Lesser Twayblades (*Listera cordata*) lurking under the heather nearby. *Sphagnum warnstorffii* and *S. molle* also occurred in the flushes. Sam found two colonies of *Leptoscyphus cuneifolius* on birch trees and also recorded *Cololejeunea minutissima*. Many of the more widespread western and Atlantic species were also found, including *Harpalejeunea molleri*, *Harpanthus scutatus* and *Plagiochila killarniensis* (or *P. bifaria* as we must now call it).

By the loch the going became very steep and rather too difficult and dangerous for some of the party, so they stopped to have lunch and then worked their way slowly back, bryologising all the way. *Radula aquilegia* and *Lophocolea fragrans* were found on wet rocks just above high-water mark.

Gordon led the more tenacious forward party further round, reaching as far as the eastern tetrad of Mudalach, and was rewarded with further species, such as *Colura calyptrifolia*, *Harpalejeunea molleri* and *Cololejeunea calcarea*. *Acrobolbus wilsonii*, recorded here previously by Ben Averis, was unfortunately not refound. A colony of *Trichostomum hibernicum* was found a little further up the hillside.

## MONDAY 6 AUGUST

### Ben Aslak (NG71P, NH71U)

A large party met on the road through Glen Arroch near the bealach, and drove to the end of a long forestry track, courtesy of Forest Enterprise, who had lent us the key to the padlocked

gate. The target for the day was the long cliff on the north side of Ben Aslak, known to be rich in Atlantic bryophytes. As soon as we got out of the cars (having spent some minutes turning them round for a quick exit later!) *Tetraplodon mnioides* was spotted on the gravel of the track.

To begin with, we climbed steadily over boggy acid ground typical of Skye, with plenty of *Sphagnum*, *Campylopus atrovirens* and *Pleurozia purpurea*, but little else to detain us. However, Frank and Christine continued to record in this area, adding *Ditrichum heteromallum* and several species of *Sphagnum* and *Scapania* to the day's list.

The first crags encountered were mainly acidic, with *Gymnomitrium obtusum*, *G. crenulatum*, *Douinia ovata*, *Hedwigia stellata*, etc. Further on, contouring round towards the north-facing cliffs, we encountered some distinctly base-rich flushes with *Calliergon sarmentosum*, *Scorpidium scorpioides* and even a little *C. trifarium*.

The crags just east of these flushes were quite strongly base-rich, with *Antitrichia curtipendula* and *Anoetangium aestivum*. The cliffs became richer and richer as we went east, with *Herbertus aduncus* subsp. *hutchinsiae* in huge cushions and lots of *Bazzania tricenata* and *Plagiochila carringtonii*. *Mastigophora woodsii*, *Herbertus stramineus* and *Dicranodontium uncinatum* were also present. Gordon found a number of colonies of *Campylopus setifolius*, and went into monitoring mode, marking and photographing them. A fair amount of *Paraleptodontium recurvifolium* was also found, mainly as scattered shoots among other bryophytes on the ledges. Gordon and Sam found *Trichostomum hibernicum* in flushes.

Further species were added as we progressed along the cliffs, including several montane calcicoles, such as *Ctenidium molluscum* var. *condensatum*, *Plagiothecium denticulatum* var. *obtusifolium* and *Isopterygiopsis muelleriana*. *Ditrichum zonatum*, *Arctoa fulvella* and *Marsupella adusta* were found in high rock crevices. Meanwhile Tom, David and Sid had walked over the top of the hill to reach a section of the cliffs further east, adding *Hypnum hamulosum*, *Orthothecium rufescens*, *Amphidium lapponicum*, *Scapania ornithopodioides* and *Bazzania pearsonii* to the list. The summit ridge was also not without interest, and David recorded *Campylopus gracilis*.

### **Kinloch Lodge (NG71C)**

Some of us stopped at the woods at Kinloch Lodge on the way back to the headquarters hotel to see *Plagiochila atlantica*. The known colony was duly refound and then Gordon found a much more extensive 'new' colony near the path! Several other typical Atlantic woodland species were also seen, but this was really just a flying visit at the end of the day and no systematic recording was done.

## **TUESDAY 7 AUGUST**

### **Soay (NG41)**

The group split on this day, with some opting to visit the Torridonian sandstone island of Soay off the west coast of Skye, and the rest visiting Durness limestone sites in the Strath Suardal area. After the first group (the majority) arrived at Elgol, David immediately found

*Myurium hochstetteri* behind the sheds at the jetty while waiting for the boat. The rest of us visited it later in the afternoon.

We climbed (over another boat, which was being painted) into the *Kaylee Jane*, operated from Soay by Gordon the boatman, and had a pleasant 20-minute trip to the island, with Manx shearwaters skimming the waves nearby along with the odd arctic skua. We disembarked in two groups via a small landing craft.

On arrival we decided to split into two groups, one covering the smaller but higher north-eastern half of the island, the other the slightly larger but lower south-western half. Both groups also recorded to some extent in the narrow central glen connecting the two halves. Here the ground is much more sheltered, with some development of woodland. The only occupied houses on the island are in this central area.

The north-eastern party soon found an excellent bog with *Sphagnum austinii*, *S. fuscum*, *S. subsecundum*\* and *Cladopodiella fluitans*, and continued on to the wooded northern side. This had good oceanic communities, with *Aphanolejeunea microscopica*, *Colura calyptrifolia*, *Drepanolejeunea hamatifolia*, *Harpalejeunea mollerii*, *Plagiochila killarniensis* and *Hylocomium umbratum*. David found *Lophozia obtusa* on a bank, and Sam recorded *Tritomaria exsecta* on rotting wood. Other species here included *Herbertus aduncus* subsp. *hutchinsiae*, *Ptilium crista-castrensis*, *Dicranodontium uncinatum* and *Dicranum scottianum*. Mark Lawley nobly split from the party to record the most remote tetrad on the northern tip of the island and found plenty of interest, including *Anastrophyllum minutum*, *Weissia perssonii* and, on the way there, *Lophozia longidens*\* on a birch.

The second party went through woodland in the central glen, and then on to sandstone ravines on the north coast and back over moorland. They found a similar selection of Atlantic species in the central glen to that found by the north-eastern group. *Cephalozia catenulata* was found twice on peaty banks. More *Sphagnum fuscum* was found in the boggy moorland in the centre of the south-western part, and *S. molle* was also recorded. A single colony of *S. strictum* was located after considerable searching. Although widespread in VC 104, this species is by no means common. Mark Pool found *Riccardia latifrons*.

The large amount of *Harpanthus scutatus*, generally rather a rare species on Skye, seems to be a feature of the island: it was found in abundance on sheltered rocks in a number of places. Just before leaving, Mark Pool found *Ulota hutchinsiae* near the point of embarkation.

### **Strath Suardal (NG62)**

The other group, consisting of John, Richard, Frank and Christine, explored the Durness limestone in the Suardal area near Torrin. Most of the characteristic calcicoles were seen, and *Colura calyptrifolia* was found on rocks in a stream. The party also visited the magnificent colonies of *Campylopus shawii* growing in flushes at Camas Malag near Torrin; one carload of the Soay party also made a detour to see these on the way back to the hotel. Roy and Phil also visited this area, finding *Orthothecium intricatum* on the south-west slopes of Strath Suardal. *Sphagnum skyense* was searched for at its type locality but not refound. The locality has now been visited by a number of bryologists over the years but the plant has not been seen since the type collection in 1987.

## WEDNESDAY 8 AUGUST

### Sligachan area (NG42)

The plan was to have a relatively easy day after the exertions of the last three days. We started in the bogs behind the Sligachan Hotel, but did not reach the best ground. Indeed, the morning was a little disappointing, with little of note except *Cladopodiella fluitans* and *Sphagnum strictum* to be found on the bog, the latter recorded by Roy. *Sphagnum molle* was also collected, and Mark Lawley found *Hedwigia ciliata* var. *ciliata*\* on a rock nearby. Frank found some *Sphagnum pulchrum*, but we missed the principal site for this species. Pipewort (*Eriocaulon aquaticum*) was the main excitement, growing in some of the lochans in the bog. We had an early and leisurely lunch in the sunshine outside the Sligachan Hotel and refound *Glyphomitrium daviesii* where Mark Pool had seen it ten years before. *Campylopus shawii* was also seen growing in flushes near the river, although it was relatively poor material compared with the magnificent colonies at Torrin. Mark Lawley collected *Fossombronina foveolata* from the riverside.

### Allt Grìllan (NG43A, NG43F)

Those of us who were making our way towards Portnalong for the second part of the week stopped near the turn-off to Carbost to survey the Allt Grìllan, a small ravine woodland with some base-rich exposures that SNH had asked us to visit. It is a Site of Special Scientific Interest for its vascular plant communities but was unknown for bryophytes. It turned out to be a superb little ravine with most of the typical Atlantic Lejeuneaceae (including *Drepanolejeunea hamatifolia*, *Harpalejeunea molleri* and *Aphanolejeunea microscopica*), *Cololejeunea calcarea*, *Radula aquilegia*, *Ulota calvescens* (on hazel), *U. drummondii*, and magnificent hanging brackets of *Metzgeria leptoneura*. Three small colonies of *Radula voluta* were seen on damp rocks by the stream, rather miserable-looking material but here growing at the most northerly site yet discovered for this species. More than 120 species were recorded in total.

## THURSDAY 9 AUGUST

### Sgurr a'Mhadaidh Ruaidh (NG45U)

Perhaps the most spectacular day of the meeting was spent right in the middle of the Trotternish Ridge. Sgurr a'Mhadaidh Ruaidh is less well-known than the Storr or the Quiraing but its bryophyte flora is at least as good as either. We had to drive down a long rough track from Lealt to reach the site, past (or through) such obstacles as a flock of sheep being sheared, rocks and deep puddles, but all the cars made it. The whole day was then spent exploring the cliffs and coires above. The loose basalt rock of the area is highly treacherous, and there were times when I feared for the safety of the party as we scrambled up the steep scree and felt it slipping from beneath our feet. Fortunately there were no casualties and we soon found some of the area's characteristic bryophytes, which include many arctic-alpine species growing here at a relatively low altitude. These included *Encalypta alpina*, *E. ciliata*, *E. rhaptocarpa*, *Amphidium lapponicum*, *Myurella julacea*, *Hypnum hamulosum*, *Tortula subulata* var. *graeffii*, *Mnium thomsonii*, *Eremonotus myriocarpus*, *Jungermannia borealis*, *Molendoa warburgii*, *Plagiothecium cavifolium*, *Eurhynchium pulchellum* var. *diversifolium*, *Isopterygiopsis muelleriana*, *Anthelia juratzkana*, *Didymodon icmadophilus*, *Bryoerythrophyllum caledonicum*,

and several independent finds of *Timmia norvegica*. *Anoetangium aestivum* was seen with capsules, rather a rare sight.

Atlantic species were well represented among the rocks, with *Mastigophora woodsii*, *Metzgeria leptoneura*, *Glyphomitrium daviesii*, *Scapania ornithopodioides* and *Dicranodontium uncinatum*. *Jungermannia subelliptica* and *Plagiochila britannica* were also found. Perhaps the 'star find' of the day was *Bryum arcticum*\*, found by Tom in a rock crevice high on the cliffs, the first British record of this rare species since the 1960s. A number of specimens collected from the site remain to be determined. Unknown to us, *Hamatocaulis vernicosus* was lurking in the wet ground near Loch Cuithir, waiting to be found by Sandy Payne later in the year!

The vascular plants were good too. There was more Alpine Saxifrage (*Saxifraga nivalis*) here than most of us had ever seen, and Moonwort (*Botrychium lunaria*) on the grassy slopes near the track was another bonus. Sean found a small stand of Alpine Woodsia (*Woodsia alpina*), which caused quite a stir.

Sam, who had left us by this time, had visited the Storr earlier in the week and come up with two sites for *Scapania gymnostomophila*, as well as *S. aequiloba* and *Eremonotus myriocarpus*.

## FRIDAY 10 AUGUST

### Rubha Hunish (NG47C, NG47D)

Our final day, with a considerably reduced number of participants, was spent at the extreme northern tip of Skye, where we hoped to see some more *Myurium*. It turned out to be a spectacular day from a scenic point of view. The weather was lovely, and the views from the top of the cliffs and from the extreme tip of the peninsula over to the Outer Isles, with gannets dive-bombing in the foreground, were truly magical. As for the bryophytes, we found a number of things on the walk in. A bog in the narrow glen below Meall Tuath had a variety of *Sphagnum* species and *Cephalozia pleniceps*, and the open moorland contained *Splachnum ampullaceum* with very strongly toothed leaves (one member was convinced he had discovered a new species!), the distinctive *Campylopus atrovirens* var. *falcatus* and much *Glyphomitrium daviesii* on the rocks. *Grimmia funalis* also grew on rocks in the area. Earlier in the week David and Sid had visited the site and found *Hedwigia ciliata* var. *ciliata*\* on exposed rocks at the top of the cliffs but this was not refund.

There was some nice vegetated boulder scree on one of the cliffs above the peninsula, with much *Colura calyptrifolia* on the heather stems. An extensive mass of *Myurium hochstetteri* was found growing in a gully in the cliff above the scree, and there were smaller colonies scattered elsewhere. The peninsula itself was rather dull, being too windblown by salt-laden gusts to have much in the way of bryophytes. There was some species-poor bog in the middle of the peninsula, where some of us puzzled over a thalloid liverwort for some time before concluding that it was nothing more than atypical *Pellia epiphylla*. Indeed, many of the bryophytes here looked odd, presumably because of the saline influence. 'Interesting'-looking *Sphagna* all turned out to be *S. subnitens*, *S. flexuosum* or *S. inundatum*, and scruffy pleurocarps were *Campylium stellatum* var. *protensum*, *Warnstorfia fluitans* and *W. exannulata*. Much of the *Campylopus* in the area was *C. brevipilus*. The rocks above the shore

had little except for *Ulota phyllantha* and *Schistidium maritimum*, but small colonies of *Weissia perssonii* and *Tortella flavovirens* were also found.

*Archidium alternifolium* was seen on bare ground by the path back to the cars.

## OTHER LOCALITIES

In addition to the arranged sites, most members managed to visit the well-known *Acrobolbus wilsonii* site near Broadford at one time or other during the week, with Roy finding a new stand of *Acrobolbus* there. A number of other sites not on the official programme were also visited, notably by David and Sid (who were after photographs), Roy and Phil (who were based in Portree for the week and so often went their own way), and Frank and Christine (who did some useful 'extracurricular' recording in Tokavaig Wood and Glen Brittle). David had more *Sphagnum subsecundum* from the Black Lochs south-east of Skulamus, and several members also visited this site independently to see *S. pulchrum*. Perhaps the most astonishing record of the week was *Dicranum subporodictyon*\*, found by David on wet sloping rocks at Eas a'Bhradain (the Robbers' Falls). This is a well-known tourist spot and bryologists must have passed it by many times without being aware of the *Dicranum*!

The week was most enjoyable - even the local secretary started to enjoy it after about Wednesday! - and the weather was remarkable for Skye in August, with a significant amount of rain falling only on Monday. The clouds gathered again the day after the meeting closed and the following week was dreadful! Many useful records were made, which will contribute significantly towards an eventual tetrad Flora of Skye, and several taxa new to the vice-county were found. There are still a number of specimens that have so far defied identification, some of which may turn out to be interesting.

## ACKNOWLEDGEMENTS

I would particularly like to thank Stephen Varwell and Alex Turner (the local SNH officers at the Portree office) for all their help in arranging access permission and providing much useful information, John Birks for providing information on Soay, Duncan Geddes for granting permission to visit the island, and Gordon the boatman for taking us there. Thanks are also due to the proprietors and staff of the Toravaig Hotel and the Taigh Ailean Hotel for their excellent service and hospitality.

NICK HODGETTS

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## AGM AND SYMPOSIUM MEETING 2001, CARDIFF

JAN KUČERA (UNIVERSITY OF SOUTH BOHEMIA, CZECH REPUBLIC):  
*TAXONOMIC PROBLEMS AND FINDINGS IN THE EUROPEAN SPECIES OF  
DIDYMODON, PARTICULARLY THE D. RIGIDULUS GROUP*

The genus *Didymodon* in its present concept (Zander, 1993) is a moderately large genus (ca 120 species) within the largest moss family (the Pottiaceae). The delimitation of the genus has

been subject to considerable recent changes, following the revolutionary concepts of Saito (1975), in which emphasis was for the first time given to gametophyte characters.

The European members of the informal *Didymodon rigidulus* group comprise the taxa described as *D. rigidulus* Hedw., *Grimmia andreaeoides* Limpr. (= *D. rigidulus* subsp. *andreaeoides* (Limpr.) Wijk & Margad.), *D. glaucus* Ryan, *Eucladium verbanum* W.E. Nicholson & Dixon (= *D. verbanus* (W.E. Nicholson & Dixon) Loeske), *Tortula acuta* Brid. (= *Didymodon acutus* (Brid.) K. Saito), *D. validus* Limpr., *Barbula icmadophila* Schimp. ex Müll. Hal., and *B. mamillosa* Crundw. These taxa were subjected to a complex taxonomic treatment in the course of my PhD studies. The taxonomic methods involved herbarium study, statistical evaluation of quantitative characters, and isozyme analyses.

From the eight intensively studied taxa in the *D. rigidulus* group, three were discovered not to have a close relationship with *D. rigidulus*. They are *D. glaucus*, *D. verbanus* and *Grimmia andreaeoides*; the latter was found to be conspecific with the North American *D. subandreaeoides* (Kindb.) R.H. Zander. Both *D. glaucus* and *D. subandreaeoides* merit specific status. Their differences from *D. rigidulus* are well illustrated by a number of qualitative and quantitative characters, including species-specific zymogram patterns in some isozyme systems. *D. verbanus* is also specifically distinct from *D. rigidulus*, but its relationship to *D. glaucus* has not been fully elucidated. Both taxa are to a great extent distinct in some qualitative and quantitative characters, but they could merely be geographically segregated male and female populations of the same taxon. On the other hand, several other explanations are possible, and so it seems appropriate to distinguish *D. verbanus* as a species, until more information is available.

*D. mamillosus* was found to fall within the range of variation of *D. rigidulus* in all of its characters. *D. validus* is the taxon with the closest relationship to *D. rigidulus*, based on the shared qualitative characters (occasional presence of axillary gemmae and identical leaf costa anatomy), and forms transitional to *D. rigidulus* occur in the centre of its distribution. Plants which are not fully developed are also extremely difficult to distinguish from *D. acutus*.

*D. acutus* is regarded as specifically distinct from *D. rigidulus*. Its distribution is suspected not to extend substantially beyond the European subcontinent, and difficulties in distinguishing this taxon from *D. rigidulus* in America seem to be caused by the occurrence of other minor taxa of the *D. rigidulus* group, similar but not identical to *D. acutus*.

*D. icmadophilus* is also undoubtedly specifically distinct from *D. rigidulus*, as shown by the presence of species-specific patterns in several isozyme systems. Mixed stands of the two species have also been found. There are obvious sporophyte differences but fertile material of *D. icmadophilus* has been found very rarely. No stable distinguishing gametophyte characters could be found during my studies. *Barbula abbreviatifolia* was shown to be a synonym of *D. icmadophilus*.

Studies indicated the possible existence of another taxon, extremely closely related to *D. rigidulus*, in the western Mediterranean area, but the variability of this taxon has to be studied with respect to other Holarctic taxa close to *D. cordatus* Jur. and *D. rigidulus*.

Despite my studies, several taxonomic problems remain in both the *D. rigidulus* group and several other informal groups. Molecular studies are needed to clarify the status of *D. validus*

with respect to *D. rigidulus* and *D. acutus*. The same applies to the distinction between *D. icmadophilus* and *D. acutus*; between *D. verbanus* and *D. glaucus*; between *D. insulanus* (De Not.) M.O. Hill, *D. bistratosus* Hébr. & R.B. Pierrôt, and *D. vinealis* (Brid.) R.H. Zander; and between *D. maximus* (Syed & Crundw.) M.O. Hill and *D. giganteus* (Funck) Jur. One or two additional taxa may still remain to be described within the *D. rigidulus* group in the Mediterranean area, particularly with respect to *D. cordatus*. Several little-known taxa have to be newly evaluated, e.g. *D. incrassatus* (Lindb.) Broth., *D. lamyanus* (Schimp.) Thér., and *D. tomaculosus* (Blockeel) M.F.V. Corley. The types have to be located for several 'forgotten' taxa, such as *D. barbulae* Wibel ex Roem., *D. barbuloideus* Lib. ex Marchal, *D. camusii* Husn., *D. soaresii* Luisier, and *D. tenellus* R. Hedw. ex Brid.; it is anticipated that they will be synonymised with other European taxa.

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## JONATHAN SLEATH (HEREFORD): *BBS FIELD EXCURSION TO TENERIFE, 2001*

A dozen or so bryologists met on the island of Tenerife in February 2001 for a week in the field, organised ably by Roy and Hilary Perry. The meeting was most successful; a great variety of fascinating habitats was visited and we saw many interesting plants, including a good number of Macaronesian endemics. A slide presentation was given to illustrate some of the species seen and localities visited. An account of the meeting has been written for the *Bulletin* by Tom Blockeel (see pp 3-11 of this issue).

## DR DAVID S. RYCROFT (UNIVERSITY OF GLASGOW): *PLAGIOCHILA IN EUROPE (AND BEYOND)*

This paper reports progress in the three years since the 1998 BBS Loughborough meeting (Rycroft, 1999). It looks at aspects of *Plagiochila* in Britain, Europe and Macaronesia, but, as the title implies, it is also necessary to take account of the situation further afield. The topics covered include evidence relating to the presence in Macaronesia of *P. bifaria* (Sw.) Lindenb., *P. dubia* Lindenb. & Gottsche and *P. spinulosa* (Dicks.) Dumort., to the synonymy of *P. killarniensis* Pearson and *P. bifaria*, and to the systematic position of *P. atlantica* F. Rose. Much of the work has involved others (who are cited along the way) and I wish to acknowledge particularly close collaboration with Jochen Heinrichs (Göttingen), much facilitated by the tremendous benefits of electronic mail.

## Madeira

A *Plagiochila* from Madeira mentioned at the 1998 Loughborough meeting (Drehwald 960277, initially identified as *P. killarniensis*) was found in two locations during a holiday in 1999, and has been determined (Rycroft *et al.*, 2001) as the Neotropical *P. retrorsa* Gottsche, along with material from Costa Rica that had been the subject of a chemical investigation (Anton *et al.*, 1997). The discovery that the Southern Appalachian endemic *P. sharpii* H.L. Blomq.

(Blomquist, 1940) is synonymous extends the Central American and Macaronesian distribution.

A different Madeiran *Plagiochila* is likely to be mistaken for *P. spinulosa*, but has features (including more teeth, a smooth cuticle and a chemical profile with a large amount of 4-hydroxy-3'-methoxybiphenyl) that distinguish it. So far, no existing name has been found. This taxon may be found readily on the northern side of Madeira; it occurs less frequently than *P. bifaria* but apparently much more frequently than *P. retrorsa*.

### Tenerife

During the BBS meeting organised by Roy Perry on Tenerife in February 2001, five *Plagiochila* taxa were observed, of which two were of particular interest. First, Gerard Dirkse demonstrated a taxon that had been determined as *P. dubia*. This taxon, from the Neotropics, was treated recently by Heinrichs & Gradstein (2000) and, following further work, has been synonymised with *P. patula* (Sw.) Lindenb. (Heinrichs *et al.*, in press-a). The Neotropical taxon has leaf margins that are long-decurrent ventrally, whereas those of the taxon from Tenerife (and Madeira) are short-decurrent. We now find that the Macaronesian taxon agrees with the type of the North American *P. virginica* A. Evans; analysis of internal transcribed spacer (ITS) sequence variation of nuclear ribosomal (nr) DNA supports assignment to sect. *Contiguae* Carl (Heinrichs *et al.*, in press-a).

The second *Plagiochila* has been regarded as *P. spinulosa*, but it has characteristics that distinguish it from that taxon as it is known in the British Isles: the odour of the crushed leaves is more spicy, the leaf insertion is more vertical, and the leaf cuticle is rougher. In addition, the shady, tending to dank, habitat where it was to be found, associated with species such as *Trichomanes speciosum* Willd. and *Heteroscyphus denticulatus* (Mitt.) Schiffn., was atypical of the haunts of *P. spinulosa* in the British Isles. The monoterpenes responsible for the odour are principally ocimenes (mainly alloocimene and neoalloocimene), compounds named after *Ocimum basilicum* L. (sweet basil). In contrast, the principal monoterpene in *P. spinulosa* is  $\beta$ -phellandrene (Rycroft *et al.*, 1999a). Ocimenes have not been reported previously from *Plagiochila*, but we have observed them in extracts of *P. stricta* Lindenb. from Costa Rica and Ecuador. The chemical profiles of these extracts were also similar to those from the Tenerife taxon with respect to the other components (including 9,10-dihydrophenanthrenes). Morphological comparison confirmed that the Tenerife taxon is *P. stricta*. Preliminary phylogenetic analysis of ITS sequence variation of nrDNA shows that examples of *P. stricta* from the Neotropics and Tenerife are closer to each other than they are to *P. spinulosa* (Rycroft *et al.*, in preparation).

In other systems, such as those of *Mentha* species, it is generally thought that a single enzyme is responsible for converting the precursor molecule (geranyl pyrophosphate) to a monoterpene product. If this scheme also applies to liverwort systems, then observation of a different monoterpene in *P. stricta* compared to *P. spinulosa* suggests the presence of a different enzyme, rather than switching off of part of a pathway so that one product builds up at the expense of another that would normally be formed further down the pathway.

### Azores

At the time we were finishing work on *P. retrorsa*, we heard from Rosalina Gabriel of a *Plagiochila* that had been collected by Dias on Pico in 1992 and noticed by Sjögren in the

herbarium AZU in 1999. Although the chemical profile was similar to that of *P. retrorsa*, the leaf cuticle was rough, and the plant matched the types of *P. papillifolia* Steph., *P. deciduifolia* Steph. and *P. solmsii* Steph., all collected by Herzog at Comarapa, Bolivia, in 1911; a further synonym is *P. verruculosa* R.M. Schust. (Heinrichs *et al.*, in press-b). *P. papillifolia* can therefore be added to the Macaronesian flora.

Recently, the Azorean endemic *P. allorgei* Herzog & Perss. was found to be synonymous with the Neotropical *P. longispina* Lindenb. & Gottsche (Heinrichs *et al.*, 2000a). It has been established (Heinrichs *et al.*, 2000c) that the blue colour of the stem tips of this species (at least in the Neotropics) is caused by the presence of oil bodies that contain 1,4-dimethylazulene, the blue compound that also occurs in the oil bodies of *Calypogeia azurea* Stotler & Crotz.

### British Isles (and Europe)

Evidence that *P. norvegica* H.H. Blom & Holten and *P. porelloides* (Torrey ex Nees) Lindenb. are very close genetically has been provided by Cronberg (2000), who observed no difference in isozyme banding patterns between the two taxa; in contrast, *P. asplenoides* (L. emend. Taylor) Dumort. showed several differences. *P. norvegica* should be placed in sect. *Plagiochila*.

The plagiochilines (T and U) that we reported (Rycroft *et al.*, 1999b) from Scottish material of *P. carringtonii* (Balfour) Grolle suggested a systematic position close to sect. *Plagiochila*. We have now observed the same two plagiochilines in extracts of subsp. *lobuchensis* (leg. D.G. Long) from Sikkim and Nepal; the close relationship of the two taxa is supported.

Three years ago there was no chemical evidence to support the synonymy of *P. killarniensis* and *P. bifaria* (Heinrichs *et al.*, 1998). Now, however, there is: a specimen from Ecuador (collected in 2001, Holz EC-01-416, GOET) that is close morphologically (*teste* Heinrichs) to the type of *P. bifaria* from Jamaica has a very similar chemical profile to that of a specimen (Rycroft 00051) from the type locality of *P. killarniensis*, above the Torc Cascade. The methoxyl region of the proton NMR spectra illustrates vividly that the ratios of three of the characteristic compounds (methyl everminate, killarniensolide and methyl 6-methoxy-2-methyl-3,4-methylenedioxybenzoate) in the two extracts are extremely similar to each other and to those published (Rycroft *et al.*, 1999a).

In 1975, Eustace Jones and Francis Rose presented an exhibit entitled 'The mystery of *Plagiochila ambagiosa* solved' at the BBS Conversazione in Reading; a long-standing taxonomic problem had indeed been solved, but the systematic mystery remained. Our chemical studies of *P. atlantica* showed that the chemical profile was dominated by plagiochiline C, and that a new bicyclogermacrenol derivative, that we named 'atlanticol', was present as a minor constituent (Rycroft & Cole, 1998). In connection with other work, we examined the extract of a specimen of *P. aerea* Taylor from Costa Rica and observed an extremely similar chemical profile; not only was plagiochiline C dominant but atlanticol, the compound hitherto unique to *P. atlantica*, was also present. *P. aerea*, the type species of *Plagiochila* sect. *Bursatae* Carl, is one of the few members of the Plagiochilaceae that are characterised by the presence of leaf surface waxes (Heinrichs *et al.*, 2000b). The obvious investigation was undertaken, and waxes were duly observed on leaves of *P. atlantica* using scanning electron microscopy (Heinrichs & Rycroft, 2001). Our results indicate that *P. atlantica* has close relatives in sect. *Bursatae* of the Neotropics.

## Conclusion

Five taxa (*P. papillifolia*, *P. retrorsa*, *P. stricta*, *P. virginica*, and the Madeiran indet.) have been added to the recorded *Plagiochila* flora of Macaronesia since 1999, and one, *P. dubia*, has been deleted. The position with respect to *P. spinulosa* requires further investigation. There are now several species linking the *Plagiochila* floras of the Neotropics and Europe (including Macaronesia).

The recent check-list of hepatics for Europe and Macaronesia (Grolle & Long, 2000) includes 14 *Plagiochila* species in seven sections, four being those of Carl (1931). Ten of these species, in five sections, occur in the British Isles. Now, only one year on, the species tally is 16. Chemically, there is a division between those that contain 2,3-secoaromadendrane sesquiterpenoids and those that produce aromatic (in the chemical sense, i.e. benzenoid) compounds. The chemical division accommodates the morphologically-derived sections: sect. *Plagiochila* (*P. asplenoides*, *P. britannica*, *P. porelloides*; *P. arctica* and *P. norvegica* are included here but have not been studied chemically), sect. *Carringtoniae* Inoue (*P. carringtonii*), sect. *Bursatae* (*P. atlantica*), and sect. *Contiguae* (*P. virginica*) have 2,3-secoaromadendranes; sect. *Arrectae* Carl (*P. bifaria*, *P. punctata*, *P. retrorsa*, *P. spinulosa*, *P. stricta*), sect. *Bidentes* Carl (*P. exigua* (Taylor) Taylor and, tentatively, *P. papillifolia*), and sect. *Glaucescetes* (*P. longispina*) have aromatic compounds. Analysis of ITS sequence variation in nrDNA is proving to be a useful tool in understanding these relationships.

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#### **BRIAN O'SHEA (LONDON): SEMATOPHYLLACEAE: A TROPICAL MOSS FAMILY WITH SPECIES IN BRITAIN**

The Sematophyllaceae contain three British species (one discovered only recently), all of which are treated in the British Isles as belonging to the genus *Sematophyllum*. This paper focuses on the significance of the two species known since bryological research started in the British Isles (*S. demissum* and *S. micans*), and where they fit within the family.

Although the Sematophyllaceae are predominantly found in the tropics, where they can be very common, there are a number of essentially temperate species, which on the whole - as with the British plants - are rather rare. It is a family that poses a lot of taxonomic problems, particularly in the area of genus and family delimitations, and the relation of the genera in Sematophyllaceae *s.l.* with the rest of the Hypnales. Molecular studies indicate that diversification in the Hypnales occurred comparatively rapidly, probably associated with the spread of trees in the early Tertiary; because of the speed of change, there is very little morphological or molecular evidence indicating how taxa are related. In addition, the majority of the extant species are probably very recent and actively evolving, so there has been little time for distinctive characters to appear and be differentiated.

The level of diversity in mosses measured by the number of described species is significantly skewed in the tropics, where many species were described at a time when the tropics were seen as an area of boundless fecundity and diversity, and almost every new collection was described as a new species. Taxonomic work in the tropics has been constantly hindered by

the sheer volume of work in examining hundreds of type specimens to find the few that are good species. Ireland (1992) boldly reduced the Latin American *Isopterygium* species from 92 to eight in his revision of the genus, and suggested there might be further reductions to come. Similar reduction might occur when the 64 African species of *Sematophyllum* are revised; 59 of them are endemic, and 40 occur in only one country, many of them known from only one collection. O'Shea (1997) estimated that the number of moss taxa recognised in sub-Saharan Africa might reduce by 57%.

*S. micans* has been seen as a bit of an oddment for some time. In America it has traditionally been placed in *Hygrohypnum* because of the leaf shape, semi-aquatic habitat and somewhat inflated leaf cells, whereas in Europe it has been put in *Sematophyllum* because of the inflated, coloured alar cells. In fact it has a poor resemblance to either genus, as it differs from *Hygrohypnum* in its lack of a central strand, decurrent leaves, short-cylindric capsules with round-pored stomata (*Hygrohypnum* has oval-pored stomata) and short-rostrate opercula, and from *Sematophyllum* in its atypical alar cells, decurrent leaves and quite different sporophyte. Buck (1997) created a new genus for it: *Schofieldiella*, which he placed in the Hylocomiaceae. Although it doesn't look like a *Hylocomium*, Buck listed the following similarities: relatively strongly toothed, decurrent branch leaves, relatively strong double costa, short-cylindric capsules, and round-pored stomata. He aligned it to the genus *Leptocladiella* in the Hylocomiaceae, which he thought showed striking similarities, including the fact that it has species as small as *S. micans*, although *S. micans* lacks the sympodial growth form. Tan & Jia (1999) took a different approach and opted for the genus *Hageniella* in the Sematophyllaceae. They maintained that the differences from more typical sematophylloid plants is within a permissible range; the only problem is the decurrent leaves, but they point out that these are only slightly more decurrent than the type species of *Hageniella*. The conclusion from this is not entirely clear. It may be that we have found the right genus, but there may be more debate about whether the genus is in the correct family. *S. micans* remains an interesting but puzzling plant.

*S. demissum* also presents taxonomic difficulties. H.N. Dixon, apart from being the author of three editions of the *Student's Handbook of British Mosses* and being the first BBS President in 1923, was also one of the most prolific authors of new species this century. Although he never went to the tropics, from the first few years of the 20<sup>th</sup> century he took an interest in what were called 'exotic' mosses. I don't think anyone has calculated how many species he described before his death in 1944, but it was well over a thousand, and they were from all over the world. One of his interests was the Sematophyllaceae, and he spent some time looking at a group in *Sematophyllum* called the '*caespitosum* group'. Species in this group are most easily characterised by their leaf shape and the very short cells towards the leaf apex. Dixon published his findings in 1920, and made 58 species synonyms of *S. caespitosum* (now known as *S. subpinnatum*) on the basis that it was a very plastic taxon that grew in a wide variety of habitats and the variation was environmentally determined. In many ways this was quite revolutionary, as the tradition had been that anything slightly different was described as a new species (and Dixon himself followed this practice in much of his work). The interest in this for us is that *S. demissum* (and *S. adnatum*, recently found naturalised in Italy, via imported American trees) share similarities with this group, although they were not dealt with by Dixon, presumably because they weren't tropical. Dixon spent two pages trying to define his concept of *S. caespitosum*, but he found it extremely difficult to characterise. He certainly gave up on the idea of defining varieties, as the variation was so great in all directions, with so little correlation between characters. A look at American moss Floras will indicate the

similarity of *S. caespitosum/subpinnatum* and *S. demissum*. Buck (1998) considered that European *S. demissum* might be the same as *S. adnatum*, although American *S. demissum* is not the same and should be called *S. carolinianum*. Looking at collections elsewhere in the range of *S. demissum*, the plants in Hong Kong and Japan look similar to ours, but so does the Japanese *S. robustulum*. Whilst we are normally quite sure about how our species are delimited in Britain, here we have found a weakness that needs to be tackled, so perhaps this throws it back to bryologists in the BBS. What is *S. demissum*? Is it a good species, or is it a synonym of something else, e.g. is it the same taxon as *S. adnatum*? There are plenty of challenges left in the Sematophyllaceae - even in Europe.

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#### **ROD STERN (CHICHESTER): BRYOLOGY OF SOUTH WILTSHIRE**

Historically, Wiltshire has been the least well-known bryologically of all the counties of southern England, and the first records were not published until 1891. South Wiltshire comprises the southern half of the county, the northern boundary of VC 8 being the Kennet and Avon Canal. There are some significant differences from the present administrative boundary.

Large parts of VC 8 are on chalk, some of which is covered with Clay-with-Flints. Other important geological formations include the Upper Greensand (which gives rise to relatively acid soils), Jurassic limestones in the west, and Tertiaries in the south-east with acid sands and gravels.

Wiltshire is less wooded than most other counties in southern England, but there are extensive areas of woodland in the west on some large estates. Some of the more interesting bryophytes in ancient woodlands (i.e. woodlands since at least 1600 AD) include *Hylocomium brevirostre*, *Rhytidiadelphus loreus*, *Herzogiella seligeri*, *Plagiothecium latebricola* and *Trichocolea tomentella*.

There is much arable land on the chalk, as well as unimproved grassland. The latter is particularly extensive on the Ministry of Defence lands, the largest being Salisbury Plain Training Area which occupies about one-fifth of the vice-county. Generally, the chalk grassland is not very interesting bryologically as the grass is too long for bryophytes, but some closely grazed areas have characteristic mosses, such as *Weissia* species (including *W. sterilis*), *Rhodobryum roseum* and *Thuidium abietinum* subsp. *hystricosum*, while bare chalky

patches may have *Microbryum rectum*, *M. curvicolle*, *M. floerkeanum*, *Acaulon muticum* and *Ephemerum recurvifolium*.

The south-east part of VC 8 in or near the New Forest (much now being in Hampshire) has wet and dry heathland with *Dicranum spurium*, *Splachnum ampullaceum*, *Calliergon stramineum*, *Hypnum imponens*, *Campylopus brevipilus*, *Cladopodiella fluitans*, *C. francisci*, *Cephalozia macrostachya*, *Ptilidium ciliare* and many other bryophytes of interest, including fifteen *Sphagnum* species.

The main bryologists in VC 8 in the first half of the 20<sup>th</sup> century were C.P. Hurst in the north-east and the Dunston brothers in the south-west. After 1950, much useful recording was done by Jean Paton, Joan Appleyard, Ted Wallace and Francis Rose. The BBS had its spring meeting in 1989 based at Salisbury, and it became clear that much of VC 8 was still poorly known bryologically. A relatively intensive survey was carried out over a period of eight years until 1999. Distribution maps were prepared on a 10-km square basis with the intention of producing a bryophyte flora of the vice-county<sup>1</sup>.

**ANGELA E. NEWTON (NATURAL HISTORY MUSEUM, LONDON):  
PHYLOGENETICS, MOLECULAR DATA AND THE BRYOLOGIST IN THE  
FIELD**

Papers describing research using phylogenetic methods and molecular data are now widespread in many of the bryological journals, but how relevant are these methods, and the results obtained using them, to the bryologist in the field? It is of course impossible (at present) to use DNA to identify a plant in the field, just as it is impossible for most people to use scanning electron microscopy to look at spore walls to identify a plant. However, just as scanning electron microscopy permits an understanding of relationships that can be relevant to the bryologist in the field, so do phylogenetics and molecular data.

We all know taxa – species and genera – that are rather fickle and cannot be pinned down to a genus or a family, so that circumscriptions keep changing and taxa keep hopping about and turning up in different places in different classifications. One example is the plant that I learnt as *Isopterygium elegans* (Brid.) Lindb., previously *Plagiothecium elegans* Brid., and now *Pseudotaxiphyllum elegans* (Brid.) Z. Iwats. The new generic name has been largely accepted in the literature (e.g. Blockeel & Long, 1998), but the family placement has varied. The species has been transferred around in the Plagiotheciaceae, where it is still placed by the taxonomic database at Missouri Botanic Garden (<http://mobot.mobot.org/W3T/Search/most.html>), but is listed under the Hypnaceae by Buck & Goffinet (2000). In another example, *Hypnum lindbergii* Mitt. was transferred to *Calliergonella* in the Amblystegiaceae by Lars Hedenäs in 1990, but this move has not been widely accepted. On a much larger scale, molecular sequence data have shown that the orders Hypnales and Leucodontales (=Isobryales) are not natural – different groups of leucodontalean mosses appear to have evolved independently from the Hypnales. This may be no surprise to many – there are a number of taxa that have been transferred between families or from the Hypnales to the Leucodontales and back again by different authors. Despite accounting for perhaps half of the species of extant mosses worldwide, there is very little hierarchical structure in the pleurocarps when compared to the acrocarpous taxa. Mosses in the Leucodontales are characterised by epiphytic habit and

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<sup>1</sup> Now published in *Journal of Bryology* **23**: 221-260.

reduced peristomes, features that have frequently been shown to be correlated, and that may reflect repeated parallel evolution from terrestrial plants with complete peristomes.

The first two examples given above both relate to changes based on morphology, and reflect re-assessments of the relationships of small groups of species. Do these changes actually make sense? Are they likely to be modified in the future? Is there any way of determining which changes are reasonable and which don't really help? Where do these plants really belong? And on the larger scale, are there sub-groups within the pleurocarpous mosses that can be recognised as orders, or at any other level? It is these kinds of question that phylogenetics and molecular data may help us resolve.

Both new kinds of data and new ways of analysing data are involved. A very large proportion of the work of recognising and describing species, genera and other taxa has been carried out using morphological and ecological data, with progressive refinements, over at least the last 2000 years. But intractable problems remain, some of which we are not even aware of, that cannot be solved with traditional methods. Morphological characters in mosses are notoriously plastic. For example, costa length and form, cell size and shape, and peristome morphology, may be so variable that they provide little useful information, and arguments have raged about the relative importance of the sporophyte and the gametophyte for understanding higher level relationships. However, many morphological characters may be highly informative, including both traditional characters and 'new' characters, such as axillary hairs, pseudoparaphyllia, and the presence or absence of a hyalodermis on the stem. Character analysis, which basically consists of careful scrutiny to determine whether a morphological feature is positionally and structurally 'the same' as that in another plant, is a necessary preliminary step. The disadvantages of using morphological data are the variability and plasticity of the characters, the long period of training and experience necessary to understand what is seen down the microscope, and the rather few informative characters found relative to the input of effort (usually no more than one to two characters per taxon). One advantage is that morphological characters may reflect the processes of evolution in a stop/start fashion, with more changes happening at periods of great evolutionary change (the periods we are most interested in reconstructing) and fewer in the long quiet periods between.

Molecular data are derived from several different sources – sequences of DNA bases in nuclear, chloroplast, mitochondrial or ribosomal genes, amino acids in proteins, and structural elements in DNA, such as insertions and deletions (indels) and secondary folding. Chloroplast sequences are most often used by botanists, partly because their use reduces problems from non-plant contaminants. There is now a very large amount of data available, especially for the gene *rbcL* (which codes for production of the essential photosynthesis enzyme ribulose biphosphate carboxylase), allowing extensive comparative studies to be made. Molecular data are also subject to character analysis, in the form of sequence alignment, with each position in the DNA chain representing a character. One of the advantages of molecular data is that they are not directly affected by the ecological pressures that affect morphology. In addition, molecular data can be easily obtained in a suitable lab, and provide much larger amounts of information – frequently more than ten informative characters per taxon. This makes computer analysis much easier and faster; up to a point, the more comprehensive the sampling of taxa, and the more informative characters per taxon, the easier the analysis. One of the principal disadvantages of molecular data is that they appear to evolve at a more or less constant rate in any given lineage, so that 'fast' evolutionary events may be missed, or overwritten by later changes.

Phylogenetic analysis, or more specifically, cladistics, is based on principles laid down by Willi Hennig in the 1960s (Kitching *et al.*, 1998), many of which codify good taxonomic practice that would have been used subconsciously by the better earlier systematists. One example is the nature of the information supplied by different characters. These are referred to as autapomorphies, synapomorphies, plesiomorphies and homoplasies. An autapomorphy is a character state that is unique to a single species (or to a single group), and which allows us to identify the species, but tells us nothing about the relationship of that species to others. For example, *Rhytidium rugosum* has rugose leaves, which allows us to identify it with ease, but this doesn't tell us what it is related to. This can also apply at the level of a genus or other group – if a genus has a certain character state, but nothing else does, this tells us nothing about the relationship of the genus to other genera. However, if all descendants of a common ancestor share a character state which does not occur in any other taxa, it does tell us about the membership of the group, and is then termed a synapomorphy. But at a different level, if you are looking at relationships within a subset of the group, the character is not informative. Possession of an articulated peristome is a synapomorphy for the arthrodontous mosses, but within the group this character is plesiomorphic, and, for example, tells us nothing about the relationship of *Bryum* to *Hypnum*. (Other details of peristome structure might, however, provide useful information to address this problem.) Finally, character states are referred to as homoplasious if the apparent similarities are superficial and do not reflect a shared evolutionary origin. There are different ways in which this might happen – convergent or parallel evolution, reversal, or misinterpretation on the part of the observer. A character state that is homoplasious will provide incorrect or misleading information about relationships. For example, erect capsules are found in a wide range of taxa, but we don't think that all species with erect capsules are more closely related to each other than they are to species with inclined capsules.

A large amount of data is used in most phylogenetic studies, and analysis is carried out using various computer programs; PAUP and Hennig 86 have been widely used, but there are many others. The programs use logical or evolutionary models to build and assess cladograms, which are approximations of phylogenetic (or evolutionary) trees. There are two basic types: maximum parsimony (which endeavours to find the cladogram that requires the smallest number of evolutionary changes to explain the data at hand) and maximum likelihood (which estimates the likelihood of finding the data at hand for a given cladogram). Both have advantages and disadvantages, and there is an enormous literature discussing the theoretical and methodological issues. New techniques are being developed all the time, e.g. one of the methods currently being actively explored is Bayesian inference. The end result is a cladogram (often referred to as a tree), or more often a series of cladograms which vary to a greater or lesser extent. Each cladogram represents a different possible arrangement of the data, and they are often treated as estimates of the actual course of evolution. Often such groups of cladograms are summarised as consensus trees, with a 'strict' consensus, for example, showing only the groups that are found in all the different cladograms. Jackknife and bootstrap values, and decay indices, are also often shown, providing different assessments of the support for individual groups. The cladograms are hypotheses, our current best estimates of the relationships of the organisms, and as such can never be regarded as 'true', but they do provide a tool to further explore and understand relationships.

So how do the results of this work affect the bryologist in the field? Much of the work is still very preliminary, but two different kinds of result can be expected. One is clarification of the relationships of individual problematic taxa, and the second is clarification of the

relationships of larger groups, so that families and orders become more natural. There have already been some interesting rearrangements of taxa that previously were very poorly understood, although most of these have concerned species or genera that do not occur in the British Isles. For example, several odd taxa that lack peristomes have been transferred to groups very far from their original placements, but with which they share various other morphological features. One of these is *Oedipodium griffithianum*, usually placed in the Splachnales, but shown by molecular data to belong near the base of the moss lineage near *Andreaea*, and therefore primitively lacking a peristome (Newton *et al.*, 2000). The position of *Hypnum lindbergii* has not yet been clarified, although most molecular studies place it distinct from the Hypnaceae, either near the Hylocomiaceae (Buck *et al.*, 2000) or, supporting Hedenäs (1990), with members of the Amblystegiaceae (unpublished data).

Although some orders and families are well circumscribed and useful, others don't really help much in placing individual species. The result is that many people learn each genus or species as an individual entity. This takes more time and effort than being able to quickly place any species in the higher levels of the hierarchy, where there are fewer possibilities to consider, and fewer chances of going wrong somewhere in the key. If molecular and phylogenetic studies result in the development of more natural classifications, this should eventually make identification and understanding of genera and species more straightforward.

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## FIELD EXCURSION TO WYNDCLIFF AND GREAT BARNET'S WOODS, 9 SEPTEMBER 2001

The group met in the large Forestry Commission car park below the Wyndcliff quarry (ST59D). After an initial get-together we moved off to the first site close to the car park. Several tiny limestone pebbles were shown to support *Seligeria campylopoda*, a *S. recurvata* look-alike listed in the Red Data Book as Data Deficient. There was discussion about the conservation of *S. campylopoda*, the need to include it in the Monmouthshire local Biodiversity Action Plan, and the importance of keeping the pebbles free from fly-tipped rubbish. At the time, this was one of only two known colonies at the species' only known

extant British site. However, Jonathan Sleath discovered two further small populations on pebbles below the car park.

After we had all enjoyed this tiny rarity, things continued to be 'data deficient' as we tried to relocate *Ditrichum flexicaule* s.s., collected from the Wyndcliff 110 years ago by Binstead and Shoolbred. Various candidates were collected from the quarry floor and taken home for later inspection; unfortunately, all proved to be *Dicranella varia*. Back in the car park, further interest was provided by some *Hypnum lindbergii* found by Mark Pool, a new record for the Wye valley, and by some ephemerals, including *Dicranella schreberiana* and *Bryum klinggraeffii*, demonstrated on a bank by Mark Hill.

Our descent into the Wye valley below the car park, an area of woodland known as Cave Wood, was accompanied by mutterings about how dry the area was. The leader assured people that there were a few more humid areas and, sure enough, we soon found *Trichocolea tomentella* on rocks in a small stream. Sharing the rocks were plenty of *Fissidens rivularis* c.fr., an unusually common species in the Wye valley, *Riccardia chamedryfolia* and *Chiloscyphus polyanthos*. In our eagerness to reach the stream we had walked past the best humidity indicator of all - *Lophocolea fragrans* c.fr. was found by Jean Paton and Tom Blockeel in abundance on a large plane tree by a ruined cottage some 50 metres up the path.

With lunch beckoning we split into several small groups to look for calcicoles. Most groups noted *Porella arboris-vitae* growing in small quantity on low crags with *P. platyphylla*, *Neckera crispa* and *Anomodon viticulosus*, as well as *Taxiphyllum wissgrillii* and *Eurhynchium crassinervium* on small rocks. Sam Bosanquet showed a few people *Fissidens gracilifolius* on fine limestone scree, and Nick Hodgetts found some *Plagiochila britannica*. A couple of crags plastered with *Marchesinia mackaii* were located and, while searching one of these, Graham Motley found a *Cololejeunea* that was assumed in the field to be *C. rossettiana*; a little was collected and it proved to be *C. calcarea*, another new species for the site.

After lunch a slightly smaller group moved to Great Barnet's Woods (ST59C), a mile west of Chepstow. Sam had found *Thuidium recognitum* here in early 2000 and hoped to assess the size of the population. Unfortunately, finding the limestone pavement on which the *Thuidium* grew proved difficult enough and the scarce species was not relocated. Despite this, the group remained in good humour and found several new species for the site. Most notable were Jean's female *Pellia neesiana*, growing on a trackside with male *P. endiviifolia*, and John Blackburn's *Leucobryum juniperoideum* on a tree stump. As well as a number of calcicoles, this area of poorly-developed pavement held various locally rare mosses, including *Hylocomium brevirostre*, at one of its very few Monmouthshire sites, and *Rhytidiadelphus loreus*.

The chance of seeing unusual species, such as *Seligeria campylopoda*, *Fissidens rivularis* and *Lophocolea fragrans*, merely provided a background to bryologising in the field with many friendly BBS members. I hope everyone had an enjoyable time on their brief visit to Monmouthshire.

SAM BOSANQUET

## REPORTS OF LOCAL MEETINGS

### THE BORDER BRYOLOGISTS, 2001

'The mind is a moving picture, according to which we are ceaselessly painting. But it takes in at a glance what the painter's brush executes gradually, and to see an object, to decide that it is beautiful, to experience a sensation of pleasure, and to desire possession of that object are all parts of a single and instantaneous state of mind.'

Botanists attest the truth of Diderot's sublime insight as they quarter the countryside for new plants: at the moment of pleasurable discovery they admire their forms, colours, scent, taste and texture, and also covet their quarry for herbaria or albums of photographs. Yet the Border Bryologists did not begin their year's programme in the field, but with a now-traditional January day at the microscopes in Ludlow Museum. Local bryologists set store by this annual opportunity to share and solve bryological problems – whether recalcitrant gatherings, or difficulties with a key or techniques for examination.

February fog cloaked the Wye valley as seven hardy souls set out to explore woodland on Capler Hill (SO5932) south of Hereford. A shy sun eventually burnt off the vapours, daffodils in early bud made a cheerful portent of spring, and we lunched in pleasant sunshine on a south-facing bank in a pasture near the top of the hill. Both species of *Pseudocrossidium* and *Ephemerum serratum* var. *minutissimum* grew nearby. Rather as we had found at Dinmore two years ago, the wooded upper parts of Capler Hill are acidic and bryologically rather tedious, but minerals draining from above endow the steep lower banks between the lane and river with a more varied and calcicolous flora. Masses of Hart's-tongue Fern (*Phyllitis scolopendrium*) spoke of base-rich conditions, and several old sandstone quarries carried *Anomodon viticulosus*, *Homalia trichomanoides*, *Mnium stellare*, *Zygodon viridissimus* var. *stirtonii*, *Campylophyllum calcareum*, *Eurhynchium pumilum* and *Rhynchostegiella tenella*. Lorna Fraser found a patch of *Taxiphyllum wissgrillii*, and further searching would surely reveal many more plants of interest. Nearby, a few minutes inspecting the flood-zone of the River Wye at the end of the day brought *Didymodon nicholsonii*, *Schistidium rivulare* and *Cinclidotus fontinaloides* to notice. A high water-level probably hid more species from view.

After the floods of early winter, the pestilence arrived, and restrictions on access to the countryside brought about by the epidemic of foot-and-mouth disease caused us to shift our ground in March, April and May. On a bitterly cold day in March we bryologised in Ross-on-Wye (SO52/62). A car park near Wilton Bridge held *Didymodon luridus* in abundance around the margin of tarmac, with smaller quantities of *Encalypta streptocarpa* on a kerbstone, and the much less common *Tortula protobryoides* on gravelly soil. The Reverend Augustin Ley found this moss on a garden path at Pengethley in February 1888. One can imagine him pausing to gather it on his way to visit a parishioner. Pengethley is only two or three miles west of Ross, so it was good to discover that *T. protobryoides* remains in the district, and may be readmitted to Herefordshire's list of bryophytes. Mortared walls across the road from the car park carried *Pseudocrossidium revolutum* and *Schistidium crassipilum*, the latter distinguished from *S. apocarpum* s.s. by elongated exothelial cells in the lower half of its capsules. It is beginning to look as though *S. crassipilum* is much the commoner of the two species in this part of the country. Alder trees by the river gave us *Syntrichia latifolia*, *Orthotrichum sprucei* and *Leskea polycarpa*.

After a bowl of life-saving soup at Les Smith's, we thawed out sufficiently to nose round his garden, finding *Didymodon luridus*, *D. sinuosus*, *Dicranella staphylina*, *Orthotrichum affine* and *O. diaphanum*. Les was like a dog with two tails to wag when *O. lyellii* turned up on his lilac tree, with *Didymodon nicholsonii* on the tarmac drive.

April's meeting was conducted in ceaseless rain, so it was just as well that the epidemic of foot-and-mouth had obliged us to forsake exposed ground on the Long Mynd for the relative shelter of Bishop's Castle churchyard (SO3288), which by the most fortuitous of circumstances lies directly opposite the Six Bells Inn. Mortared walls around the churchyard sprouted *Bryum radiculosum* and *Didymodon sinuosus*, and *Scleropodium cespitans* and *D. nicholsonii* grew on the tarmac path to the church. After an hour in the rain we felt able to retreat without loss of face, substituting bucolic for botanic pleasures with some Cloud Nine in the Six Bells, in which happy circumstance the day passed into hazy remembrance.

Of our finds that day, *Scleropodium cespitans* and *Didymodon nicholsonii* have for long tolerated the scarifying action of particles of soil and other debris swept by water past riverbanks, but they can also withstand similar attrition from feet and wheels on paths and driveways. One small consolatory benefit of the foot-and-mouth epidemic may be a rash of records of mosses from tarmac drives, pavements, building sites and other habitats in towns and villages. Indeed, in some districts *D. nicholsonii* seems to be a widespread and abundant suburban weed. Not a particularly charismatic cryptogam, it is probably overlooked, and may not merit its elevated status as 'Nationally Scarce' for much longer.

*Platygyrium repens* is another moss which, like *Didymodon nicholsonii*, has recently turned up several times in Herefordshire and Shropshire. It seems to like damp or humid conditions – on oak and ash by a pool in Lower Bolstone Wood (SO53) south of Hereford, on an old apple tree by the River Teme in Downton Gorge (SO47), in great quantity on alder, silver birch, crack willow and hazel in the damper parts of Incham Coppice (SO57) near Ludlow (but not in the drier part of the wood), and on ash by the River Rea downstream from Cleobury Mortimer (SO67).

Still in the throes of foot-and-mouth, we rearranged our meeting for May to Chaddesley Corbett (SO8873) in north Worcestershire. There we looked over Mervyn and Rose Needham's commercial nursery garden, where the bryological weeds reminded us again how many species we pass by when ignoring disturbed habitats. The sandy ground was very dry, and Mervyn had been zealously protecting his livelihood with a spray-gun, but we rounded up the usual suspects from the soil and concrete kerbs, and added *Campylopus pyriformis* from peat in some of the pots. After demolishing Rose's wonderful buffet lunch, we ambled across the road to examine some sandstone exposed by a stream. Conditions there were sufficiently damp for a quite different suite of species, and here may be told the best finds of the day – *Amblystegium fluviatile*, *A. varium*, *Fissidens crassipes* and *F. pusillus* (the latter plant new to Worcestershire), with *Hookeria lucens* nearby.

Our October meeting took place at Featherknowl (SO5170), a private house and grounds two miles south of Ludlow. This meeting combined *al fresco* exploration of the garden and orchard with the opulent ambience of a large drawing room for microscopic examination of our finds, a mixture which proved particularly popular for several children, and will be worth repeating should similar opportunities arise again in future. The advantages of promptly confirming the identities of plants found only a few minutes previously helped to fix in our

minds the connections between habit and form as revealed to the naked eye or lens, and microscopic details of the same plants once their leaves and capsules had been mounted beneath coverslips.

A gravel and brick drive by the house had a sward of *Didymodon luridus* and *D. nicholsonii* (both species superficially similar in form, but the former having unistratose margins to the leaves, while the latter has bistratose margins). Tiles on the roof sprouted *Grimmia pulvinata*, *G. trichophylla* and *Racomitrium fasciculare*, while in the orchard behind the house we noticed great differences between the epiphytic bryofloras of the various kinds of tree. The trunks of old cherry trees were entirely devoid of moss, with damson and pear hardly more rewarding, and much the best trees were apple. In addition to plentiful *Hypnum cupressiforme*, *Brachythecium rutabulum*, *Amblystegium serpens*, *Dicranoweisia cirrata*, *Orthotrichum affine* and *O. diaphanum*, a large colony of *Syntrichia papillosa* grew on one trunk, showing its characteristic combination of gemmae and inrolled leaf margins, while more modest quantities of *Brachythecium salebrosum* grew on another. This uncommon moss has sufficiently plicate leaves to have one suspecting a *Homalothecium* at first glance, but the dimensions of the basal cells of the leaves differ from the cells above. Bryologists have paid little attention to the still-numerous old orchards of Herefordshire and neighbouring counties, and our findings at Featherknowl left us wondering how important old apple orchards may be as refugia for uncommon epiphytes requiring adequate light and a neutral or basic bark – a bryological equivalent of the rich lichen flora on tree trunks in old country parks in the region, such as at Moccas and Brampton Bryan.

Worcestershire has been enjoying a bryological renaissance recently, and 16 people met up in the Wyre Forest (SO7476) west of Bewdley for our last meeting of the year on a mild Sunday in November. Rosemary Winnall guided us to north-facing banks on the Worcestershire side of Dowles Brook, where damp ground and humid air suited the liverworts *Riccardia multifida*, *Saccogyna viticulosa* (this in considerable quantity) and *Scapania nemorea*, with the moss *Hookeria lucens* in attendance too. As so often happens in these affairs, the best ground was not reached until a few minutes before lunchtime, and would repay less hasty inspection. Nearby, concrete on the bridge over the brook held *Didymodon rigidulus*, *D. sinuosus* and *D. tophaceus*, with *Amblystegium fluviatile* and *A. tenax* growing on stones by the water.

After a picnic, we moved a quarter of a mile up to the forest's 'Great Bog', immediately south of a long-disused railway-line. Choice vascular plants once found there by George Jorden, Edwin Lees and others 150 years ago, and reported in old issues of the *Phytologist* and *Transactions of the Worcestershire Naturalists' Club*, include Summer Lady's-tresses (*Spiranthes aestivalis*), Fragrant Orchid (*Gymnadenia conopsea*) and Marsh Helleborine (*Epipactis palustris*), as well as Bog Pimpernel (*Anagallis tenella*), Broad-leaved Cottongrass (*Eriophorum latifolium*) and Alder Buckthorn (*Frangula alnus*). But the place has suffered greatly from subsequent drainage, and is not the botanical hot-spot it once was. Nevertheless, a number of calcareous flushes remain, and local naturalists have recently cleared many trees and shrubs in an attempt to restore some of the former botanical character. We found the flushes to be full of *Palustriella commutata* var. *commutata*, with *Campylium stellatum* var. *stellatum*, *Cratoneuron filicinum* and *Ctenidium molluscum* for company round the edges of the water. A patch of *Leucobryum juniperoideum* grew on damp soil by one of the felled trees, and sufficient timber remained nearby for *Dicranum montanum* and *D. tauricum* to go on the list. Lorna Fraser found a colony of *Trichocolea tomentella*, and *Sphagnum inundatum*

turned up in a drainage ditch on the edge of the bog. Of these, the *Leucobryum* was new to Worcestershire, and the *Trichocolea* and *Sphagnum* had not been recorded in the county for over 50 years.

In these ways we added fresh details during 2001 to our pictures of nature in the Silurian (and Permo-Triassic) region, and derived much pleasure from tracking down, observing, and taking into possession the plants we found.

### **Shropshire bryoflora**

*A Bryological Tour through Shropshire* and *An Annotated Check-list of the Bryophytes of Shropshire* are now available on the British Bryological Society's website (<http://www.rbge.org.uk/bbs/vc40list.htm> and <http://www.rbge.org.uk/bbs/vc40site.htm> respectively), and will be brought up to date annually. If you would like a copy of these documents but do not have access to the internet, I can supply them on floppy disk or as an unbound paper copies; simply write to me at 12A Castleview Terrace, Ludlow, SY8 2NG. There is no charge for this, but please offer a donation payable to the British Bryological Society to cover the costs of copying, packing and postage.

The Border Bryologists' programme of meetings is also available on the BBS's web-page and on the Herefordshire Botanical Society's pages at <http://ralph.cs.cf.ac.uk/HBS/Border.htm>.

MARK LAWLEY

### **SOUTHERN GROUP**

#### **Marlborough Deepes (VC 11), 16 September 2001**

Neil Sanderson led an excellent meeting, postponed from March because of foot-and-mouth restrictions. Marlborough Deepes comprises an area of old marl pits at the extreme south-west corner of the New Forest. The site has become much overgrown with scrub and woodland since Jean Paton's South Hampshire Flora of 40 years ago, but there has been some recent opening up by the Forestry Commission.

Most of the calcicole mosses recorded here in the past were seen. These included *Calliergon giganteum*, *Drepanocladus revolvens*, *Rhizomnium pseudopunctatum* and *Scorpidium scorpioides*, all of these being local or rare in southern England. *Trichostomum brachydontium* was the second record for VC 11 (in the same 10-km square as the first). A good bonus was the flowering plant Least Bur-reed (*Sparganium minimum*), which is very rare in southern England.

#### **Horncroft Farm, Fittleworth (VC 13), 18 November 2001**

This meeting was led by Bruce Middleton, who works for South Downs Conservation Board and is advising the owner of Horncroft Farm on its management. There is an interesting diversity of habitats, including wet meadow, pond, streams, woodlands and a field which has been fallow for three years, all on the Lower Greensand. *Tortula modica* was abundant in the field, and *Bryum bornholmense* (determined with the aid of the recent paper in the *Journal of Bryology*) was present; Andrew Branson got his eye in well for *Pleuroidium acuminatum*.

Colonisation by non-arable mosses was occurring and we agreed that the field should be ploughed.

Otherwise a wide range of species was seen. Two of the more notable were *Drepanocladus aduncus* by the pond and *Epipterygium tozeri* on a stream bank.

ROD STERN

## **SOUTH-EAST GROUP**

### **East Kent arable fields (VC 15), 10 October 2001**

This was the introductory meeting in a series to start the arable bryophyte survey in Kent (see pp 50-52 of this *Bulletin*). The rather poor prevailing weather cleared to give us a sunny, moderately warm day on which to visit two separate sites owned by the Quex Park Estate in Birchington, near Margate.

The first locality was in Quex Park itself: potato fields with Hamble series soil on Head Brickearth over chalk. The potatoes had been harvested late, and some undisturbed areas remained with a bryoflora which had developed since the early summer. The usually dry climate in this area normally leaves very little of note in fields like this, but the recent wetter weather seemed to have boosted the moss quantities to workable levels!

The second site was at King's End Farm, adjacent to Richborough Castle (Roman remains) near Sandwich, in the lowest reaches of the Stour valley. Our locality was a stubble field in the flood plain, on Newchurch series soil, similar to that on Romney Marsh. The land here is less well drained than on the Marsh, and the field had water-filled ruts and quite a good quantity of mosses in places.

Two methods of study were employed. The first was a repetition of Trudy Side's sampling for her 1974-75 survey. Twenty pieces of soil of about 9 square centimetres, containing at least some bryophyte growth, were collected at random. A method was devised to eliminate the hazard of losing count. Twenty small plastic food bags were torn from their dispensing box and put into one pocket. As each sample was collected it was put into its own bag, rolled up to avoid spillage and placed with the others into another bag. When all twenty bags had been used, the sampling was complete; the collecting bag was labelled and sealed. Randomness of sampling was enhanced by walking in a zig-zag fashion, accepting specimens from others in the team who had also been collecting in the designated area, and leaving on one's distance spectacles so as not to see the plants clearly. (Nevertheless, the brownish fuzz of massed sporophytes was still a distraction!) The use of plastic bags meant that the specimens had to be transferred to newspaper packets for drying immediately upon return home. They were later studied in a manner based on the recommendations from Richard Fisk in *Bulletin* 76: 47, and species lists were drawn up.

The second method was the routine compilation of a comprehensive species list including all taxa that could be identified in the field, with samples taken of any that couldn't. At both sites this included areas and habitats which were not part of the arable field survey; this was particularly important at King's End, where, to our knowledge, the bryophytes had not previously been studied.

At the time of writing, the identification of specimens from the 20-sample method is not yet complete, but provisional lists from the arable fields can be presented:

Quex Park: *Barbula convoluta*, *B. unguiculata*, *Bryum bicolor*, *B. klinggraeffii*, *B. rubens*, *B. violaceum*, *Dicranella staphylina*, *Tortula acaulon*.

King's End: *Barbula convoluta*, *B. unguiculata*, *Bryum rubens*, *Leptobryum pyriforme*, *Tortula acaulon*, *T. modica*.

Our special thanks go to Mr A. Curwen, the Estate Manager at Quex, for his most valuable help in arranging the day's meeting.

MALCOLM WATLING

### Scotney Estate (VC 14 & VC 16), 28 October 2001

Scotney is a National Trust property best known for its garden set about a moated medieval castle ruin. Beyond is sheep-grazed parkland with some fine old trees and extensive woodlands of, mainly, sweet chestnut coppice, all on Wadhurst Clay. The boundary between VC 14 (East Sussex) and VC 16 (West Kent) forms a loop within the property, making it an ideal site for a joint meeting of the Southern and South-East Groups. Twelve members from Kent, Sussex and Surrey worked the woods and park. A total of 86 species was recorded for the estate, 62 in VC 14 and 56 in VC 16, including a few found on two previous 'recce' visits.

In the park a fine wingnut tree was covered with epiphytic lichens and bryophytes, including abundant *Zygodon rupestris* (VC 14) and some *Syntrichia laevipila*. A gathering from a stream brought up *Fontinalis antipyretica* and *Chiloscyphus polyanthos*, and on the bank, lurking among *Fissidens bryoides*, a few plants of *Epipterygium tozeri* (VC 16) were spotted by Rod Stern. Serendipity indeed. Growing with *Pleurozium schreberi* and *Polytrichum formosum* on a bank in the park was *Hylocomium splendens* (VC 16), not seen too often in Kent. Epiphytes were generally scarce in the woods but included *Microlejeunea ulicina*, *Metzgeria furcata*, *Orthotrichum lyellii* and a small amount of *Ulota bruchii*.

The woodland rides were covered with fallen leaves but *Dicranella varia*, *Tortula truncata* and *Pseudephemerum nitidum* were seen, and a fine stand of *Hypnum lindbergii* (VC 14) bordered one path for several metres. Wet ditches beside the rides in VC 16 showed abundant *Nardia scalaris* and *Diplophyllum albicans*, with *Sphagnum palustre* and *S. denticulatum*. The star of the day was *Pallavicinia lyellii* growing along a woodland bank beside a former forestry track; all plants inspected were female. This Red Data Book species is a new record for VC 16. *Scapania nemorea* was found near the *Pallavicinia*. There was a small amount of *S. irrigua* on the bank of the main drive into the car park.

Otherwise the expected range of bryophytes in mildly acid clay woods was recorded, including the woodland form of *Ctenidium molluscum*. We failed to find *Leucodon sciuroides*, recorded here in 1987; every tree in the park needs a further close inspection to discover all the epiphytes.

JAN HENDEY

## 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 accommodation.

### SPRING FIELD MEETING 2002, Isle of Wight, 13-20 March

Local secretary: Mrs Lorna Snow, Ein Shemer, Upper Hyde Farm Road, Shanklin, PO37 7PS; tel: 01983 863704; e-mail: snow@shemer.freemove.co.uk. Rod Stern and Howard Matcham will be assisting as field leaders.

Headquarters: Channel View Hotel, Hope Road, Shanklin, PO37 6EH; tel: 01983 862309; fax: 01983 868400.

Due to the general shortage of single rooms, the numbers booked into the Channel View Hotel will be limited to 20. There is plenty of alternative hotel or B&B accommodation within a short distance. Details can be obtained from the local secretary. Members should make their own arrangements and advise Lorna Snow where they are staying, for how long, and whether they have a car. Privately booked ferry charges are high. Most hotels can arrange a ferry-inclusive package which reduces the cost. If members can share a car this also helps.

There will be an informal get-together in the HQ hotel at about 8.45 p.m. on Wednesday 13 March. It is hoped that Dr Colin Pope, the Isle of Wight Ecology Officer, will give a short illustrated introduction to the ecology of the Island. The Island (VC 10) is compact, and no two places are much more than 20 miles apart. It is a microcosm of southern England, with ancient woodlands, chalk grasslands, wetlands, estuaries and cliffs all in close proximity. The maritime nature is felt right across the Island and a strong south-westerly influence is apparent in the distribution of many species. Air pollution levels are low. Visits will be made to rich ancient woodland sites, exposed coastal cliffs with springs and greensand outcrops, relict wetland sites, and medieval churchyards. We shall be hoping to find *Acaulon triquetrum* at St Catherine's Point, *Conardia compacta* in the Landslip, and *Leptodontium gemmascens*, among others. There are quite a number of species that were found in 1964 and have not been seen since. *Blasia pusilla*, *Lophocolea fragrans*, *Fissidens celticus* and *Philonotis marchica* also occur in the area. Unfortunately, due to a recent landslip the *Southbya nigrella* site, although still intact, is no longer accessible; as this area is very good for bryophytes we will try to visit as much as possible, bearing safety in mind.

Recording will be on a 1-km square or site basis, and the records will be incorporated in the update of the Isle of Wight Flora at present being undertaken. If any member would like to concentrate on a particular species or type of site, please let Lorna Snow have details, and endeavours will be made to arrange suitable site permissions, etc.

Members should assemble at the Channel View Hotel at 09.15 each morning ready to depart at 09.30.

The Island is covered by OS Maps Outdoor Leisure No 29, and the smaller scale Landranger No 196. Details of the programme will be sent later to those attending.

## SUMMER FIELD MEETING 2002, Llandybie, Carmarthenshire, 29 June - 6 July

Local secretary: Graham Motley, Countryside Council for Wales, Cantref Court, Brecon Road, Abergavenny, Monmouthshire, NP7 7AX; tel: 01873 737000 (work), 01873 852782 (home); e-mail: g.motley@ccw.gov.uk.

Headquarters: Ms K. Jenkins, Glynhir Mansion Guest House, Glynhir Mansion, Llandybie, Carmarthenshire, SA18 2TD; tel: 01269 850438; e-mail: glynhir@glynhir.demon.co.uk.

B&B at the Glynhir Mansion Guest House is £23 per day for stays of three days or longer; B&B with a substantial evening meal is £37.50 per day. Should members wish to eat elsewhere in the evenings, bar meals are available at local pubs and hotels within a short drive. The longest days in the field will be the Monday, Wednesday and Thursday, and on these days it would probably be sensible to eat out before we return to the headquarters. A small number of single rooms are available, with a £2 single person supplement for occupying a twin/double room. Packed lunches are available on request. Participants should make their own booking arrangements and make sure they mention the British Bryological Society. Early booking would be appreciated. Should any member wish to stay elsewhere, there is a variety of alternative accommodation within a short drive, and a list can be obtained from the local secretary. The nearest camp site is about 6 km away. There is a railway station at Llandybie, although services are infrequent.

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

Most excursions will be in Carmarthenshire, although southern Ceredigion will be visited on at least one day, and an upland site in Brecknock may also be visited. The Society met in Carmarthenshire in 1978 and we will avoid going to sites visited during this meeting. Recording for a Carmarthenshire Flora began about nine years ago and we will concentrate on areas from which there are relatively few or no records. Most of southern Ceredigion is bryologically unknown and we hope to make many new records there. We are also hoping that some good records may be made on the first evening, as within the grounds of the Glynhir Estate is a wooded gorge and waterfall, known to support Tunbridge Filmy-fern (*Hymenophyllum tunbrigense*), which is bryologically unexplored.

Much of the recent recording in Carmarthenshire has been on rather an *ad hoc* basis, often as part of the Flora organisers' jobs. However, in the past two years, recording has been more systematic and many good finds have been made, including *Anthoceros punctatus*, *Fossombronia incurva*, *Lophocolea fragrans*, *Hygrobiella laxifolia*, *Petalophyllum ralfsii*, *Riccia cavernosa* and *Coscinodon cribrosus*. Recent visits to what was thought to be the best recorded area, in the far north-east, have also turned up many interesting species, with one or more new sites for *Harpalejeunea molleri*, *Metzgeria leptoneura*, *Plagiochila exigua*, *P. bifaria*, *Mylia taylorii*, *Jubula hutchinsiae*, *Tetradontium brownianum* and *Anastrophyllum hellerianum*. The last species has been found to be relatively frequent in some woodlands. We will visit some of the remaining unexplored crags and woodlands in this part of Carmarthenshire and some similar habitats in south-eastern Ceredigion. It is hoped that many keen eyes will uncover more surprises.

A morning will be spent in some extensive east-facing oak woodland to the north of

Carmarthen, and from there we will move north and stop at a site on the Afon Teifi to see *Cryphaea lamyana*. Another day will be spent exploring the ridge to the south-east of the headquarters, which has a varied geology and supports a wide variety of habitats, including lowland bogs, limestone woodland and some disused quarries. A trip to some coastal block screes, known to hold *Frullania fragilifolia* and *Leucobryum juniperoideum*, and limestone, is also planned. Here, amongst other things, we will attempt to re-find *Grimmia alpestris* (apparently collected by H.H. Knight and only recently determined as this species) and *G. decipiens*.

Tuesday will be a 'free day', should anyone wish to have a break from bryophytes and visit local attractions such as the new National Botanic Garden of Wales at Middleton Hall, only a short drive from Llandybie. For anyone willing to do some tetrad bashing, a list of the most promising unrecorded tetrads will be made available. If there are any members on the meeting who have never visited the Carmarthen Fans, an excursion can be arranged. Species recorded here in recent years include *Leiocolea heterocolpos*, *Scapania aequiloba*, *S. gymnostomophila*, *Amphidium lapponicum* and *Oedipodium griffithianum*. An alternative excursion will also be arranged if there is demand.

For those who are keen to bryologise into the night, species recorded from sites within a short drive of Llandybie include *Scapania cuspiduligera*, *Jungermannia confertissima*, *Seligeria acutifolia* and *Fissidens monguillonii*.

I will be happy to send/e-mail an up-to-date checklist of Carmarthenshire bryophytes to members interested in attending the meeting. Other bryophyte literature relating to the counties we will be visiting will be made available during the meeting.

#### **ANNUAL GENERAL MEETING AND SYMPOSIUM 2002, Royal Botanic Garden, Edinburgh, 13-15 September**

Local secretary: Dr David G. Long, Royal Botanic Garden, Edinburgh, EH3 5LR; tel: 0131 248 2861; fax: 0131 248 2901; e-mail: d.long@rbge.org.uk.

Plans for this meeting are now being formulated. The theme of the meeting is planned to be 'bryological exploration at home and abroad', and it will include speakers who are currently undertaking fieldwork in Britain and others who have worked in the field in Europe and other parts of the world. During the evening it is hoped that there will be an opportunity to look at the Edinburgh bryophyte herbarium. Posters and exhibits on any aspect of bryology are welcome, but especially any with an international theme.

Some fieldwork in south-east Scotland will be arranged for the Sunday. Details for registration, travel, accommodation and submission of posters will be in the summer 2002 *Bulletin*, but may be obtained from the local secretary before that.

#### **BRYOLOGICAL WORKSHOP 2002, Preston Montford Field Studies Centre, Shropshire, 16-17 November**

Local secretaries:

For Preston Montford enquiries: Dr Mark Hill, CEH Monks Wood, Abbots Ripton,

Huntingdon, PE17 2LS; e-mail: MOH@ceh.ac.uk. For all other enquiries about the workshop and arable bryophyte survey: Ron Porley, English Nature, Foxhold House, Crookham Common, Thatcham, RG19 8EL; e-mail: ron.porley@english-nature.org.uk.

The theme of this year's workshop is arable bryophytes. It will be of particular interest to members wishing to participate in the BBS survey of arable bryophytes (see pp 50-52 of this *Bulletin*), and will include sessions on species identification and training in the survey's methodologies. An overseas speaker has been invited.

The cost of board and lodging at the Field Studies Centre will be £75 per person. This includes meals from Saturday lunch to Sunday lunch, and a shared (2-bed) room on Saturday night. There is a supplement of £7.50 if you prefer a single room (not *en suite*), and an additional £18 if you will require accommodation on the Friday night and breakfast on Saturday morning.

### **SPRING FIELD MEETING 2003, Norfolk/Suffolk, 10-15 April**

Local secretary: Richard Fisk, 1 Paradise Row, Ringsfield, Beccles, Suffolk, NR34 8LQ.

The spring meeting in 2003 is planned to take place on the Norfolk/Suffolk border. It is intended to visit a number of interesting sites, hopefully including Wheatfen Broad where *Timmia megapolitana* was discovered last year. Accommodation in the area is at a premium and early booking will be essential. Any members interested in attending should contact the local secretary who will have full details of the meeting with him at the spring 2002 meeting in the Isle of Wight.

### **SUMMER FIELD MEETING 2003, Kindrogan, 7-14 July**

Local secretary: Martin Robinson, Dalreoch Farm, Enochdhu, Blairgowrie, Perthshire, PH10 7PF; e-mail: mcr@dalreoch.fsnet.co.uk.

This meeting will be based at the Scottish Field Studies Centre at Kindrogan. It is hoped to tie in the meeting with a workshop on *Schistidium* run by Hans Blom.

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## **LOCAL MEETINGS PROGRAMME, 2002**

### **NORTH WESTERN NATURALISTS' UNION AND BRITISH BRYOLOGICAL SOCIETY**

All outings are on Saturdays and commence at the meeting place at 10.30 a.m. Please ensure that you contact the leader or one of the local secretaries\* before joining an outing, to check that there are no changes in venue or timing. Come provided with adequate clothing and a packed lunch.

16 March: SLINTER WOOD, VIA GELLIA. Meet at SK287591 (parking limited!). Miss Joan Egan.

- 28 April: BRUSHES CLOUGH RESERVOIR. Meet in the car park at SD952101. Dr Martha Newton.
- 4 May: DEEP DALE (PLANTLIFE RESERVE). Meet in the car park at SK171702. Mrs Grace Wheeldon & Mr Tom Blockeel.
- 8 June: LUMB SPOUT, TRAWDEN. Meet at SD916380. Messrs Alan & Norman Bamforth.
- 27 July: THE QUINTA & SWETTENHAM MEADOWS. Meet at the Swettenham Arms, SJ800672. Mr Tony Smith.
- 10 August: RIVINGTON. Meet in the car park at SD638148. Dr John Lowell.
- 7 September: CHEE DALE. Meet at SK104724. Dr Martha Newton.
- 5 October: PARR & BOLD MOSSES, NEWTON-LE-WILLOWS. Meet by the B5204 at SJ546934. Ms Audrey Locksley.
- 16 November: WARBURTON'S WOOD. Meet in Bell Lane at SJ557755. Mr Len Johnson.
- 30 November: KNOTT HILL RESERVOIR. Meet in the Junction Inn car park, SD962008. Messrs Alan & Norman Bamforth.

\* Mr E.P. McCann (North Western Naturalists' Union); tel: 0161 962 1226  
 Mr A.V. Smith (British Bryological Society); tel: 01663 744499

Particular thanks are due to Owen McCann who has been responsible for preparation of the programme of outings for many years, and who is now passing on the duty to Secretary designate John Lowell.

## OTHER BRYOLOGICAL MEETINGS, 2002

- 15-17 March: INTRODUCTION TO MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Rhyd-y-creuau, The Drapers' Field Centre, Betws-y-coed, Conwy, LL24 0HB. Especially for beginners, but others welcome too. Details from the Centre Director, Mr J. Ellis.
- 27 April & 11 May: MOSSES MADE EASY. Tutor: Dr Martha Newton, Centre for Continuing Education, The University of Liverpool, 19 Abercrombie Square, Liverpool, L69 7ZG. Two linked Saturdays, the second being field-based. Details from Ms L. Crombie (at above address; tel: 0151 794 2550; e-mail: lesley.crombie@liverpool.ac.uk).
- 17-19 May: *SPHAGNUM* WEEKEND. Tutor: Dr Martha Newton, Rhyd-y-creuau, The Drapers' Field Centre, Betws-y-coed, Conwy, LL24 0HB. A chance to learn how to recognise most of the British species in the field, and to study them alongside keys. Details from the Centre Director, Mr J. Ellis.
- 22-29 May: MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Orierton Field Centre, Pembroke, Pembrokeshire, SA71 5EZ. Offering individual guidance in identification and ecology at all levels. Details from the Centre Director, Dr R.G. Crump.
- 6-13 July: MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, PH10 7PG. Offering individual guidance in identification and ecology at all levels. Details from the Secretary, Ms R. Bromley.

- 13-17 July: *SPHAGNUM* MOSSES. Tutor: Dr Martha Newton, Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, PH10 7PG. Three days to practise field identification of most species of this ecologically important genus. Details from the Secretary, Ms R. Bromley.
- 19-26 July: MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Preston Montford Field Centre, Montford Bridge, Shrewsbury, Shropshire, SY4 1DX. Offering individual guidance in identification and ecology at all levels. Details from the Centre Director, Ms S. Townsend.
- 26-29 July: WOODLAND MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Malham Tarn Field Centre, Settle, North Yorkshire, BD24 9PU. A chance to compare the species of a wide variety of natural and semi-natural woodlands. Details from the Centre Director, Mr A. Pickles.
- 29 July - 2 August: MOSSES AND LIVERWORTS OF WETLAND HABITATS. Tutor: Dr Martha Newton, Malham Tarn Field Centre, Settle, North Yorkshire, BD24 9PU. An opportunity to examine many of the significant ecological indicator species of these valuable and intriguing habitats. Details from the Centre Director, Mr A. Pickles.
- 3-10 August: MOSSES AND LIVERWORTS. Tutor: Dr Martha Newton, Blencathra Field Centre, Threlkeld, Keswick, Cumbria, CA12 4SG. Offering individual guidance in identification and ecology at all levels. Details from the Centre Director, Mr A. Simms.
- 30 August - 6 September: UNDERSTANDING CONSERVATION THROUGH BRYOPHYTES. Tutor: Dr Martha Newton, Rhyd-y-creuau, The Drapers' Field Centre, Betws-y-coed, Conwy. LL24 0HB. For everyone with a professional or amateur interest in bryophytes and conservation. Details from the Centre Director, Mr J. Ellis.
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## BOOKS FOR SALE

The widow of the late Dr Dougal Swinscow has kindly given his set of Crum & Anderson's *Mosses of Eastern North America* for sale for Society funds. Members who wish to purchase the set at the fixed price of £70 plus p&p should write to the General Secretary, Mike Walton, (address inside front cover) by 5 April 2002, marking the envelope 'C&A' on the reverse. The successful bidder will then be drawn by lot. The set is being sold at a discounted price on the understanding that it will not be resold for a period of five years.

The Executive, on behalf of the Society, thanks Mrs Swinscow for her generosity.

The Executive is also grateful to Dr Michael Proctor who has given the following Census Catalogues (which are offered free, subject to payment of p&p): *Sphagna* (1946); *Hepatics*, 2nd ed. (1913), 3rd ed. (1930), 4th ed. (1965, two copies); *Mosses*, 2nd ed. (1926), 3rd ed. (1963, two copies); *Bryophytes* (Corley & Hill, 1981). Members who wish to receive any of these catalogues should write to the Secretary by 5 April 2002, marking the envelope 'CC' on the reverse. The successful applicants will then be drawn by lot.

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## COUNCIL NEWSLETTER NUMBER 18

Since the last Newsletter, Council has again dealt with a wide range of topics, several of which are highlighted here. Much of the work, as in the previous year, was concerned with policy matters and with trying to ensure that the Society meets its objectives and the needs of its members, and uses its resources as effectively as possible. Further details of the activities of Council during the year will be included in the President's Report from Council which will be in the minutes of the 2001 AGM in the next *Bulletin*.

### **The Society's committees and working groups**

As a continuation of its review of committees, Council approved new terms of reference for the Publications Committee (see *Bulletin 77*: 26). One of the motivations for these reviews is to establish mechanisms to ensure that membership of the committees is reviewed on a regular basis, so that members of the Society who wish to make a direct contribution to its activities through membership of committees and working groups are able to do so. Members of Council have contact with many of the members of the Society and are able to suggest nominations for election to vacancies but there will always be some who will be overlooked and who have appropriate experience to contribute. Those who would like to be considered as vacancies arise are, therefore, urged to contact the General Secretary. A summary of the committees and their present membership is set out on pp 52-53 of this *Bulletin*.

### **Publishing activities**

The Publications Committee has drawn up a timetable for a review of the Society's current publishing activities (the *Journal of Bryology*, the *Bulletin* and the Society's web site). The contract with Maney for the publication of the *Journal* has continued to work effectively; arrangements for automatic uprating of the payments for the support of the Editorial Office have been approved, and measures have been agreed for monitoring the level of stocks of back issues that belong to the Society but which are stored by Maney.

Jeff Bates, the current Journal Editor, will have served for 10 years in December 2002 but he has kindly agreed, subject to the approval of the AGM, to continue in office for a further two years to enable an orderly transfer of the office to take place. The work that Jeff has done and the status of the *Journal* is such that this will be a vital appointment, and Council is grateful to him for agreeing to stand for election for an extra two-year term.

### **The BBS herbarium and archives**

Following the transfer of the herbarium to NMGW and the wish of Roy Perry to retire from the post of Archivist, Council is reviewing the function and contents of the archives and the roles of the Curator and of the Archivist.

### **BBS meetings**

The impact of foot-and-mouth disease has been considerable, resulting in the cancellation of the Spring meeting and many of the meetings of local groups but, hopefully, the disease is now well on the way to complete eradication. In the circumstances, a substantial programme

of meetings has taken place. The year has seen a change of Meetings Secretary, following the resignation of Dan Wrench and the election of Mark Lawley to the office. This has prompted Council to review the programme of meetings and, arising from that review, the role of the Meetings Secretary is also being reviewed. Council wishes to place on record its thanks to Dan for the work that he has done in arranging a full programme of meetings while he held the office.

#### **Financial matters**

The Society is now able to benefit from the introduction of the Gift Aid scheme which enables tax paid by UK members to be reclaimed against their subscriptions. This is an important source of income which, with the maximum support of such members, will make a significant contribution to the Society's finances. Approximately 60% of the potentially eligible UK members have returned the form that was included with the last *Bulletin*. Members who have not yet done so are asked to read the notes on page 47 of this *Bulletin*.

A bequest of \$Can1,000 (approximately £440) from the estate of Mr H.R. Williams, a former long-standing member who died in 2000, has been received and has been placed in the Bequest Fund.

MIKE WALTON

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### **ELECTION OF OFFICERS AND ELECTED MEMBERS OF COUNCIL**

The terms of five Officers, the Bulletin Editor, the Journal Editor, the Reading Circle Secretary, the Recorder for Mosses and the Web Site Editor, expire at the end of 2002. With the exception of the Journal Editor, the present incumbents are all eligible for re-election.

Additionally, the Membership Secretary, Mark Pool, has given notice that he is not able to continue in the office after December 2002 and it will, therefore, be necessary to elect a successor.

The Journal Editor will have served a total term of ten years and, as such, can only be re-elected if nominated by the President and the Vice-President. Members will understand that this is a particularly critical appointment in terms of the qualities needed by the incumbent, the access to appropriate resources, and the timescale that is necessary for an effective transfer of responsibilities. The Executive, together with the current Journal Editor, has been considering the matter for some time and it is intended that a suitable nomination can be put to the AGM in 2004. In the meantime, the President and the Vice-President intend to nominate the present incumbent, Dr J.W. Bates, for re-election at the AGM in 2002 and are delighted that he has agreed to stand for re-election for this interim period.

Three Elected Members of Council will retire at the end of 2002 and neither Dr C.D. Preston nor Dr R. Tangney is eligible for re-election in this capacity until two years have elapsed. The third retiring Elected Member, Mr J.M. Turner, is eligible for re-election since he will not have served a full two-year term.

Members are invited to submit nominations for Officers and Elected Members, sending them to the General Secretary of the BBS, Mr M.A. Walton, Ivy House, Wheelock Street, Middlewich, Cheshire, CW10 9AB, to arrive no later than **17 August 2002**. A nomination must not be made without the consent of the person whom it is wished to nominate. If elections are needed, they will be held at the AGM in Edinburgh on 14 September 2002.

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## **PAYMENT OF SUBSCRIPTIONS OR OTHER DONATIONS BY UK MEMBERS: GIFT AID**

The British Bryological Society has agreed with the Inland Revenue that the Society can reclaim basic rate tax on subscriptions paid, or other donations given, to the Society, by UK members who complete a Gift Aid Declaration.

This means that, at the present basic rate of income tax, the BBS can reclaim £0.282 from the Inland Revenue for every £1 paid as a subscription (e.g. £5.64 for a £20 subscription from an Ordinary Member) at no cost to the member, who will continue to pay the unchanged subscription for the grade of membership.

To qualify for the scheme **you must pay an amount of income tax and/or capital gains tax at least equal to the tax that the British Bryological Society reclaims on your donations in the tax year (i.e. currently 28p for each £1 that you give)**. If you pay tax at the higher rate you can claim further tax relief in your self-assessment tax return. If you are unsure whether or not you qualify for the scheme, you can obtain further information from Inland Revenue Booklet IR65 which you can obtain from your local Tax Office, or from the Inland Revenue web site ([www.inlandrevenue.gov.uk](http://www.inlandrevenue.gov.uk)), or by e-mail from [saorderline.ir@gt.net](mailto:saorderline.ir@gt.net). You are not required to 'sign up' for any minimum period and you can cancel your declaration at any time if your circumstances change.

Forms were included with the last *Bulletin*, and the Society is grateful to the approximately 60% of the UK membership who have responded. As a result the Society's annual income, at no cost to the members, has increased by £1,100. **If you have not returned your form, you are urged to do so now.** If you have mislaid it, you need only to send a letter (or an e-mail) to the Membership Secretary, Mark Pool, (address inside front cover) which contains the statement:

'I [name] of [address] want the British Bryological Society to treat all subscriptions and/or donations I have made since 6 April 2000, and all subscriptions and/or donations that I make from the date of this declaration until I notify you otherwise, as Gift Aid donations.'

If in the future your circumstances change, and you no longer pay tax on your income and capital gains equal to the tax that the charity reclaims (or if you wish to do so for any other reason), you can cancel your declaration by notifying the Membership Secretary.

MIKE WALTON

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## BBS LIBRARY SALES AND SERVICE, 2002

### FOR LOAN (UK Members only)

Members wishing to borrow books or papers are advised to consider whether a photocopy 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 minimise loss or damage.
- c) Microscope stage-micrometer slide for calibration of eyepiece graticules. 10  $\mu$ m divisions. Loan deposit £45.00.

### FOR SALE

#### Bulletins and journals

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

*Transactions of the British Bryological Society/Journal of Bryology*:

Vol. 1: parts 1-4	£2.40 each; part 5 out of print
Vol. 2: parts 1-4	£3.00 each
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 1,3	£3.00 each; parts 2 & 4 out of print
Vol. 6: parts 1-2	£6.00 each; £12.00 per volume - ends series of <i>Transactions</i>
Vol. 7: parts 1-4	£5.00 each; £20.00 per volume - renamed <i>Journal of Bryology</i>
Vol. 8: parts 2,3	£5.00 each; parts 1 & 4 out of print
Vol. 9: parts 1-3	£5.00 each; part 4 out of print
Vol. 10: parts 1,3,4	£8.00 each; part 2 out of print
Vol. 11: parts 1-3	£10.00 each; part 4 out of print
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 2-4	£18.00 each; part 1 out of print
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
Vol. 19: parts 1-4	£47.25 each; £189.00 per volume
Vol. 20: parts 1-2	£49.50 each; £99.00 per volume (only 2 parts)

As from *J. Bryol.* Vol. 21 inclusive, back issues will only be available from our publisher, Maney Publishing, Hudson Road, Leeds, LS9 7DL, UK.

### BBS Special Volumes

Volume 1. Longton RE, Perry AR. 1985. <i>Proceedings of Jubilee Meeting 1983</i> , 89 pp.	£6.00
Volume 2. Newton ME. 1989. <i>A practical guide to bryophyte chromosomes</i> , 19 pp.	£2.50
Volume 3. O'Shea BJ. 1989. <i>A guide to collecting bryophytes in the Tropics</i> , 28 pp.	£3.50
Volume 4. Edwards SR. 1992. <i>Mosses in English literature</i> , 44 pp.	£2.50
Volume 5. Edwards SR. 1999. <i>English names for British bryophytes</i> , 2nd edition.	£3.50

### Census Catalogues

Duncan JB. 1926. <i>Census catalogue of British mosses</i> , 2nd edition.	20p
Sherrin WR. 1946. <i>Census catalogue of British Sphagna</i> .	20p
Warburg EF. 1963. <i>Census catalogue of British mosses</i> , 3rd edition.	20p
Paton JA. 1966. <i>Census catalogue of British hepatics</i> , 4th edition.	20p
Corley MFV, Hill MO. 1981. <i>Distribution of bryophytes in the British Isles: a census catalogue of their occurrence in vice-counties</i> .	£5.00
Blockeel TL, Long DG. 1998. <i>A check-list and census catalogue of British and Irish bryophytes</i> .	£7.50

### Other items

Adams KJ. <i>Microscope techniques for the bryologist. Part 1. A beginner's guide</i> .	£1.00
Evans DE, Perry AR. 1987. Moss Wall Chart.	£2.80
Grolle R, Long DG. 2000. <i>An annotated check-list of the Hepaticae and Anthocerotae of Europe and Macaronesia</i> .	£3.00
Newton ME <i>et al.</i> , eds. 1988. <i>Bryology: modern research and the ways forward</i> .	£5.50
Pearman MA. 1979. <i>A short German-English bryological glossary</i> .	50p
Perry AR. 1992. <i>Mosses and liverworts of woodland</i> , 41 pp.	£4.00
BBS tie, claret with single BBS logo	£4.95
Swift x20 handlens and case	£20.00
Patterson no 2 stainless steel forceps	£4.00
Idealtek no 3 stainless steel forceps	£7.25
BBS car stickers	£1.00 & SAE

PLEASE DO NOT INCLUDE CASH WITH ORDERS. Customers will be invoiced for the correct amount including postage and packing. A legibly printed address label would be appreciated. All the above are available from the BBS librarian:

*Kenneth J. Adams, 63 Wroths Path, Baldwins Hill, Loughton, Essex, IG10 1SH, UK.*

## RECENT DEATHS

It is with regret that we announce the deaths of:

Dr A.J. Malloch, a member of the Society since 1966 who, in addition to his bryological interests, was known for his work on vascular plant vegetation of cliff-tops and his contribution to the five-volume National Vegetation Classification publication, *British Plant Communities*.

Prof. J. Miles, of Banchory, Aberdeenshire, another long-standing member of the Society who joined in 1964.

Mr W.J. Newman, a member of the Society who joined in 1966. Mr Newman has bequeathed his bryological books and other bryological effects to the Society and further details will be published in a future *Bulletin*.

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## RECORDING MATTERS 21

### Regional Recorders

There are two amendments to the Regional Recorders list:

**29:** Chris Preston, CEH, Monks Wood, Abbots Ripton, Hunts, PE17 2LS.

**70:** Keith Raistrick, 1 Drewton Avenue, Heysham, Lancashire, LA3 1NU.

Keith already covers Westmorland and South Aberdeenshire, and we welcome him taking on the bryologically rich county of Cumberland. There are now 13 vice-counties in Britain without a Regional Recorder (39, 56, 71, 75, 85, 89, 90, 91, 93, 106, 107, 109, 112), and most of Ireland is also without (except H36-40). If you are interested in adopting any of these counties, please contact me.

### National and regional arable bryophyte survey

In *Bulletin 77* I set out the background to this exciting BBS recording project. A small committee (Mark Hill, Chris Preston, Gill Stevens and myself) has been busy behind the scenes refining the methodology, and so far we have had two meetings to explore the issues. The project will comprise several linked survey elements.

1. **Repeat of a survey carried out in Kent in the 1970s by Trudy Side.** The good news is that Gill Stevens has managed to track down the archived data of the original survey, but somewhat disappointingly, the exact fields that Trudy Side surveyed are not identified. On reflection, however, this is not a problem, since we do have tetrad data, and thus we can visit arable fields within specific tetrads for a comparison. The South-East Group are keen to take on this project, and in October 2001 they organised a day out to look at arable fields (see pp 37-38 of this *Bulletin*). I will be preparing detailed guidance on methodology, and providing arable recording forms that will be consistent with the national survey. We can then get the Kent survey up and running.

2. **Systematic national pilot survey.** In November, Mark, Chris, Gill, myself and other willing volunteers tested our methodology on a few arable fields in Cambridgeshire. This enabled us to identify any problems with the methodology and to refine the arable recording card. It went very well, with the bonus of finding two fields with the BAP priority moss *Weissia rostellata*, and also *Fissidens taxifolius* with tubers. The pilot survey will focus on three 100-km squares (SP, TL and SU), and willing recorders have already been identified. We will assess the pilot during the summer of 2002, and if necessary make amendments to the methodology in readiness to begin the full systematic survey in autumn 2002.
3. **Full systematic national survey.** This will begin in the autumn of 2002 and we will be looking for as many participants as possible to make it a success. The methodology has been refined in that we have now selected 22 100-km squares that contain more than 15% arable land (as defined by the 1990 Countryside Survey), from which tetrads have been selected (randomly but subject to the restriction that only one tetrad can be selected from a given 10-km square) that contain 50% or more arable land. The number of tetrads selected in each 100-km square is in proportion to land area (not simply arable area) so that 100-km squares with little land area are not over-sampled. In effect, there are a maximum of seven tetrads in any 100-km square; squares which are predominantly sea, such as SY and NK, have only one tetrad selected. A co-ordinator for each 100-km square will be sent a list of the tetrads that need to be visited, and four arable fields should be surveyed within each tetrad. If there is no arable land within the tetrad, the nearest arable fields to that tetrad should be surveyed. Such an approach is designed to provide a reasonable coverage of the country and statistically robust data that can be analysed in a number of ways; the survey will also be repeatable in the future. Completed recording cards are to be sent to me (Ron Porley).
4. **Selective national survey.** This is the part of the survey where participants can choose which arable fields they survey, provided that they do not duplicate those recorded in the systematic survey, or those that might be done by other participants working in the same area. It is important that we gather qualitative data on organic fields and a variety of crop types, so although surveyors should record any stubble fields which are suspected to hold a good bryophyte flora, they should not focus on them to the exclusion of other arable fields. A recording card should be filled in for *all* fields visited, including those that have few or virtually no bryophytes; if a field margin, stubble field or area of set-aside is poor, we need to know this. If 20 fields are visited before encountering just one that supports some bryophyte interest, then this kind of information is important, and a recording card should be completed.

All the elements of the survey will include determinations of soil pH. We are still investigating the best approach, and may seek funding to procure a limited number of small pH meters that can be used in the field. It is envisaged that other participants will collect soil samples in poly bags and send them to a central point (Centre for Ecology and Hydrology). We are currently taking advice from soil scientists.

A field pack will be sent to recorders as a targeted mail-shot. It will contain full details of methodology and guidance notes on completing the dedicated arable bryophyte recording

card. Production of a 'crib-sheet' is progressing well, with pictures of selected species, tubers, etc. and accompanying text. Jonathan Sleath has been heavily involved in this, and once we have finalised its contents Gill will produce a professional version at the British Museum. Gill will also look into setting up a web site to keep everyone informed of progress during the course of the project. There will be an arable bryophyte workshop in November 2002, at Preston Montford (see pp 41-42 of this *Bulletin*), at which we will review the results of the trial, and have sessions on methodology and species identification. We hope to invite some European arable bryologists to learn from their experiences.

A provisional timetable for the various survey elements is given below:

- winter 2001/2002: pilot systematic survey focussing on three 100-km squares
- spring/summer 2002: assess pilot and modify methodology if appropriate
- November 2002: arable bryophyte workshop
- autumn/winter 2002/2003: launch national systematic and selective surveys
- 2003 - spring 2005: continue surveys
- December 2005: write up results of surveys and submit for publication

The repeat of Trudy Side's survey of arable bryophytes in Kent will commence as soon as recording cards are available and the methodology has been finalised, and should run for two seasons to be consistent with the original survey. The results will constitute a separate publication.

*Ron Porley, English Nature, Foxhold House, Crookham Common, Thatcham, RG19 8EL; e-mail: ron.porley@english-nature.org.uk.*

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## **BBS COMMITTEES AND WORKING GROUPS**

### **Executive Committee**

Members: President, Vice-President, General Secretary, Treasurer.

Terms of reference: To act on urgent matters arising between Council meetings.

Convener: General Secretary.

### **Bequest Committee**

Members: Mr J. Blackburn (Treasurer, *ex officio*), Prof. J.G. Duckett, Mr H.W. Matcham, Mr R.D. Porley, Dr J.D. Sleath.

Terms of reference: To put forward recommendations for administering the fund.

Convener: Mr J.M. Blackburn.

### **Conservation and Recording Committee**

Members: Mr T.H. Blackstock (Recorder for Hepatics, *ex officio*), Dr J. Duckworth, Dr M.O. Hill, Mr N.G. Hodgetts, Dr D.T. Holyoak (Conservation Officer, *ex officio*), Dr N.

Lockhart, Mr R.D. Porley (Recording Secretary, *ex officio*), Dr C.D. Preston, Mr G.P. Rothero (Recorder for Mosses, *ex officio*), Dr F.J. Rumsey.

Terms of reference: The Committee is responsible for recommending policies to the Council for the conservation of bryophytes and their habitats and for the recording activities of the Society, and for supporting the Conservation Officer and the Recording Secretary in their work.

Convener: Dr D.T. Holyoak.

See *Bulletin 76* (February 2001) for further details.

### **Editorial Board**

Members (appointed by the Editor of *Journal of Bryology*): Dr J.W. Bates (Editor), Dr R.P. Beckett, Mr T.H. Blackstock, Mr T.L. Blockeel, Prof. J.G. Duckett, Dr J. Enroth, Dr S.R. Gradstein, Dr L. Hedenäs, Prof. J.A. Lee, Dr D.G. Long, Dr R.E. Longton, Dr R.H. Økland, Dr R.D. Seppelt and Dr A.J. Shaw (Associate Editors), Mr. F.J. Rumsey (Book Review Editor), Dr P.E. Stanley (Indexing and Proof Editor), Mr H.W. Matcham (Proof Editor).

Convener: Dr J.W. Bates.

### **Honorary Membership Committee**

Members: President, General Secretary, previous two Ex-Presidents.

Terms of reference: To advise Council on the nomination of Honorary Members.

Convener: General Secretary.

### **Publications Committee**

Members: Dr J.W. Bates (Journal Editor, *ex officio*, and Secretary), Dr G.C.S. Clarke (Chairman), Prof. J.G. Duckett, Mr J.M. Blackburn (Treasurer, *ex officio*), Mr M. Lawley, Mr M.M. Yeo (Bulletin Editor, *ex officio*).

Terms of reference: The Committee is an advisory group that is responsible for monitoring all of the publishing activities of the Society and for making recommendations to the Council to ensure that the Society's publishing activities meet its objectives and that they are as cost-effective as possible.

Convener: Dr J.W. Bates.

See *Bulletin 77* (July 2001) for further details.

### **Tropical Bryology Group**

Members: Mr N.G. Hodgetts, Dr D.G. Long, Dr A.E. Newton, Mr B.J. O'Shea, Ms M. Price, Mr M.J. Wigginton.

Terms of reference: To promote the study of tropical bryophytes; to involve as many members of the BBS as possible in this activity; and to support bryologists working in the tropics.

Convener: Ms M. Price.

## FRANCIS ROSE AND HIS CONTRIBUTION TO BRITISH BOTANY: 80<sup>TH</sup> BIRTHDAY CONFERENCE

*Saturday 15 June 2002, 11.00 a.m. - 4.00 p.m.*

*Reardon-Smith lecture theatre, National Museum of Wales, Cardiff*

Francis Rose was 80 years old in September 2001, and is widely regarded as one of Britain's most outstanding botanists. We are holding a conference to celebrate the enormous breadth of his contribution to British botany and the length of time over which he has worked. The conference will take the form of a series of short talks on aspects of his work by those he has inspired and worked with, trying to cover the range of his interests. The programme is as follows:

*D. Bellamy:* Francis Rose, an appreciation  
*C.A. Stace:* Francis Rose and the vascular flora  
*P. James:* Francis Rose and lichens  
*J. Bates:* Francis Rose and bryophytes  
*P. Marren:* Francis Rose and local floras  
*D. Lang:* Francis Rose and orchids  
*Speaker to be confirmed:* Francis Rose - the continental connection  
*O. Gilbert:* Francis Rose, lichens and air pollution  
*Speakers to be confirmed:* Francis Rose's contribution to conservation, including Plantlife, local authorities, Wildlife Trusts and statutory agencies  
*A. Jackson:* Francis Rose and Wealden sandrocks conservation  
*P. Harding:* Francis Rose and parks  
*D. Streeter:* The Francis Rose notebooks project  
*T. Rich:* Francis Rose collections and archive at the National Museum of Wales

All are welcome to join us on the day from 10.30 onwards. The conference will be free, and there is no need to book - simply turn up! Further details are available from me.

*Tim Rich, Department of Biodiversity and Systematic Biology, National Museum & Gallery, Cardiff, CF10 3NP; e-mail: tim.rich@nmgw.ac.uk.*

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## TROPICAL BRYOLOGY GROUP: PROGRESS IN 2001

### Tenth anniversary of first TBG tropical expedition

2001 saw the tenth anniversary of the first Tropical Bryology Group (TBG) expedition to Malawi, and we were able to see three more papers published on our Malawi collections, including our sweep-up of outstanding identifications (O'Shea *et al.*, 2001), as well as a treatment of miscellaneous hepatic families (Wigginton & Porley, 2001), and an account of the Lejeuneaceae (Wigginton, 2001). There are still quite a number of unidentified collections, but most await taxonomic revisions before identification can be made.

## **New TBG co-ordinator**

The TBG AGM in September saw the appointment of a new co-ordinator of the Group: Michelle Price. Michelle started as the new curator of bryophytes and pteridophytes at the Conservatoire et Jardin Botanique in Geneva in October 2001, and is also completing her PhD thesis from Missouri Botanical Garden & University of Missouri-St Louis, USA. Her thesis work incorporates revisionary and phylogenetic studies of the tropical genera *Holomitrium*, *Eucamptodontopsis* and *Schliephackea* (Dicranaceae). Formerly an MSc student of Tony (AJE) Smith (topic: ecology of bryophytes in *Polylepis* woodlands, Ecuador), Michelle has been interested in tropical bryophytes for six years and has had field experience in Argentina, Bolivia, Ecuador, Suriname and Puerto Rico. She can be contacted on Michelle.Price@cjb.ville-ge.ch. As most of the business of the TBG takes place via e-mail, a co-ordinator living abroad is not seen as too much of a problem, and we look forward to seeing her on home visits. A first priority will be a review of what we have achieved so far, and what we should be doing next.

## **Uganda - progress towards a bryophyte flora**

The fourth and fifth Uganda publications have appeared (Wigginton *et al.*, 2001; O'Shea & Buck, 2001) and major progress has been made in identifying collections to family level so that they can be distributed to family co-ordinators. The identification of collections to species level is the job of the 33 authors recruited by Jeff Bates for the *Mosses and Liverworts of Uganda* book; they will be supplied with material by the family co-ordinators. Much of the part-identified material still remains to be distributed, but this year should see good progress, and the book is scheduled to be completed towards the end of 2003.

## **E.W. Jones Flora of West African hepatics**

There has been good progress in the latter part of the year, following the TBG AGM in September. Roy Perry kindly agreed to take on the general administration of the project after both David Long and Martin Wigginton felt they would not be able to devote sufficient time to it in the foreseeable future. The National Botanic Garden at Meise again offered to publish the Flora, and this has been accepted in principle. The prospective publishers have agreed that all species should be illustrated, and that it would be acceptable to use existing published drawings. Omer Kerkhove, the artist at Meise, will be preparing new plates for about fourteen species. Martin Wigginton has continued to work on the text, which is now nearly complete. Nick Hodgetts and David Long are revising some genera. It is hoped that the manuscript with the drawings all completed will be ready to send to the press during 2002.

## **Guide to bryophytes of sub-Saharan Africa**

Very little progress was made in 2001 on this project to produce an illustrated guide to the families and genera of African bryophytes, mainly due to other distractions, in particular the deadline on identifying Uganda collections. However, we are about half way through and hope to make better progress during 2002. A guide to the bryophytes of tropical America was published during the year (Gradstein *et al.*, 2001), and we would be extremely pleased if we could produce something as good.

## Membership and Newsletter

There is no need to have been to the tropics to become a member of the TBG: membership is open to all members of the BBS. All you need is to want to extend your knowledge into this area - just let the co-ordinator know, and you will be added to the circulation list for the Newsletter, which is produced once a year, usually in August. Participation in TBG activities also doesn't necessarily mean participating in collecting expeditions, and there are several UK-based TBG members who are participating in both the Malawi and Uganda work despite having never been to the tropics. There is an extensive area on the BBS web site covering our activities - select 'Tropical Bryology Group' from the home page.

## References

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## THALLOID LIVERWORT ON AN INVOLUNTARY SUB-AQUATIC PERIPATETIC SUBSTRATE IN WALES

R.G. WOODS

*Countryside Council for Wales, Eden House, Ithon Road, Llandrindod Wells, Powys, LD1 6AS*

Botanical surveys of army training areas, and in particular the Epynt Ranges to the south-west of Builth Wells in mid Wales, are never boring. Despite the compulsory health and safety briefings and the assurances that 'live' firing will not be occurring in your area of survey, you are never quite prepared for the sudden sharp cracks of automatic weapons, the blast of a thunder flash, or the drifting clouds of coloured smoke. You may be 300 metres away and have rehearsed your survey strategy with the exercise commander to keep yourself as far removed as possible from the unseen well-camouflaged platoon somewhere out there in the

rushes, but warfare never fails to raise the hairs on the back of my neck.

The knowledge that the clumps of rushes, amongst which you are about to diligently search for Slender Green Feather-Moss *Hamatocaulis vernicosus*, might get up and crawl away stuffed as camouflage in a soldier's helmet and pack adds an extra frisson to the search. I was trying to plot the distribution of this moss prior to designating a statutory conservation area for it. Due to the ability of this moss to camouflage its identity amongst other more common look-alikes, such as *Warnstorfia exannulata* and *Drepanocladus cossonii*, I had brought an old monocular microscope out with me. Never having attempted to cut stem sections in the field before, and finding it difficult enough in the lab, I was delighted to find it quite achievable, an old field bank substituting for the lab bench. In a single visit in the midst of a 21<sup>st</sup> century military battle I had confirmed the presence and extent of *H. vernicosus* and would not need to trouble the army again.

Well-pleased, I allowed myself a small diversion to check on the health of an already notified Special Area of Conservation nearby. The Afon Offeriad is famous for its European freshwater crayfish. Mid Wales as a whole was once famous for its crayfish but a combination of circumstances, probably not entirely unrelated to the needs of the 11,000,000 sheep in Wales, has decimated this population. Sheepdip and agricultural and forestry drainage works are the prime suspects. Miraculously, the upper reaches of the Offeriad have escaped both. The army, taking over the farms on the Epynt at the start of the Second World War, effectively halted agricultural drainage, and forestry plantations are small. Although sheep-grazed, the area is remote from dipping locations, giving sheep the opportunity to drip dry before paddling in the streams.

The peaty headwater flushes favoured by the *Hamatocaulis* buffer the flows of water into the Offeriad and create a stream totally different in character from those nearby which receive water from agriculturally drained catchments. Here the stream is narrow and deep with well-vegetated banks. Its bed consists of small rocks and clean gravel. The regular silt-laden torrential flows of the intensively farmed catchments create broad and, for most of the time, shallow channels, which due to the scouring action of increased bed load in the regular floods are all but unvegetated. Not so the Offeriad. *Chiloscyphus* sp. forms large semi-submerged mats whilst the tops of the boulders submerged in the deeper pools all carry deep green, crisp swags of the thalloid liverwort *Riccardia chamedryfolia*. In attempting to photograph these boulder-top colonies my eye was drawn to the slow jerky movement of a number of smaller rectangular colonies of this liverwort resting 30 cm down on the sandy bed of the pool. Mobility in anything but anthozoids in liverworts was a new concept to me. Retrieving a specimen, the propulsive force was quickly identified. It was the larva of a caddis fly (Trichoptera). Each had encased itself entirely in a sheath of evenly matched lobes of the thallus of the *Riccardia*. All the lobes appeared healthy, there being no apparent difference between the upper and lower surfaces of the tube that must perhaps be regularly rotated. As a means of camouflage it was not a great success when faced by a primate. The 'native' *Riccardia* was confined to the boulder tops. All the bits of *Riccardia* not on the boulders (and there were a great many) proved to be affixed to caddis cases, so readily identifying them. The caddis could, however, be considered to have significantly extended the range of this liverwort. If this particular caddis affixes its case to suitable solid substrates to pupate it might become a significant vector in the vegetative spread of this species of thalloid liverwort.

## HAROLD WHITEHOUSE'S EARLY YEARS

The following account is based on an address given on 26 January 2000 at the funeral of Dr Harold Whitehouse (1917-2000) by his younger brother, Roger. Roger gave his address from brief notes, but he has written out this version for us, adding an additional anecdote about the 'Ecological Experiment'. We thank him for providing this insight into Harold's early life.

Harold was a war-time baby, born in the bleak days when news from the trenches was bad and food was short. For his parents his arrival must have been a herald of better times to come, and better times did come. I can only give you scattered recollections of Harold's life in the 20s and 30s through the eyes of a younger child.

Harold was different from other boys of the village and from many at school. He had an enquiring mind and applied it diligently to a wide range of subjects ... an early portent of what was to come. For some reason he was interested in words ending in -ology (ge-, bi-, but I doubt if bryology was one) so he settled down to turn all the pages of a dictionary listing the words in his neat handwriting which, incidentally, changed little for 70 years.

There was a planting of shrubs in the village the names of which he wanted to know but the labels were often hidden, so I became his willing accomplice, climbing the fence for better access and rather shakily reading *Berberis stenophylla* which was duly added to the growing list. If there are lilies in Heaven he will certainly be checking their species.

He wanted to find where the starlings went to roost at night so initiated his first research programme at school, engaging other boys to watch for flocks and to report their observations which he plotted on a map pinned to the school notice-board. The results were published in what the science master, his Father, rather grandly called the Philosophical Transactions.

Against a brick wall, by the backdoor of the family home, the ash and cinders from the coal fires were piled before being used to make garden paths. A wooden notice (probably burnt with a red-hot poker tip) appeared there bearing the legend 'ECOLOGICAL EXPERIMENT'. The succession of colonists through bryophytes, ferns and small flowering plants was no doubt duly recorded.

Harold's childhood was certainly not all a matter of study. He enjoyed the activities of family cycling/camping holidays (the family had no car until the late 30s) in Wales and the south-west. He sometimes went alone to the beach for a bathe before breakfast. There were occasions when he would slip into his other world of thought from which his mother would prompt a return when the plate he was drying was thoroughly done but the cloth was still going mechanically round and round. His life had many facets ... there was much exploration of the countryside by bicycle and, in the colder winters we had then, there was skating on local village ponds.

Most of all I was aware that Harold had a clarity of mind which enabled him to make difficult things simple. It was to him that I often turned for help, which was always

freely given. For that, if for nothing else, I owe him a lot, probably a career. That clarity still shines forth from his books.

Finally, although this is a sad occasion, I like to remember another aspect of Harold's character: his sense of humour, albeit a dry one. This was best illustrated for me when, in later years, we were both in Montreal for a genetics symposium. Returning on foot to the University one night with him and a friend (Jack Crosby?) I had to jump for the kerb as a taxi cut us close. The friend remarked to Harold 'you nearly lost your brother then' to which the INSTANT response was 'that's all right, I have another one at home'. I am happy to say that, as you have seen, the other one [Arthur Whitehouse] is with us today.

CHRIS PRESTON

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## THE *DREPANOCLADUS ADUNCUS* GROUP IN BRITAIN AND IRELAND

MARK O. HILL

*Centre for Ecology and Hydrology, Monks Wood, Abbots Ripton, Huntingdon, PE28 2LS*

A recently published monograph of the *Drepanocladus aduncus* group by Żarnowiec (2001) recognises three taxa in Britain and Ireland, with the characteristics indicated in the table.

	<i>D. polycarpus</i> (Bland. ex Voit) Warnst.	<i>D. aduncus</i> (Hedw.) Warnst.	<i>D. stagnatus</i> Żarnowiec
Leaf length (mm)	(0.7)-1.0-2.5(-4.0)	(1.7)-2.4-4.1(-4.8)	4.2-5.2(-6.0)
Leaf form	Ovate-triangular, falcato-secund	Usually falcate, ovate- lanceolate	Straight or slightly falcate, ovate- lanceolate
Length of mid lamina cells (µm)	(29-)35-50(-59)	(71-)80-105(-118)	134-147
Habitat	Normally terrestrial, sometimes aquatic	Terrestrial or aquatic	Exclusively aquatic

Both *D. polycarpus* and *D. aduncus* have enormous world distributions, being circumpolar and also occurring widely in the Southern Hemisphere. In the scheme of Hill & Preston (1998), *D. polycarpus* would be classed as circumpolar wide-boreal and *D. aduncus* as circumpolar boreo-temperate. *D. stagnatus* is confined to Europe, with a suboceanic temperate distribution. The fourth species of the group, *D. capillifolius*, has not been found in Britain or Ireland. It can immediately be recognised by its excurrent nerve.

I have examined a dozen specimens labelled as *D. aduncus* in my herbarium. Two of them appeared possibly intermediate between *D. aduncus* and *D. polycarpus*, eight were *D. polycarpus*, and two were *D. aduncus*. I have not collected anything conforming to the description of *D. stagnatus*, and a well-known bryologist tells me he does not find it particularly convincing. It is an aquatic plant not known to produce sex organs; its description sounds more like that of a variety than a species. The immediate need is to find modern specimens from Britain and, preferably, to cultivate them to determine whether the defining characters are stable.

Clearly, we sceptical British need to find out whether we can comfortably accept the revision of *D. aduncus*. The almost complete lack of overlap in several 'soft' characters reported by Żarnowiec seems on the face of it rather improbable. In an analogous study of the *D. sendtneri* complex, Hedenäs (1998) found that ratios of cell lengths to leaf lengths were more reliable than absolute lengths. On the other hand, I can confirm that absolute cell lengths provide a generally reliable way of distinguishing *Warnstorfia fluitans* from *W. exannulata*. The best way of checking Żarnowiec's scheme is to try it out. This I now propose to do.

While I have no intention of making a full revision of the *D. aduncus* group in Britain and Ireland, I am willing to examine recent (post-1950) specimens that can provide new or updated vice-county records. In the following lists, my own records have been combined with those checked by Żarnowiec. I have discarded Żarnowiec's records if they were not adequately localised, and have made no effort to chase up the specimens in such cases. *D. stagnatus* was the most affected by this; five records out of nine were inadequately localised.

The following specimens have been confirmed by me or Żarnowiec. In checking whether Żarnowiec's records could be localised, I have corrected some spelling mistakes and assigned several records to 10-km squares.

***Drepanocladus polycarpus***, Camborne, (1 in ()), 1863, W. Curnow (G); Saunton Sands, (4), 1956, G.L. Wallan 3381 (NICH); Berrow near Burnham, (6 in ()), 1916, C.P. Hurst (E); Tottenham Park near Great Bedwyn, SU26, (7 in ()), 1920, C.P. Hurst (E); by pond in clayey meadow, East Stour Common, ST82, (9), 1969, M.O. Hill (herb. M.O. Hill); Lewes, (14 in ()), 1898, W.E. Nicholson (E); Canterbury, (15 in ()), 1903, H.N. Dixon (E); *Typha* swamp in small wood, Southminster, TQ99, (18), 1968, M.O. Hill (herb. M.O. Hill); Colchester, (19 in ()), 1875, T. Durand (BR); Holton stone pits, (23 in ()), 1912, P.G.M. Rhodes (BM); damp hollow in field on clay, Knapwell, TL36, (29), 1964, M.O. Hill (herb. M.O. Hill); Towcester, (32 in ()), 1898, H.N. Dixon (E); Ditherington, Shrewsbury, SJ51, (40 in ()), 1901, W.R. Hamilton (E); sandy pasture subject to frequent inundation, near Portmadoc, SH53, (49), 1969, M.O. Hill (herb. M.O. Hill); damp path in wood, Nant Alyn, SJ16, (51), 1972, M.O. Hill (herb. M.O. Hill); margin, Bosley Reservoir, (58), 1976, D.G. Long 4820 (E); Ainsdale Hills, (59), 1973, A.R. Perry (G); nr Catterall, SD44, (60 in ()), 1900, H. Wilson (DUKE); Strensall, (62 in ()), 1902, Ingham (E); Lindley Wood Reservoir, NE of Otley, (64), 1986, D.G. Long 13934 (E); Colt Crag Reservoir, (67), 1971, D.G. Long 1659 (E); disused lime-works, Kelhead, NY16, (72), 1961, A.R. Perry (NICH); Loch Ken, New Galloway, (73 in ()), 1894, J. McAndrew (E); Stobshiell Reservoir, near Gifford, (82), 1974, D.G. Long 3630 (E); W of South Queensferry, (84 in ()), 1911, J. McAndrew (E); Tentsmuir, (85 in ()), 1891, J. Hulton (E); near Killin, (88 in ()), 1916, J.C. Adam (E); bogs, near Auchenblae, (91 in ()), 1871, G.E. Hunt (E); Gruinard Bay, (105), 1960, A.C. Crundwell (DUKE); Sinclair's Bay, Ackergill Links, (109), 1974, D.G. Long 3742 (E); roadside gravel, W of Scalloway, HU33,

(112), 1974, M.O. Hill (herb. M.O. Hill); Portmarnock, (H21 in ()), 1916, D.A. Jones, P.G.M. Rhodes & E. Cleminshaw (E); in pool, Glastry, Kircubbin, (H38 in ()), 1906, J. Glover (E).

*Drepanocladus aduncus*, Braunton Burrows, (4), 1983, S.L. Jury, H.J. Moss & F.J. Rumsey 600a (BR); floating in ditch, Navestock Common, TQ59, (18), 1968, M.O. Hill (herb. M.O. Hill); High Easter, TL61, (19 in ()), 1903, J. Chittenden (FH); Staines, (21 in ()), 1900, E.F. Shepherd (DUKE); Hereford, (36 in ()), 1920, C.H. Binstead (DUKE); large bog, S of Barry, (41 in ()), 1921, D.R. Robertson (E); W of Cleddau, SM91, (45 in ()), 1923, R. Jackett (BR); Harlech, (48), 1970, D.G. Long 1053 (E); damp depression in field, inland from Porth Wen nr Amlwch, SH49, (52), 1974, M.O. Hill (herb. M.O. Hill); New Ferry, SJ38, (58 in ()), 1924, J.A. Wheldon (BM); Hightown, SD20, (59 in ()), 1911, J.A. Wheldon (BR); Tillmire, SE64, (61 in ()), 1906, W. Bellerby (FH); Coatham Marshes, NZ52, (62 in ()), 1901, W. Ingham (E); Knottingley, SE42, (63 in ()), 1901, W. Ingham (E); Gullane Bay, (82 in ()), 1904, J. McAndrew (E); curling pond, Roslin, (83 in ()), 1922, W. Evans (E); near Crail, (85 in ()), 1905, J. McAndrew (E); Bird's Island, Lough Neagh, (H37 in ()), 1886, C.H. Waddell (E).

*Drepanocladus stagnatus*, gravel pits, Beckenham Place, TQ37, (16 in ()), 1902, Cocks (BM); Preston, (60 in ()), 1903, H. Beesley (E); pond, Selby, (61 in ()), 1913, W. Bellerby (BM); White Oak Pond, Holderness, (61 in ()), 1886, E. Faxon (NY).

These records give vice-county distributions as follows:

*Drepanocladus polycarpus*: (1), 4, (6, 7), 9, (14, 15), 18, (19, 23), 29, (32, 40), 49, 51, 58, 59, (60, 62), 64, 67, 72, (73), 82, (84, 85, 88, 91), 105, 109, 112. H (21, 38).

*Drepanocladus aduncus*: 4, 18, (19, 21, 36, 41, 45), 48, 52, (58, 59, 61-63, 82, 83, 85). H (37).

*Drepanocladus stagnatus*: (16, 60, 61).

During 2002, I shall be happy to receive vouchers for additional or updated vice-county records. It would be best if I could retain them for sending on to the BBS herbarium (BBSUK). Let me know if you want them back.

## References

- Hedenäs L. 1998. An overview of the *Drepanocladus sendtneri* complex. *Journal of Bryology* 20: 83-102.
- Hill MO, Preston CD. 1998. The geographical relationships of British and Irish bryophytes. *Journal of Bryology* 20: 127-226.
- Żarnowiec J. 2001. *A taxonomic monograph of the Drepanocladus aduncus group (Bryopsida: Amblystegiaceae)*. Bielsko-Biała: Łódź Technical University.

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## REFEREES (JANUARY 2002)

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 to 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 Tim Blackstock for hepatics (Countryside Council for Wales, Plas Penrhos, Ffordd Penrhos, Bangor, Gwynedd, LL57 2LQ) or Mr Gordon Rothero for mosses (Stronlonag, Glenmassan, By Dunoon, Argyll, PA23 8RA).

The numbers below refer to genera in *A Check-list and Census Catalogue of British and Irish Bryophytes* by T.L. Blockeel & D.G. Long (1998).

#### GENERAL REFEREE

H.W. Matcham, 21 Temple Bar, Strettington, near Chichester, W Sussex, PO18 0LB.

#### HEPATIC REFEREES

- 1, 64-69, 75-82:** Dr M.E. Newton, c/o Department of Botany, Liverpool Museum, William Brown Street, Liverpool, L3 8EN. (All mail to be marked 'Private'.)
- 2-5, 9, 11-17, 52:** T.L. Blackstock, Countryside Council for Wales, Plas Penrhos, Ffordd Penrhos, Bangor, Gwynedd, LL57 2LQ.
- 6-8, 10, 18, 19, 32, 36-38, 50, 51, 53, 83-86:** D.G. Long, Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR.
- 20-29, 39, 45, 46:** M.F.V. Corley, Pucketty Farm Cottage, Faringdon, Oxfordshire, SN7 8JP.
- 30, 31, 33-35, 47-49, 70-74:** G.P. Rothero, Stronlonag, Glenmassan, By Dunoon, Argyll, PA23 8RA.
- 40-44, 54-63:** N.G. Hodgetts, 55 Norton Street, Grantham, Lincs, NG31 6BX.

#### MOSS REFEREES

- 1-10, 156-160:** Dr M.O. Hill, Monks Wood Experimental Station, Abbots Ripton, Huntingdon, PE17 2LS.
- 11-33:** G.P. Rothero, Stronlonag, Glenmassan, By Dunoon, Argyll, PA23 8RA.
- 34, 35, 67-70, 187-195:** Dr A.J.E. Smith, School of Biological Sciences, Brambell Building, University College of North Wales, Bangor, Gwynedd, LL57 2UW.
- 36, 71-89, 104-111:** N.G. Hodgetts, 55 Norton Street, Grantham, Lincs, NG31 6BX.
- 37-66:** Dr D.F. Chamberlain, Royal Botanic Garden, Inverleith Row, Edinburgh, EH3 5LR.
- 90-98, 112, 175-186:** Dr D.T. Holyoak, 8 Edward Street, Tuckingmill, Camborne, Cornwall, TR14 8PA.
- 99-103:** A. Orange, Department of Biodiversity & Systematic Biology, National Museum & Gallery Cardiff, Cathays Park, Cardiff, CF1 3NP.

**113-146:** R.D. Porley, English Nature, Foxhold House, Crookham Common, Thatcham, Berkshire, RG15 8EL.  
**147-155, 161-174:** T.L. Blockeel, 9 Ashfurlong Close, Dore, Sheffield, S17 3NN.

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## **PROGRESS WITH THE SOUTH LANCASHIRE (VC 59) FLORA ... AND A PLEA FOR HELP**

The forthcoming Flora of South Lancashire (VC 59) will include bryophytes as well as vascular plants and other groups. Several BBS members have kindly sent us records, and local recorders have been working hard. A dozen or so species have been found new to the vice-county and about twice as many re-found for the first time since the nineteenth century. Considerable effort has gone into recording urban areas, with some interesting results; *Tortella tortuosa*, for example, is widespread on limestone rockeries in parks and gardens. We have been greatly encouraged to see the recovery of epiphytes, such as *Ulotia* spp.; *U. phyllantha*, for example, was unknown in the early 1990s but is now common.

Most tetrads in the vice-county have now been visited at least once, but it would be foolish to suppose that coverage is anything like complete. Moreover, since most areas are covered by only one recorder it is always a concern that we might be overlooking or under-recording some species; records from other bryologists would help us to assess such problems, as well as swelling the records generally. We would therefore be very grateful for any VC 59 records that BBS members could provide, even short or old lists.

Please send details of records to J. Lowell, 37 Henley Avenue, Cheadle Hulme, Cheshire, SK8 6DE; e-mail: lokr@beeb.net.

J. LOWELL & M.E. NEWTON

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## **CHANGES TO THE MEMBERSHIP LIST, JANUARY 2002**

### **CHANGES OF ADDRESS AND AMENDMENTS**

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**Brealey**, Ms H: see **d'Ayala**  
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**Cargill**, Dr D Christine, Australian National Botanic Gardens, GPO Box 1777, Canberra, ACT 2601, Australia, (O), (1999)  
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**Cliffe**, Miss K: see **Childerhouse**  
**d'Ayala**, Mr R, 54 Fleetway, Didcot, Oxon, OX11 8DA, UK, (F), (1999)  
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**Dirkse**, G M, Kromme Elleboog 26, 6511 ZA Nijmegen, The Netherlands, (O), (1979)  
**Hartley**, Miss M M, County House, Garrigill, Alston, Cumbria, CA9 3EZ, UK, (O), (1965)  
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**May**, Mr P J C, 17 Evelyn Road, Lewes, East Sussex, BN7 2SS, UK, (O), (2000)  
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 (1980)  
**Price**, Michelle, Conservatoire et Jardin Botanique, Case Postale 60, CH-1292 Chambésy-  
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**Smith**, Mr T, 59 Queen Street, Horncastle, Lincolnshire, LN9 6BH, UK, (O), (1991)  
**Spare**, Mr R, The Old Dame's Cottage, Cove, Tiverton, Devon, EX16 7RX, UK, (O), (1957)  
**Vanderpoorten**, Mr A, Universitaire Catholique de Louvain, Unité d'Ecologie &  
 Biogéographie, 4-5 Place Croix du Sud, B-1348 Louvain-la-Neuve, Belgium, (S),  
 (1995)

#### NEW MEMBERS

**Dowell**, Ms J, 22 County Street, Totterdown, Bristol, BS4 3AG, UK, (O), (2001)  
**Gray**, Mr Alan, The Gatehouse, Bonkyl Lodge, Preston, Duns, Berwickshire, TD11 3TG,  
 UK, (S), (2001)  
**Maclean**, Ms Sandra, 2 Skelbo Farm Cottages, Near Dornoch, Sutherland, IV25 3QG, UK,  
 (O), (2001)  
**Matthews**, Ms Anne, 16 Culbin Sands, Findhorn, Forres, IV36 3QZ, UK, (O), (2001)  
**Roberts**, Mr D M, 1 Barley Close, Frampton Cotterell, Bristol, BS36 2ED, UK, (O), (2002)  
**Skinner**, Mr R, 13 Petercroft Lane, Dunnington, York, YO19 5NQ, UK, (S), (2001)  
**Smith**, Dr P Lister, Halcrow Group Ltd, Llanthony Warehouse, The Docks, Gloucester, GL1  
 2NS, UK, (O), (2001)  
**Wallis**, Mr H W, 25 Langton Avenue, Ewell, Epsom, Surrey, KT17 1LD, UK, (O), (2001)  
**Wilson**, Judy, Martins, School Lane, North Mundham, Chichester, West Sussex, PO20 6LA,  
 UK, (O), (2001)

#### DECEASED

**Malloch**, Dr A J C, Dept of Biological Sciences, The University, Bailrigg, Lancaster, LA1  
 4YQ, UK, (O), (1966)  
**Newman**, Mr W J, 84 High Street, Ibstock, Leicestershire, LE67 6LH, UK, (O), (1966)

#### REINSTATEMENT

**Seddon**, Ms A, Henardd, Llanfachreth, Dolgellau, Gwynedd, LL40 2NF, UK, (O), (1999)