

The moss year - 2014

After the flurry of activity of recording for the new Atlas, it was expected that the number of new records would fall in subsequent years. This was reflected in the records received in 2014. The number of new records and post-1960 updates ('debrackets') was 253, compared with 363 in 2013. However the total number of amendments to the Census Catalogue was boosted by a large number of deletions and bracketings identified after cleansing of BBS data in preparation for the Atlas (see further below). For mosses, therefore, the total number of additions and amendments to the Census Catalogue in 2014 was 437. These break down as shown in the table below.

Additions to the British and Irish list

Two mosses were published as new to Britain and Ireland during 2014. Sam Bosanquet's discovery of *Crossidium squamiferum* (Viv.) Jur. on the Isle



of Wight (Bosanquet, 2014) was included in last year's Report. The other addition was *Dicranum spadiceum* J.E. Zetterst., which Gordon Rothero and Nick Hodgetts have found at two localities in South Aberdeenshire (Rothero, 2014). *D. spadiceum* is a Boreo-arctic Montane moss, and its presence in Scotland fits with its fairly common occurrence in Scandinavia. There had been previous reports of it in Britain (as a variety of *D. scoparium*), but these are all thought to be incorrect.

	2014				2013			
	England	Wales	Scotland	Ireland	England	Wales	Scotland	Ireland
New entries	69	16	44	55	85	41	62	61
Debrackets*	29	2	18	20	42	8	17	47
Reinstated	–	–	–	–	–	–	3	–
Bracketings†	43	3	29	6	1	–	–	–
Deletions	48	6	36	13	14	3	5	–
Totals	189	27	127	94	142	52	87	108

(*Debrackets are existing vice-county entries for which a post-1960 record has been vouched. Bracketings are existing entries for which the post-1960 records are unconfirmed or erroneous but older record(s) are known or thought to be valid.)



<Fig. 1: The cliffs of Gormagh, South Kerry. R.L. Hodd

The moss year 2014

The reduction in the quantity of new records in 2014 was certainly not accompanied by any reduction in quality. Especially notable was David Long's rediscovery in Scotland of *Cratoneuron curvicaule* on Ben Lawers (Mid Perthshire), the first British record since 1913. Two other good records on the Lawers range during the summer BBS meeting in July were *Grimmia anomala*, refound at Lochan nan Cat, one of its four known Scottish sites, and *Pohlia andalusica*, found by Mark Lawley on Meall Corranaich. This is only the second Scottish record of the *Pohlia*, the earlier one also being from a montane site. Perhaps *P. andalusica* is overlooked in the uplands. Another exciting find in Scotland in 2014 was the rediscovery of the extraordinary *Seligeria carniolica* at the Black Burn, Newcastleton (Roxburghshire), during a meeting arranged after the autumn AGM in Edinburgh. The Black Burn was one of two known British sites and the only one in Scotland. It had never been refound there since its original

discovery in 1948, and had been feared lost. Not only was it refound there, but a new site was located nearby. During the AGM weekend, Des Callaghan found *Hedwigia ciliata* var. *leucophaea* at Traprain Low (East Lothian). This variety has very few British localities, but recent research suggests that it is not genetically uniform in Europe and that its characters can be developed independently in other species (Buchbender *et al.*, 2014). Nick Hodgetts has extended the range of *Sanionia orthothecoides* to the north coast of Skye, the first record from the Inner Hebrides. Other good finds in the Scottish uplands were *Andreaea megistospora* in Glen Falloch (West Perthshire), and *Bryum muehlenbeckii* and *Brachytheciastrum trachypodium*, both on Bidean nam Bian (Main Argyll), the latter at its fourth Scottish and British site. *Didymodon nicholsonii*, on the other hand, is very much a lowland species known to have spread extensively in southern Britain and Ireland, taking advantage of old tarmac. In Scotland previous records were restricted to the south-east, with an outlying record in Orkney. Mark Pool has now added a record from Banffshire, on the concrete steps of a mausoleum, remote from any previously known sites.

Ireland again produced a good number of records, aided by some excellent contributions from Rory Hodd. His *Grimmia longirostris* from Lough Uggabeg (West Galway) is the first Irish record since 1951, and *Hygrohypnum duriusculum* from Coomloughra (South Kerry) is only the second recent record for Ireland and the first in the South-west since 1897. Also notable in South Kerry is *Ditrichum zonatum* on high ground on Carrauntuohil. The cliffs of Gormagh (North Kerry) have produced some outstanding

records, including *Encalypta ciliata* (third modern Irish record) and *Distichium inclinatum* growing unusually in a montane habitat (Fig. 1). Another very scarce Irish species, *Campylostelium saxicola*, turned up in woodland at Eagle's Nest, also in North Kerry. *Sphagnum platyphyllum* in a flush above Glenkeel Lough (West Cork) is only the second record for the southern half of Ireland. Two finds of *Dicranodontium uncinatum* in North and South Kerry are of a curious dense form which appears rather different from populations further north. Clearly we still have lot to learn about the rich and fascinating flora of South-west Ireland.

In England epiphytes have continued to provide surprises. One of the star finds was Des Callaghan's tuft of *Orthotrichum acuminatum* in Herefordshire, a welcome second British record, ten years after the first find in Derbyshire. Other *Orthotrichum* species continue to expand their range. *O. speciosum* was found in Dorset, and *O. pallens* at four new sites, from West Sussex north to South-west Yorkshire. *O. pallens* is one of the more difficult *Orthotrichum* species to detect in the field, especially when the capsules are old, and it is likely to be significantly under-recorded. Among the more improbable records of epiphytes were two from the East Midlands, *Antitrichia curtispindula* in scruffy woodland by the ring road in Derby, and a tuft of *Ulotia coarctata* in DH Lawrence country near Nottingham. After the discovery of *Ulotia calvescens* in the Pennines in 2013, it has been found to be widespread in southern England, with new records from East Cornwall, Dorset, East and West Sussex, Surrey and Buckinghamshire, as well as one in the Midlands (Warwickshire). It is perhaps not surprising that it occurs so widely in southern Britain, as it extends to southern Portugal in continental Europe. Johnny Turner's rediscovery of *Ulotia drummondii* at Hebden Bridge (South-

west Yorkshire) at its southernmost site in England is also of special note. *Pylaisia polyantha* continues to spread, with new records in West Suffolk and Staffordshire. Sean O'Leary's record of *Neckera pumila* in north Buckinghamshire is also notable, one of very few recent occurrences in England north of London.

South-east England produced some excellent records partly due to the diligence of Tom Ottley. Roofing tiles have proved to be a very rewarding habitat, and this year's batch of species included *Grimmia laevigata*, *Racomitrium lanuginosum* and *Hedwigia stellata* in East Sussex. The practice of re-roofing with modern tiles makes this a threatened habitat (stone tiles are a valuable commodity that can be sold on at profit). Other good finds by Tom were *Sphagnum molle* at Stedham Common (West Sussex), *Gymnostomum viridulum* at Glynde (East Sussex, a rare occurrence on chalk), and *Ephemerum sessile* and *Weissia rostellata* on exposed mud near Horsham (West Sussex). In Surrey, Howard Wallis made the notable discovery of *Ptychomitrium polyphyllum* at Pitch Hill, a species otherwise known in South-east England only from a few sites in West Sussex. During the BBS spring meeting the range of *Dicranum fuscescens* was extended to West Kent, and during the same meeting Sam Bosanquet did not take long to detect *Sematophyllum substrumulosum* in Ashdown Forest (East Sussex). Following this lead, Tom Ottley has found it in a number of additional sites in the vice-county. More unexpected was Des Callaghan's record of it in Sutton Park (Warwickshire), a big jump northwards in England. *S. substrumulosum* often occurs on otherwise dull conifer logs and is easily overlooked. It could prove to be widespread in southern Britain.

Further afield in southern England, *Grimmia dissimulata* has turned up at further sites on



△Fig. 2: Habitat of *Ephemerella readeri*, Ladybower Reservoir. T.L. Blockeel

churches and in churchyards in South Somerset, West Sussex and West Norfolk. Most recent records of *Dialytrichia saxicola* have been from the Thames catchment, but Andrew Branson has now located it near the R. Yeo in Dorset. A curious record from Cambridgeshire was *Pogonatum urnigerum* from hoggin in a car park. It may have been brought in with granite gravel, or could perhaps be a natural colonist.

Further north in England, the highlight was a third British record of *Ephemerella readeri*, from Ladybower Reservoir (Derbyshire). Although similar to *Aphanorrhagma patens*, the plants at Ladybower attracted attention because the delicate capsules containing dark spores and emerging through a dense patch of *Pseudephemerum nitidum* superficially suggested a liverwort until examined closely. Also in Derbyshire was another new site for *Tortula amplexa*, in a characteristic habitat in an old clay pit, and it was subsequently found in an arable field not far distant. It had been expected to occur in South Derbyshire, as the original Leicestershire site is only just over the county boundary. New sites for *Hamatocaulis vernicosus* in England are always welcome; its occurrence in a boggy field to the north-west of Sheffield (South-west Yorkshire) is only the second

modern site for the southern Pennines. *Isothecium holtii*, another very rare species in the southern Pennines, was discovered by Johnny Turner at Hebden Bridge (also South-west Yorkshire), and he refound *Rhytidiadelphus subpinnatus* at an old 19th century site by the River Wharfe near Bolton Abbey (Mid-west Yorkshire). Fiona Cameron's *Dicranum polysetum* from Borrowdale (Cumberland) is the first record of this scarce species from the Lake District.

There were rather few new records from Wales this year. Several good records emerged from increased activity in Glamorganshire. Richard Lansdown found *Leptodontium gemmascens* on thatch at Cosmeston Mediaeval Village, new to Wales, and Barry Stewart made a second British record of *Syntrichia montana* var. *calva*, on this occasion as a ruderal moss on tarmac. *Splachnum sphaericum*, a species that seems to be on the decline, was found at Cefn Hirgoed West. Kathryn Birch's record of *Sphagnum strictum* from Caernarvonshire was only the second site for Wales - a third site followed not long afterwards in Merioneth.

Some bryophytes are rarely recorded, not just because they are scarce but because they are easily overlooked or are difficult to identify. They are bryophytes for the connoisseur. So it is

good to see two records of *Bryum intermedium* in this year's list, from sandy soil in Anglesey and Berwickshire. There are only 26 post-1990 hectads for this species in the new Atlas. *Bryum riparium* has even fewer post-1990 hectads (only 16), but now David Long has turned up a new site in Peeblesshire. David also collected *Andreaea mutabilis* in Peeblesshire (Fruid Water), another species that seems to have a low profile. *Platyhypnidium lusitanicum* is well-known from Wales and some parts of England, but records in Scotland have always been sparse and scattered. New records from Roxburghshire and Main Argyll suggest that it remains under-recorded there.

Ceratodon conicus is a moss that was feared lost from the British flora, though it is a taxonomically difficult species. An account of its discovery by Peter Martin on a brownfield site in Bristol (West Gloucestershire) has already appeared in *Field Bryology* (Martin, 2014). This material lacked capsules but was confirmed as distinct from *C. purpureus* by DNA analysis. Interestingly, not long afterwards, John Minney and Rachel Carter found a new site in a more traditional habitat for *C. conicus* on calcareous ground in a sand and gravel quarry in Northamptonshire, this time with capsules. Morphologically these plants matched *C. conicus* on both vegetative and sporophyte characters. The status and identification of *C. conicus* certainly needs further study, but it seems that is not yet time to read its epitaph.

Recent years have seen many records of *Didymodon acutus* from weedy habitats on gravelly roadsides and crumbling concrete, as well as in old quarries and pits. The taxonomy of these specimens is problematic. It is possible that the true *D. acutus* does not occur in Britain or Ireland, and that all our records should be assigned to *D. icmadophilus* (Jan Kučera, pers.

comm.), although *D. icmadophilus* itself includes a number of different genetic taxa. The latest vouchers of ruderal '*D. acutus*' (East Yorkshire and Roxburghshire) are therefore reported in this year's list as *D. icmadophilus*, but this should not be taken to mean that they are different from previous records of *D. acutus* from such habitats.

New vice-county records and amendments

Vouchers are deposited in the BBS herbarium (BBSUK) unless otherwise stated. Other herbarium abbreviations are **DBN** = National Botanic Garden, Glasnevin, Dublin; **E** = Royal Botanic Garden, Edinburgh; **NMW** = National Museum of Wales, Cardiff.

- 1.4.b. *Sphagnum palustre* var. *centrale*. 97:** wet ground in area of late snow-lie, 1100 m alt., Garbh Choire, Ben Alder, NN49907084, N.G. Hodgetts 8406, *conf.* M.O. Hill.
- 1.6. *Sphagnum squarrosum*. H1:** in flush system, 550 m alt., in stream valley feeding into Derrymore Glen from the east, Q74930859, R.L. Hodd (DBN).
- 1.8. *Sphagnum fimbriatum*. H17:** wet conifer plantation, Mount Mary, M73895746, J.L. Denyer (DBN); **H17:** in extensive bog/fen complex, Coolanilaun, Menlough, M27462935, R.L. Hodd (DBN).
- 1.9. *Sphagnum girgensohnii*. H2:** in *Molinia* dominated flush near Galway's River, Ullans, V9182480038, R.L. Hodd (DBN).
- 1.10. *Sphagnum russowii*. H2:** in dry heath under crags, Boolteens East, Q79250752, R.L. Hodd (DBN).
- 1.13.a. *Sphagnum capillifolium* subsp. *capillifolium*. 14:** locally abundant on east-facing wet heath, 130 m alt., Millbrook, Ashdown Forest, TQ443296, T.W. Otleby, *conf.* M.O. Hill; **15:** valley bog 2, 70 m alt.,

- Hothfield Common, TQ968456, J.I. Hendey, *conf.* M.O. Hill; **80**: in damp heath, moorland valley, 240 m alt., Hartsgarth Burn, below North Birny fell, Liddesdale, NY47909256, D.G. Long (E); **H3**: hummock in blanket bog, Ram's Hill, Caha Mountains, V85585668, R.L. Hodd (DBN); **H17**: on cut-over bog, Ilaun, Milltown, M391658, R.L. Hodd & O.L. Pescott (DBN).
- 1.13.b. *Sphagnum capillifolium* subsp. *rubellum*. 38:** mire, Sutton Park, SP1032997547, D.A. Callaghan.
- 1.15.b. *Sphagnum subnitens* var. *ferrugineum*. H17:** on raised bog, 60 m alt., Ballygar Bog, M782539, M.O. Hill.
- 1.17. *Sphagnum molle*. 13:** on wet heath, locally common, 50 m alt., Stedham Common, SU85422205, T.W. Ottley 14092901.
- 1.18. *Sphagnum strictum*. 49:** locally frequent in M17 bog, 200 m alt., Nant Ffrancon, SH63556353, 2013, K. Birch, *conf.* M.O. Hill.
- 1.19. *Sphagnum compactum*. H17:** beside forestry track, Gortnalea, M48016622, R.L. Hodd & O.L. Pescott (DBN).
- 1.21. *Sphagnum inundatum*. 38:** flush in lowland heath, Sutton Park, SP1091495591, D.A. Callaghan; **H17:** among *Molinia* in clearing within forestry plantation, near Shanballymore, M4793466234, O.L. Pescott, *conf.* M.O. Hill.
- 1.23. *Sphagnum contortum*. H2:** base-rich spring amongst degraded wet heath, Curaheen, Q78771115, R.L. Hodd (DBN).
- 1.24. *Sphagnum platyphyllum*. H3:** in base-rich flush, Above Glenkeel Lough, V83395497, R.L. Hodd (DBN).
- 1.26. *Sphagnum cuspidatum*. 38:** lowland mire pool, Sutton Park, SP0875196886, D.A. Callaghan.
- 2.4. *Andreaea mutabilis*. 78:** on low rock outcrop by stream, with *A. rupestris*, 450 m alt., Black Cleuch, Fruid Water, NT11261567, D.G. Long 42874 (E).
- 2.8. *Andreaea megistospora*. 87:** on schist boulder on humid west-facing slope, Glen Falloch Pinewood, NN3622, 2011, A.J. Hodgson.
- 4.2. *Atrichum tenellum*. 110:** on peat among stones at edge of moorland loch, 105 m alt., Loch Sgeireach Mor, near Gress, Isle of Lewis, NB49114588, T. ap Rheinallt.
- 6.2. *Pogonatum aloides*. 38:** stream bank in wet woodland, Sutton Park, SP0863696765, D.A. Callaghan; **H17:** on acidic bank in forestry, Gortnalea, M47916618, R.L. Hodd & O.L. Pescott (DBN).
- 6.3. *Pogonatum urnigerum*. 29:** on hoggin with granite gravel in car park, West Cambridge Residences, TL427588, S. Hartley.
- 7.1. *Polytrichastrum alpinum*. 3:** on granite rocks, 460 m alt., Rippon Tor, Dartmoor, SX746756, J.J. Day.
- 8.4. *Polytrichum strictum*. 13:** edge of bog, through *Sphagnum palustre*, 35 m alt., Ambersham Common, SU90711941, B.W. Middleton & T.W. Ottley 14111902; **63:** clearing in *Betula* woodland with *Sphagnum* and *Calluna vulgaris*, Lindholme Old Moor, Hatfield Moors, SE703067, C. Wall.
- 14.4. *Encalypta vulgaris*. 75:** Greenan Castle, NS31231929, R. Whytock.
- 14.6. *Encalypta ciliata*. H2:** calcareous crevice in cliff, Gormagh, Q77910849, R.L. Hodd (DBN).
- 16.4. *Entosthodon fascicularis*. H17:** on soil of grave in ruined churchyard, Kilmaine, M2568059329, S. Pilkington.
- 18A.1. *Ephemerella readeri*. 57:** scattered shoots among *Pseudephemerum nitidum* on bare peaty soil exposed by reservoir, 210 m alt., Ladybower Reservoir, SK16468747, T.L.

- Blockeel 43/561. Fig. 2.
- 21.3. *Schistidium platyphyllum*. 52:** weir below reservoir dam, Llyn Alaw SW, SH37448541, S.D.S. Bosanquet.
- 21.5. *Schistidium apocarpum*. 74:** on boulder at edge of bed, 30 m alt., Logan Botanic Garden, walled garden, NX096426, E.M. Kungu & V. Heppel (E).
- 21.11. *Schistidium robustum*. 2:** insolated, old block of concrete in disused quarry, 210 m alt., NW of Scredda, SX0158455193, D.A. Callaghan.
- 21.14.a. *Schistidium frigidum* var. *frigidum*. Delete 96,** the voucher in E (on dry rock face, Allt Ruigh Chreagain ravine, Glen Feshie NN865901 Long, 1980) is *S. strictum*, det. S.D.S. Bosanquet.
- 21.16. *Schistidium crassipilum*. 78:** on wall top, roadside, 176 m alt., near Stobo Kirk, NT18403767, DG Long 43547 (E); **100:** cottage wall, Largybeg, Arran, NS0509223426, 2013, P. Martin.
- 22.3. *Grimmia laevigata*. 14:** outbuilding roof, growing with *G. ovalis*, 95 m alt., Cross-in-Hand, TQ562198, T.W. Ottley 14040201.
- 22.8. *Grimmia donniana*. 52:** dry-stone wall by lane junction, Cefn Roger, Llanfechell, SH378903, S.D.S. Bosanquet.
- 22.11. *Grimmia longirostris*. H16:** on rock on shore of lough, L. Uggabeg, nr. Cornarona, M044248, R.L. Hodd, S. Pilkington & G.F. Smith (DBN).
- 22.20. *Grimmia trichophylla*. 14:** on top of garden wall, sandstone, 15 m alt., Herstmonceux Castle, TQ646105, T.W. Ottley; **25:** churchyard wall, Pettistree, TM298549, 1997, R.J. Fisk, *conf.* R.D. Porley, replaces previous record (Needham Market, leg. Blockeel, 1981), which is probably a form of *G. pulvinata*; **H2:** rocks near summit, Caherbla, Slieve Mish, Q72340502, R.L. Hodd (DBN); **H17:** on top of wall in heath, Gortnalea, M48016622, R.L. Hodd & O.L. Pescott (DBN).
- 22.22. *Grimmia dissimulata*. 5:** on church wall and gravestones (limestone), St Bartholomew's church, Crewkerne, ST439098, A. Branson; **13:** on calcareous sandstone tiles on porch roof, 70 m alt., St John's church, Coolhurst, TQ200298, T.W. Ottley 14112401; **28:** ledge near base of wall of church, Hingham, TG02180213, R.J. Fisk.
- 22.24. *Grimmia hartmanii*. Delete H28,** the voucher (Easky Lough G4423, Hodgetts, 2004) belongs to *Grimmia anomala*.
- 22.24A. *Grimmia anomala*. 88:** on boulder top on loch margin, 722 m alt., Lochanannan Cat, Ben Lawers, NN6469442593, R.D. Porley.
- 23.7. *Racomitrium affine*. 74:** on boulder at edge of bed, 30 m alt., Logan Botanic Garden, walled garden, NX096426, E.M. Kungu & V. Heppel (E); **100:** rocks, 107 m alt., by Iron Age Fort, Arran, NS0308425203, 2013, P. Martin.
- 23.8. *Racomitrium heterostichum*. 27:** lid of box tomb in churchyard, New Buckenham, TM087905, RJ Fisk; **100:** pathside rock, 252 m alt., Holy Island, Arran, NS0638629511, 2013, P. Martin.
- 23.10. *Racomitrium lanuginosum*. 14:** on low west-facing roof of main building, 60 m alt., Balcombe Mill, TQ31753050, T.W. Ottley, S. Rubinstein & D.T. Streeter 14120303.
- 24.1. *Ptychomitrium polyphyllum*. 17:** on soil on quarry floor with *Ceratodon purpureus*, ca 230 m alt., sandstone quarry on side of Pitch Hill, TQ08094261, H.W. Wallis.
- 25.1. *Campylostelium saxicola*. H2:** on boulder in humid wooded valley, Eamonn's Wood, Eagle's Nest, V9187584370, R.L. Hodd (DBN). Fig. 3.



△Fig. 3: Habitat of *Campylostelium saxicola*, Eamonn's Wood, North Kerry. R.L. Hodd

- 27.1. *Brachydontium trichodes*. 40:** sandstone boulder beside stream, 401 m alt., Clee Liberty, Brown Clee Hill, SO5855884505, D.A. Callaghan; **delete 58**, the entry is based on a record from Alderley Edge in Wheldon (1898) but no specimen has been traced and the record is unsubstantiated.
- 28.2. *Seligeria acutifolia*. 104:** damp shaded north-facing limestone cliff, 100 m alt., N. Screapadal, Raasay, NG579451, 2013, N.G. Hodgetts 8270.
- 28.6. *Seligeria recurvata*. 41:** rare in hole in sandstone crag, 475 m alt., Llyn Fach, SN90500356, S.D.S. Bosanquet; **H3**: on low calcareous cliff, Glenlough Plateau, west of Barley Lake, V86325670, R.L. Hodd (DBN).
- 28.13. *Seligeria carniolica*. 80:** on intermittently submerged limestone rocks, stream shaded by *Alnus* trees, 140 m alt., Black Burn, near Blackburn Farm, Newcastleton, NY47318909, D.G. Long *et al.* (E).
- 30.3. *Fissidens pusillus*. 3:** side of shaded granite boulder, 300 m alt., in River Ashburn near Welstor, Ashburton, SX746735, M. Pool.
- 30.6.a. *Fissidens bryoides* var. *bryoides*. H17:** on soil bank in young woodland, Gortnalea, M47816600, R.L. Hodd & O.L. Pescott (DBN).
- 30.11. *Fissidens exilis*. 72:** on soil on west bank of Linn, just above small water course, 160 m alt., Routin Linn, Mennock Wood, Nithsdale, NS8170708487, E.M. Kungu (E).
- 30.12. *Fissidens celticus*. 72:** margin of pasture, on clay bank by stream, under *Acer*, 215 m alt., Corehead Farm, Annandale, NT07301251, D.G. Long & E.M. Kungu 42884 (E).
- 30.17. *Fissidens adianthoides*. H31:** on wet, vertical clay bank (collapsed bank of stream), 160 m alt., Lislea, Omeath, J115177, M. Eakin.
- 30.20. *Fissidens fontanus*. 30:** submerged on concrete of weir, Great Ouse, Eaton Socon, TL17485866, M.O. Hill & M. Burton.
- 31.1. *Pleuroidium acuminatum*. 38:** on bare shaly bank in pasture, Moorwood, Hartshill, SP318939, J.M. Turner; **H17:** disturbed



△Fig. 4: Carrauntuohil, South Kerry, locality for *Ditrichum zonatum*. R.L. Hodd

▽Fig. 5: *Dicranodontium uncinatum*, North Kerry. R.L. Hodd



- ground/top soil dumped near limestone pavement, between Headford and Lough Corrib, M2211643367, K.R. Duff.
- 31.2. *Pleuridium subulatum*. 72:** roadside verge, Ae village, NX9889, C. Miles.
- 34.6. *Ditrichum zonatum*. H1:** on cliff ledge, base of upper Curved Gully, Carrauntuohil, V802846, R.L. Hodd (DBN). Fig. 4.
- 36.2. *Distichium inclinatum*. H2:** on calcareous cliff ledge, Gormagh, Q77910849, R.L. Hodd (DBN).
- 37.2. *Ceratodon conicus*. 32:** flat semi-bare ground adjacent to approach road to sand and gravel quarry, 100 m alt., Pitsford Quarry, SP75446729, J. Minney & R.H. Carter; **34:** old concrete bases, Lamplighters Nature Reserve, Bristol, ST5217776963, P. Martin, see also Martin (2014).
- 45.1. *Dichodontium pellucidum*. H22:** on stone in stream, 125 m alt., Grangegeeth, Slane, N954795, M. Eakin.
- 53.1. *Dicranum polysetum*. 70:** in block scree, adjacent to conifers, Castle Crag, Borrowdale, NY247159, 2008, F. Cameron, *conf.* S.D.S. Bosanquet.
- 53.2. *Dicranum bonjeanii*. H17:** in extensive bog/fen complex, Coolanilaun, Menlough, M27662913, R.L. Hodd (DBN).
- 53.5. *Dicranum majus*. H31:** on earthen/stone wall in conifer woodland, 110 m alt., Lislea, Omeath, J117178, M. Eakin.
- 53.8. *Dicranum fuscescens*. 16:** on old *Castanea* stump, ca 100 m alt., Angley Wood, Cranbrook, TQ76673618, T.L. Blockeel 43/282.
- 53.9A. *Dicranum spadiceum*. 92:** in flushed turf amongst rocks in calcareous grassland, 760 m alt., Creag an Dail Beag, NO14619768, 2010, G.P. Rothero 2010500 (Rothero, 2014).
- 55.1. *Dicranodontium uncinatum*. H1:** on sheltered crag, Derryquay, Baurtregaum, Q758085, R.L. Hodd (DBN); **H2:** on exposed mountain summit, 830 m alt., Caherconree, Slieve Mish, Q733072, R.L. Hodd (DBN). Fig. 5.
- 56.2. *Campylopus subulatus*. 72:** stabilised river gravels, behind embankment, 15 m alt., River Nith, The Tooks, NX954826, E.M. Kungu; **H20:** peaty soil at edge of tarmac track, 480 m alt., lower slopes of Turlough Hill, O074000, J.L. Denyer JLD-B-6695 (DBN).
- 56.6. *Campylopus pyriformis*. 38:** bare peaty soil in heathland, Sutton Park, SP1024797610, D.A. Callaghan.
- 57.2. *Leucobryum juniperoideum*. 27:** in woodland on bole of large Sweet Chestnut from base to about 4 ft up, 90 m alt., Great Wood, Felbrigg Hall estate, TG19544056, M. Ghullam.
- 60.1.b. *Weissia controversa* var. *crispata*. 14:** on chalky soil, south-facing bank by track, 100 m alt., Glynde, TQ44890950, T.W. Ottley 14121601; **47:** crevice of cliff, Pencraig Rocks, SO072854, M. Lawley.
- 60.3. *Weissia rutilans*. 78:** on soil bank to north of path, 220 m alt., north of Easton Burn, Stobo, west of R Tweed, NT17253799, E.M. Kungu (E).
- 60.5.a. *Weissia brachycarpa* var. *brachycarpa*. 5:** Buckland Wood, ST188176, A Branson; **31:** on mud of ride, 30 m alt., Meagre Wood, TL15596412, R.H. Carter.
- 60.7. *Weissia rostellata*. 13:** on mud at edge of pond, 70 m alt., Golden Folly Pond, Horsham, TQ197304, T.W. Ottley 14100105.
- 61.7. *Tortella inclinata*. 91:** in earthy cracks of rock outcrop (old quarry), with *T. tortuosa*, ca 240 m alt., open hillside, Rhindbuckie Hill near Banchory, NO715932, 1980, A.G. Payne.
- 62.3.a. *Trichostomum tenuirostre* var. *tenuirostre*. 52:** rock by stream in park,

- Afon Wygyr, Cemaes, SH372933, S.D.S. Bosanquet; **64**: on wet slate rocks in oak woodland, 150 m alt., Twisleton Glen, Ingleton, SD70237418, T.L. Blockeel 43/567.
- 62.3.b. *Trichostomum tenuirostre* var. *boltii*.** **47**: flushed mossy rocks by the river, slightly above confluence with Nant y Garnedd, SH8910, 2007, J.W. Bates 4339; **48**: shaded rocks, by bridge over Nant Cader at bottom of oakwood and N.N.R., south side of Cader Idris, SH728115, 1993, J.W. Bates & S.V. O’Leary B3005; **59**: on irrigated rock face of waterfall in wooded clough, 200 m alt., Tigers Clough, Horwich, SD643127, A. Gregory; **105**: persistently inundated boulder top in river, shaded ravine, 66 m alt., Fuaran Mor, Beinn Eighe N.N.R., NG98876621, 2013, J.E. Smith & G.P. Rothero.
- 64.1. *Pleurochaete squarrosa*.** **64**: soil pockets on broken limestone outcrops on slope facing south-east, ca 250 m alt., Kilnsey Crag, Wharfedale, SD97176783, T.L. Blockeel 43/034.
- 65.1.a. *Hymenostylium recurvirostrum* var. *recurvirostrum*.** **72**: low rock outcrop above river, 140 m alt., Echan Water, Sanquhar, NS773088, E.M. Kungu; **75**: crevices in rock face by burn in ravine, 230 m alt., Red Burn, Grimmet, NS4406, N.G. Hodgetts 8558.
- 67.1. *Gyrowesia tenuis*.** **104**: crevices in sheltered face of old iron ore quarry, 40 m alt., East Suisnish, Raasay, NG55563439, 2013, N.G. Hodgetts 8273, *det.* J. Kučera; **H4**: on mortar of calcareous wall, Beside Mardyke Arena, Cork, W6545571378, R.L. Hodd (DBN).
- 68.1. *Gymnostomum viridulum*.** **14**: south-facing slope in chalk pit, on soil, 110 m alt., Glynde, Saxon Down, TQ44541044, T.W. Ottley & S. Rubinstein 14111801.
- 72.1. *Ephemerum recurvifolium*.** **5**: abundant in margin of cultivated field in experimental plots, 45 m alt., Fivehead arable fields S.S.S.I., near Langport, ST33772225, S. Pilkington; **41**: rare in arable headland, 25 m alt., Cosmeston, ST185694, S.D.S. Bosanquet.
- 72.2. *Ephemerum sessile*.** **13**: on mud at top end of pond, with *E. serratum*, 70 m alt., Golden Folly Pond, Horsham, TQ198305, T.W. Ottley 14100101; **24 in ()**: on Oxford Clay in woodland ride, with *Ephemerum serratum* s.l., Whitecross Green Wood, SP6014, 1945, E.W. Jones (Jones, 1953); the site is in part of VC 24 which is in Oxfordshire; **41**: trampled track through gorse, Cors Bryn-y-Gaer, SN94170679, S.D.S. Bosanquet; **58**: clayey soil at reservoir edge, mixed with *Weissia rostellata*, Sutton Reservoir, SJ9217470142, D.A. Callaghan.
- 72.6. *Ephemerum serratum*.** **13**: on mud at top end of pond, 70 m alt., Golden Folly Pond, Horsham, TQ198305, T.W. Ottley 14100104.
- 74.2. *Dialytrichia saxicola*.** **9**: on trunk of collapsed *Salix* in field near R Yeo, The Old Mill, Bradford Abbas, ST591139, A. Branson.
- 76.2. *Bryoerythrophyllum ferruginascens*.** **52**: soil on serpentine rock by track, 10 m alt., Cerrig Moelion, SH267771, 2013, S.D.S. Bosanquet; **H2**: on calcareous cliff ledge, Gormagh, Q77860832, R.L. Hodd (DBN); **H25**: on forestry track, east of Cornaveagh, M780643, S. Pilkington.
- 77.2. *Leptodontium gemmascens*.** **41**: decaying thatch, Reeve’s House, Cosmeston Mediaeval Village, ST177689, R.V. Lansdown, R.E. Lansdown & C.I. Lansdown.
- 78.1.b. *Barbula convoluta* var. *sardoa*.** **76**: on track, near Centre, 30 m alt., Lochwinnoch RSPB Reserve, E of Loch, NS3658, E.M. Kungu (E).
- 79.2. *Didymodon icmadophilus*.** **61**: on base-

- rich gravel at edge of woodland ride, 14 m alt., Wheldrake Wood, SE66374705, T.L. Blockeel 43/553, *det.* J. Kučera. **80:** edge of gravel car park, 200 m alt., Dykecrofts Cottage, Newcastleton Forest, NY5017787417, D.A. Callaghan, *det.* J. Kučera.
- 79.4. *Didymodon nicholsonii*. 31:** on thin soil over old tarmac at edge of lane, 17 m alt., Alconbury, TL18847563, M. Burton; **94:** on concrete steps of mausoleum, 100 m alt., Forglen Estate, near Turriff, NJ698510, 2008, M. Pool; **H16:** gritty ground by road in village, 50 m alt., Doon, M1636, M.O. Hill.
- 79.6. *Didymodon umbrosus*. 31:** at base of brick wall, adjoining tarmac, 20 m alt., Alconbury, TL187758, M. Burton.
- 79.8. *Didymodon insulanus*. H17:** on soil in garden of house, Milltown, M403633, S. Pilkington.
- 79.11. *Didymodon sinuosus*. 105:** limestone rock crevice in ravine, 100 m alt., Allt Mor, Rassal, NG846424, 2013, N.G. Hodgetts 8230, *conf.* J. Kučera; **H26:** stone in graveyard, Kilvine, M447688, R.L. Hodd & O.L. Pescott (DBN).
- 79.13. *Didymodon spadiceus*. 63:** at foot of steep woodland bank, near Hebden Bridge, SD988289, J.M. Turner, *conf.* J. Kučera; **H35:** flushed area by roadside, Arranmore, B648148, S.V. O’Leary, *conf.* J. Kučera.
- 82.3. *Aloina aloides*. H17:** on vertical bank, in field, 80 m alt., Richmond Esker, M5954, M.O. Hill.
- 83.13. *Tortula amplexa*. 57:** on clay on side of vehicle ruts in old clay pit, ca 110 m alt., Whiteley Brick Works, south of Ripley, SK40264863, T.L. Blockeel 43/542.
- 83.17. *Tortula modica*. 24:** with *T. truncata*, open area north of footpath, Black Park Country Park, TQ0108683557, S.V. O’Leary & O.L. Pescott; **65:** in Magnesian Limestone quarry, Nosterfield Limekilns, SE274807, J. O’Reilly.
- 83.18. *Tortula truncata*. H17:** on bare earth in garden, Milltown, M4063, O.L. Pescott.
- 84.1.a. *Phascum cuspidatum* var. *cuspidatum*. H25:** on bare earth in churchyard, Taughboy, M884723, O.L. Pescott.
- 84.1.c. *Phascum cuspidatum* var. *schreberianum*. 28:** on soil, 2 m alt., SW of Wiggenhall St Mary Magdalen, TF569095, L. Saunders.
- 85.5. *Microbryum floerkeanum*. 38:** arable field margin sown with wildflower seed mix, 125 m alt., Fenny Compton, SP443519, N.J. Law.
- 86.2. *Henediella macrophylla*. 38:** on bank at edge of woodland by canal, with *Ceratodon purpureus*, Alvecote, SK2503, J.M. Turner.
- 87.1. *Acaulon muticum*. 32:** on leached soil, turf at top of steep limestone/clay slope, 45 m alt., Ring Haw Quarry, Yarwell, TL051978, M.J. Wigginton 14/001.
- 89.3.a. *Syntrichia montana* var. *calva*. 41:** on tarmac, Maes-yr-awel, Caerau, SS85269485, B. Stewart.
- 89.7. *Syntrichia papillosa*. 61:** on *Salix* on river bank, 10 m alt., R Derwent, Wheldrake Ings, SE6946844147, T.L. Blockeel 43/552; **H17:** on beech in village, 100 m alt., Kilkerrin, M6256, K.R. Duff.
- 89.8. *Syntrichia latifolia*. 78:** on base of *Crataegus* in hedge, side of farm track, 175 m alt., near Stobo Kirk, NT18323774, D.G. Long (E).
- 92.2. *Tetraplodon mnioides*. 78:** on dung on wet heath, blanket mire, 440 m alt., Talla Moss, Talla Water valley, NT14982012, D.G. Long 42900 (E).
- 94.1. *Splachnum sphaericum*. 41:** a few small tufts on one cowpat, 105 m alt., Cefn Hirgoed West, SS916833, S.D.S. Bosanquet.



△Fig. 6: *Orthotrichum acuminatum*, Herefordshire, D.A. Callaghan

- 97.1. *Amblyodon dealbatus*. Delete 58**, no vouchers have been traced for the records (on a damp rock near Bidston Hall, leg. Skellon, in Wheldon (1898), and Marple, G.E. Hunt, in Whitehead (1888)), which are dubious.
- 98.1. *Leptobryum pyriforme*. H20**: on thin soil on rock within calcareous spring, Kilgarran, Enniskerry, O216175, J.L. Denyer (DBN).
- 99.1.a. *Zygodon viridissimus* var. *viridissimus*. H17**: on *Quercus*, Knockma Wood, Tuam, M3555448742, R.L. Hodd, O.L. Pescott & G.F. Smith (DBN).
- 100.3B. *Orthotrichum acuminatum*. 36**: trunk of semi-mature ash about 20m inside woodland, Joans Hill Farm Nature Reserve, Checkley, SO5887537717, D.A. Callaghan. Fig. 6.
- 100.4. *Orthotrichum speciosum*. 9**: on sunny ash trunk on edge of field, Beech Cottage, Kingcombe, SY55359917, S.D.S. Bosanquet.
- 100.10. *Orthotrichum cupulatum*. 38**: on

concrete edge of tarmac pavement, housing estate, Hartshill, SP322938, J.M. Turner; **38**: concrete wall of lake dam, Sutton Park, SP1071996519, D.A. Callaghan.

- 100.11. *Orthotrichum rivulare*. 52**: rock in river, Afon Wygyr, Cemaes, SH372931, S.D.S. Bosanquet.
- 100.12. *Orthotrichum sprucei*. 69**: sparsely on root of oak tree on bank of river, with *O. rivulare*, 40 m alt., R Lune, Kirkby Lonsdale, SD61527816, T.L. Blockeel 43/289.
- 100.13. *Orthotrichum stramineum*. 76**: on *Fraxinus* beside path, 28 m alt., Dubbs Water Trail between reserve loch and Castle Semple Loch, Lochwinnoch RSPB Reserve, NS3578358128, E.M. Kungu (E); **99**: epiphytic on old ash by small burn, 150 m alt., Auchineden, Auldmurroch Burn, NS515788, N.G. Hodgetts 8556; **H13**: with *O. pallens*, on trunk of *Acer pseudoplatanus* sapling at edge of track in mixed deciduous-conifer woodland, 55 m alt., west of Ballykeenan, S725448, 2005, D.T. Holyoak 05-489.
- 100.14. *Orthotrichum tenellum*. 78**: on old *Fraxinus* at edge of meadow, valley with patchy woodland, 210 m alt., Easton Burn above Stobo Kirk, NT17543777, DG Long 43553 (E); **H26**: on willow at woodland edge, Clooncormick, nr Hollymount, M251679, R.L. Hodd *et al.* (DBN).
- 100.15. *Orthotrichum pallens*. 13**: one patch on ash trunk, 35 m alt., Goodwood Hotel, SU890081, S.D.S. Bosanquet; **24**: on *Corylus* in mixed woodland, 100 m alt., Dingleberry (Buckinghamshire side), SP854528, R.H. Carter; **57**: on maple in planted woodland near reservoir, 205 m alt., Carsington Reservoir, SK23985135, T.L. Blockeel 43/303; **63**: on branch of ash tree, 15 m alt., Brockadale, near Wentbridge, SE50891712, T.L. Blockeel 43/325.

- 100.18. *Orthotrichum pulchellum*. 110:** on elder branch in suburban area, 43 m alt., Stornoway, Isle of Lewis, NB41953428, 2013, T. ap Rheinallt.
- 101.1. *Ulota coarctata*. 56:** one tuft on branch of oak tree in woodland, ca 95 m alt., High Park, near Eastwood, SK48494987, T.L. Blockeel 43/271; **delete H1**, the record (Glena, B. Carrington, 1861) is poorly localised and is probably from H2.
- 101.2. *Ulota drummondii*. 63:** on sycamore at edge of small woodland, 276 m alt., Colden, near Hebden Bridge, SD96342815, J.M. Turner; **80:** on *Corylus*, wooded moorland valley, 225 m alt., Hartsgarth Burn near Cuttit Sike, Liddesdale, NY47699254, D.G. Long (E); **85:** epiphyte in shade by small pond, Cullaloe, NT187877, D.F. Chamberlain (E).
- 101.5. *Ulota calvescens*. 2:** semi-mature willow by car park, 262 m alt., Colliford Lake, NW car park, SX1631073055, D.A. Callaghan; **9:** on *Salix* in wet woodland, 170 m alt., Redholm Coppice, Kingcombe Reserve, Toller Porcorum, SY5448498743, C.T.W. Tipper; **13:** one tuft on *Corylus*, 155 m alt., north of Counter's Gate, Goodwood, SU896114, S.D.S. Bosanquet; **14:** one tuft on *Salix*, Poundgate, Ashdown Forest, TQ483285, S.D.S. Bosanquet; **14:** on willow in swamp, 30 m alt., Russet Wood, Plumpton Green, TQ364195, T.W. Ottley 14042603; **17:** on oak branch at edge of woodland, 65 m alt., Puttenham Common, SU912458, H.W. Wallis; **24:** east side of trunk of small leaning ash, 225 m alt., summit of steep west-facing hill, SE of Incombe Hole, Ivinghoe Hills, SP962153, C.T.W. Tipper; **38:** on *Salix* in woodland, Alvecote, SK256039, J.M. Turner; **H1:** hazel wood, Lickeen Wood, by Kerry Way, V70678514, R.L. Hodd & J.E. Smith (DBN); **H17:** on willow branch, Fartagar, nr. Kilconly, M380564, R.L. Hodd *et al.* (DBN).
- 102.1.b. *Hedwigia ciliata* var. *leucophaea*. 82:** insolated igneous rock outcrop, SE-facing, 140 m alt., Traprain Law, NT5779574514, D.A. Callaghan.
- 102.2. *Hedwigia stellata*. 14:** on east-facing clay-tiled roof of outbuilding, 60 m alt., west side of road, Balcombe Mill, TQ31753052, T.W. Ottley, S. Rubinstein & D.T. Streeter 14120301; **110:** on boulder at edge of moorland loch, 56 m alt., Loch Tobhtaichean Amhlaigh, Grabhair, Isle of Lewis, NB34681819, 2013, T. ap Rheinallt.
- 105.2. *Bartramia pomiformis*. H1:** on dripping base-rich cliff, 820 m alt., above L. Googh, V8375883918, R.L. Hodd (DBN).
- 105.3. *Bartramia ithyphylla*. H1:** under overhang of flushed cliff, 750 m alt., Above L. Googh, V8382283823, R.L. Hodd (DBN).
- 107.3. *Philonotis arnellii*. 59:** on sandy soil of reservoir margin, 140 m alt., Lower Rivington Reservoir, SD625143, A. Gregory.
- 111.11. *Bryum algovicum*. 24:** on fine soil, on anthill in chalk grassland, Great Kimble Warren, SP8329405460, S.V. O'Leary.
- 111.15. *Bryum intermedium*. 52:** damp sandy soil beside a small base-rich stream in grazed paddock among mature conifer plantation, 40 m alt., Newborough Forest, SH3990664833, D.A. Callaghan; **81:** in damp calcareous sandy hollow, old gravel pit, 85 m alt., Piper's Knowe Quarry near Causewaybank, NT88095923, D.G. Long (E).
- 111.20. *Bryum torquescens*. 15:** among grass on sandy-gravelly soil, 3 m alt., Lydd Ranges, TR02761883, T.L. Blockeel 43/283; **24:** anthill on east side of hill, Beacon Hill, Ellesborough, SP8359606248, S.V. O'Leary; **33:** shallow soil in cracks of oolite in abandoned quarry below the fourth hole of the golf course, Cleeve Common, SO992267,

- R.V. Lansdown & E.L. Phillips.
- 111.24.b. *Bryum pseudotriquetrum* var. *bimum*. 24:** submerged in basic pools, on mud, Calvert Jubilee Nature Reserve, SP6822425258, S.V. O'Leary.
- 111.29. *Bryum gemmiferum*. 80:** on silty boulder by stream, wooded moorland stream valley, 160 m alt., Black Burn below Hog Gill, Newcastleton, NY46728913, D.G. Long (E).
- 111.33. *Bryum radiculosum*. 79:** on brickwork of terrace in garden, 180 m alt., The Haining, Selkirk, NT46882800, D.G. Long (E); **H17:** on wall of house, Milltown, M403633, S. Pilkington.
- 111.34. *Bryum ruderale*. 80:** farm track, on gravelly soil, 155 m alt., near Blackburn Farm, Newcastleton, NY47528860, D.G. Long 43458 (E).
- 111.39. *Bryum tenuisetum*. 76:** on mud from scrape at edge of reserve loch, 28 m alt., Lochwinnoch RSPB Reserve, NS358581, E.M. Kungu, *conf.* D.T. Holyoak (E).
- 111.40. *Bryum subapiculatum*. 76:** on mud from scrape at edge of reserve loch, 28 m alt., Lochwinnoch RSPB Reserve, NS358581, E.M. Kungu (E).
- 111.43. *Bryum riparium*. 78:** on ledge of low crag, steep rocky slopes below crags, 715 m alt., Talla Craigs, Talla Water valley, NT15451843, D.G. Long 42925 (E).
- 111.45. *Bryum muehlenbeckii*. 98:** on irrigated slabby rocks on low crag, 900 m alt., broken crags below Church Door Buttress, Bidean nam Bian, NN14285449, G.P. Rothero 2014104.
- 114.1.a. *Poblia elongata* var. *elongata*. 78:** on wet acid rock ledge, moorland valley, 610 m alt., Donald's Cleuch, Gameshope Valley, NT14531719, D.G. Long & E.M. Kungu (E).
- 114.3. *Poblia cruda*. H2:** ledge on calcareous cliff, Gormagh, Q779082, R.L. Hodd (DBN).
- 114.9. *Poblia andalusica*. 88:** disturbed soil, ca 970 m alt., Meall Corranaich, Breadalbane, NN61584152, M. Lawley.
- 114.10. *Poblia bulbifera*. Delete 79,** the locality (bare soil near mouth of Megget Water, St Mary's Loch, A.C. Crundwell, 30 August 1971, BBSUK) is in VC 78.
- 114.16. *Poblia lutescens*. 80:** sandy eroding stream bank, 150 m alt., Black Burn, NY4739188921, D.A. Callaghan.
- 114.19.b. *Poblia wahlenbergii* var. *glacialis*. H2:** in mildly calcareous spring on rockface, Gormagh, Q78090823, R.L. Hodd (DBN).
- 116.4. *Mnium lycopodioides*. Delete 92,** the voucher (The Cairnwell, NO139780, ME Newton, 4 August 1993, BBSUK) is *Mnium hornum*.
- 116.5.a. *Mnium marginatum* var. *marginatum*. H19:** soil on north-facing calcareous bank, with *Encalypta streptocarpa* and *Plagiochila porelloides*, north of Sousheen Common, minor road leading west from Ballymore Eustace, N9210210450, J.L. Denyer JLD-B-6827 (DBN).
- 119.2. *Plagiomnium affine*. 76:** on bank in mixed woodland, 30 m alt., Lochwinnoch RSPB Reserve, E of Loch, NS3658, E.M. Kungu (E).
- 119.4. *Plagiomnium elatum*. H31:** Burren, Dunleer, O0685, 2013, J.L. Denyer JLD-B-6579 (DBN).
- 133.2. *Cratoneuron curvicaule*. 88:** on calcareous schist slab, slopes below SE-facing slabs, 1050 m alt., Creag Loistge, Ben Lawers, NN63384120, D.G. Long (E).
- 137.2. *Hygroamblystegium tenax*. 76:** on stones in ditch draining mixed woodland, 30 m alt., Lochwinnoch RSPB Reserve, E of Loch, NS3658, E.M. Kungu (E).
- 137.4. *Hygroamblystegium humile*. H39:** fields

by Portmore Lough, J1068, A. Guichard.

- 140.2. *Drepanocladus aduncus*. 47:** on damp soil of newly dried up pool, Todleth Hill, near Church Stoke, SO290944, M. Lawley; **H17:** bog pool in peat cutting, Kilcreevanty, M4157, O.L. Pescott.
- 140.3. *Drepanocladus sendtneri*. Delete 58,** the only record traced (Oak Mere SJ572683, M.J. Wigginton, 1987) is *Sarmentypnum exannulatum*, comm. D.A. Callaghan, and an earlier record from Hale Moss in Wheldon (1898) is unsubstantiated.
- 141.1. *Tomentypnum nitens*. H22:** at margins of fen pools at edge of birch/willow scrub, 125 m alt., Ballintogher, Dromone, N5586873278, T. Finnen & M. Eakin.
- 142.1. *Sanionia uncinata*. H25:** epiphytic on *Salix* in wet woodland, east of Cornaveagh, M7807864321, S. Pilkington.
- 142.2. *Sanionia orthothecioides*. 104:** north side of small hummock on sheep-grazed coastal clifftop grassland, 55 m alt., Steall a' Greip, NG46107352, N.G. Hodgetts 8569.
- 143.5. *Hygrohypnum eugyrium*. 80:** on rocks in inundation zone of burn, 220 m alt., Hartsgarth Burn, north of Newcastleton, NY478925, G.P. Rothero 2014103.
- 143.8. *Hygrohypnum duriusculum*. H1:** on rocks in flow of stream, Coomloughra, V7944784381, R.L. Hodd (DBN).
- 144.1. *Pseudocalliergon lycopodioides*. 45:** Dowrog Common, SM7727, 1981, A.R. Perry (NMW), replaces previous post-1960 record (Stackpole SR975942, Hale & Stewart, 1996, *Field Bryology* 100: 77), which is dubious (Bosanquet, 2010).
- 145.1. *Warnstorfia fluitans*. H17:** bog pool in old peat cutting, 50 m alt., Kilcreevanty, NW of Tuam, M417577, M.O. Hill.
- 146.1. *Sarmentypnum exannulatum*. H31:** in flush with *Philonotis fontana*, 360 m alt.,



△Fig. 7: *Hygrohypnum duriusculum*, South Kerry. R.L. Hodd

Tullaghmeath, J107155, M. Eakin.

- 148.1. *Hamatocaulis vernicosus*. 63:** mineral-rich flush below springhead in wet pasture, 250 m alt., Rickett's Field, near Low Bradfield, SK25259127, T.L. Blockeel & R. Tratt 43/513.
- 149.1. *Scorpidium revolvens*. H2:** in calcareous flush, Curaheen, Q77471084, P.M. Perrin (DBN); **H26:** in old peat diggings, 35 m alt., Clooncormick, nr Hollymount, M250680, M.O. Hill.
- 150.1. *Calliergon cordifolium*. H17:** in secondary wet woodland developed on cut-over bog, Carrowmore, M2971355191, S. Pilkington.
- 161.2. *Plasteurbynchium striatulum*. H17:**

- on drystone wall (limestone), Clydagh, M2218443362, S. Pilkington.
- 163.2. *Platyhypnidium lusitanicum*. 80:** on mossy boulder in stream, wooded moorland stream valley, 205 m alt., Black Burn below Long Gill, Newcastleton, NY45848903, D.G. Long (E); **98:** on rocks by river, 100 m alt., River Ure, NN065475, 1986, B. Averis.
- 167.1. *Oxyrrhynchium pumilum*. H17:** bank of ditch, 55 m alt., Clonbrock woodland, M752406, M.O. Hill.
- 167.3. *Oxyrrhynchium schleicheri*. 58:** sandy loam of steep wooded bank beside canal, Trent and Mersey Canal, SJ6133775442, 2013, D.A. Callaghan.
- 167.4. *Oxyrrhynchium speciosum*. H17:** banks of creek, 55 m alt., Clonbrock woodland, M75174047, M.O. Hill.
- 170.5. *Brachythecium mildeanum*. H16:** roadside, 50 m alt., Doon, M1636, M.O. Hill; **H17:** compacted ground of hard-standing, 100 m alt., Kilkerrin, M623562, M.O. Hill; **H26:** on little-used road, 35 m alt., Clooncormick, nr Hollymount, M250681, M.O. Hill.
- 173.2. *Brachytheciastrum trachypodium*. 98:** in wet scree at base of crag, 1080 m alt., crags near Hourglass Gully, Bidean nam Bian, NN14105430, G.P. Rothero 2014106.
- 179.1. *Pylaisia polyantha*. 26:** on branch of *Prunus* sp., Blackwater Carr, Knettishall Heath, TL94448129, R.J. Fisk; **39:** on fallen log in mixed woodland, woods above Froghall, SK024478, M.F. Godfrey.
- 181.4. *Hypnum andoi*. 110:** on birch bark in woodland, 29 m alt., Stornoway Castle grounds, Isle of Lewis, NB4182334026, T. ap Rheinallt; **H1:** on trunk of large pine by sea, Lackeen Point, nr. Blackwater Bridge, V801677, R.L. Hodd (DBN).
- 186.2. *Heterocladium wulfsbergii*. 63:** on large vertical boulder by river, Hebden Dale, SD985290, J.M. Turner.
- 188.1. *Pleurozium schreberi*. 38:** wet heath, Sutton Park, SP0842196681, D.A. Callaghan.
- 189.3. *Rhytidiadelphus subpinnatus*. 64:** on steep wooded bank above river with *Thuidium tamariscinum* and *Eurhynchium striatum*, 160 m alt., Bolton Abbey Woods, SE066562, J.M. Turner.
- 189.4. *Rhytidiadelphus loreus*. 24:** on ground beneath pines, between path and pond, by fallen birch, Pitlands Wood, Wilton Park, SU9661190265, S.V. O’Leary; **H17:** heather hummock in raised bog, Funshin Bog, Glenamaddy, M716607, J.L. Denyer, S. Pilkington & G.F. Smith (DBN); **H17:** bank along edge of forestry plantation track, near Shanballymore, M478661, O.L. Pescott.
- 190.1. *Loeskeobryum brevirostre*. 81:** on log in heathy ride, conifer plantation, 197 m alt., Lumsdaine Moor, near Crosslaw, NT87916830, D.G. Long (E).
- 191.2. *Hylocomiastrum umbratum*. 72:** on ground in mixed woodland on W bank of burn, 150 m alt., Glendyne Burn, Mennock Wood, Nithsdale, NS8174508758, E.M. Kungu (E).
- 192.1. *Hylocomium splendens*. 38:** lowland heath, Sutton Park, SP0862496820, D.A. Callaghan.
- 196.2. *Orthothecium intricatum*. H3:** on calcareous crag, above Barley Lake, Glengarriff, V86695681, R.L. Hodd (DBN).
- 197.4. *Plagiothecium laetum*. 15:** base of *Castanea* stump, 100 m alt., Trundle Wood, TQ890586, J.I. Hendey.
- 201.1. *Entodon concinnus*. H17:** on limestone outcrop/grassland by Holy Well, Knockroe, M507413, S. Pilkington.
- 202.1. *Platygyrium repens*. 15:** on branch of apple tree, 75 m alt., Hothfield Common, TQ970458, T.W. Ottley.

- 204.2. *Sematophyllum substrumulosum*. 14:** rotting conifer log by lake, north of Old Mill farm, Ashdown Forest, TQ48863076, S.D.S. Bosanquet; **38:** rotten decorticated trunk (holly?) in mixed woodland, Sutton Park, SP1061696886, D.A. Callaghan.
- 208.1. *Antitrichia curtispindula*. 57:** one patch on bole of deciduous tree, 90 m alt., secondary woodland near A38 ring road, Kingsway, Derby, SK3216835397, T.L. Blockeel 43/594.
- 210.3. *Neckera pumila*. 24:** on willow, ca 2m above ground, amongst *Hypnum*, Salcey Forest, SP8135350649, S.V. O'Leary.
- 214.3. *Isothecium boltii*. 63:** on boulder by river with *Hyocomium armoricum*, Hebden Dale, SD985290, J.M. Turner.
- H16.3. *Anomodon viticulosus*. H21:** on bare rock of An Áill immediately below Naul Castle, 70 m alt., An Áill, Naul, O133612, M. Eakin.
- Additional deletions and bracketings**
- Extensive validation of the BBS database was performed in preparation for the new Atlas, primarily by Mark Hill as Recording Secretary at the time. This resulted in some corrections to the data, but also in the rejection of a significant number of records considered erroneous or unreliable. Consequently some entries in the Census Catalogue no longer have matching records on the database, or only have matching records in the bracketed (pre-1960) category. To maintain consistency between the database and the Census Catalogue, the following deletions and bracketings are necessary. *Bryum caespiticium* is the most severely affected species, because all records that were not explicitly based on fruiting material were considered unreliable. Like a number of other *Bryum* species, *B. caespiticium* should not be recorded unless mature capsules are available.
- 3.1. *Oedipodium griffithianum*:** place **104** in brackets.
- 6.1. *Pogonatum nanum*:** place **11** and **26** in brackets.
- 6.3. *Pogonatum urnigerum*:** place **11** in brackets.
- 14.4. *Encalypta vulgaris*:** place **85** in brackets.
- 21.10. *Schistidium dupretii*:** delete **83**.
- 21.11. *Schistidium robustum*:** delete **60**.
- 22.12. *Grimmia ovalis*:** place **70** in brackets.
- 22.20. *Grimmia trichophylla*:** delete **54**.
- 23.3. *Racomitrium aquaticum*:** place **109** in brackets.
- 23.10. *Racomitrium lanuginosum*:** place **37** in brackets.
- 30.8. *Fissidens monguillonii*:** place **4** in brackets.
- 30.9. *Fissidens crassipes*:** place **12** in brackets.
- 31.1. *Pleuridium acuminatum*:** place **29** in brackets.
- 31.2. *Pleuridium subulatum*:** place **85** in brackets; delete **54**.
- 41.2. *Amphidium mougeotii*:** place **37** in brackets.
- 43.6. *Cynodontium tenellum*:** place **89** in brackets.
- 44.1. *Oncophorus virens*:** delete **104**.
- 52.7. *Dicranella rufescens*:** place **11** in brackets.
- 53.2. *Dicranum bonjeanii*:** place **30** in brackets.
- 55.1. *Dicranodontium uncinatum*:** place **69** in brackets; delete **90**.
- 56.5. *Campylopus fragilis*:** delete **54** and **84**.
- 60.1.a. *Weissia controversa* var. *controversa*:** place **H36** in brackets.
- 61.1. *Tortella tortuosa*:** place **85** in brackets.
- 61.7. *Tortella inclinata*:** place **53** in brackets.
- 62.1. *Trichostomum brachydonium*:** delete **24**.
- 65.1.a. *Hymenostylium recurvirostrum* var. *recurvirostrum*:** place **85** in brackets.
- 72.2. *Ephemerum sessile*:** delete **23**.
- 72.6. *Ephemerum serratum*:** place **11** in brackets.

- brackets.
- 78.1.a. *Barbula convoluta* var. *convoluta*: place H36 in brackets.
- 78.1.b. *Barbula convoluta* var. *sardoa*: place H36 in brackets.
- 79.7. *Didymodon vinealis*: place 85 in brackets.
- 83.14. *Tortula lanceola*: place 85 in brackets.
- 83.17. *Tortula modica*: place 104 in brackets.
- 87.1. *Acaulon muticum*: place 54 in brackets.
- 90.1. *Cinclidotus fontinaloides*: place 92 in brackets.
- 94.1. *Splachnum sphaericum*: place 3 in brackets.
- 94.3. *Splachnum vasculosum*: place 106 in brackets.
- 100.11. *Orthotrichum rivulare*: place 39 and 57 in brackets; delete 59.
- 107.8. *Philonotis calcarea*: place 96 in brackets; delete 53.
- 107.9. *Philonotis cernua*: place H1 in brackets.
- 109.1. *Plagiobryum zieri*: place 85 in brackets.
- 111.1. *Bryum marratii*: place 54 in brackets.
- 111.15. *Bryum intermedium*: place 3 and 11 in brackets.
- 111.16. *Bryum donianum*: place 53 in brackets.
- 111.24. *Bryum pseudotriquetrum*: place 37 in brackets; delete H19.
- 111.24.a. *Bryum pseudotriquetrum* var. *pseudotriquetrum*: delete H19.
- 111.24.b. *Bryum pseudotriquetrum* var. *bimum*: place 37 in brackets.
- 111.25. *Bryum caespiticium*: place 61 and 62 in brackets; delete 3, 4, 5, 6, 7, 10, 11, 13, 15, 20, 21, 23, 24, 26, 27, 31, 33, 34, 37, 39, 40, 41, 42, 43, 45, 46, 52, 55, 56, 64, 66, 67, 68, 69, 70, 72, 73, 74, 76, 77, 78, 79, 80, 83, 84, 85, 86, 87, 89, 91, 92, 95, 97, 99, 101, 102, 103, 104, 106, 107, 111 and C.
- 111.46. *Bryum gemmiparum*: place 35 in brackets.
- 112.1. *Rhodobryum roseum*: place 46 and 85 in brackets.
- 114.10. *Poblia bulbifera*: delete H33 and H36.
- 114.11. *Poblia annotina*: place 37 in brackets.
- 114.18. *Poblia melanodon*: place 76 in brackets.
- 114.19.b. *Poblia wahlenbergii* var. *glacialis*: place 69 in brackets.
- 116.5.a. *Mnium marginatum* var. *marginatum*: place 109 in brackets.
- 118.3. *Rhizomnium pseudopunctatum*: place 37 in brackets.
- 119.1. *Plagiomnium cuspidatum*: place 85 in brackets; delete 53.
- 119.4. *Plagiomnium elatum*: place 54 in brackets.
- 119.7. *Plagiomnium rostratum*: place 109 and H36 in brackets.
- 130.2.a. *Fontinalis squamosa* var. *squamosa*: place 76 in brackets.
- 137.3. *Hygroamblystegium varium*: place 54 in brackets.
- 138.1. *Leptodictyum riparium*: place 91 and 106 in brackets.; delete 86 and 102.
- 140.1. *Drepanocladus polygamus*: place 11 in brackets.
- 140.3. *Drepanocladus sendtneri*: place 54 in brackets.
- 141.1. *Tomentypnum nitens*: place 96 in brackets.
- 143.3. *Hygrohypnum luridum*: place 46 in brackets.
- 143.5. *Hygrohypnum eugyrium*: delete 62.
- 144.1. *Pseudocalliergon lycopodioides*: delete 63.
- 145.1. *Warnstorfia fluitans*: place 85 in brackets.
- 146.1. *Sarmentypnum exannulatum*: place 37 in brackets.
- 149.3. *Scorpidium scorpioides*: place 58 and 91 in brackets; delete 5 and 30.
- 157.3. *Thuidium assimile*: place 54 in brackets.
- 161.2. *Plasteurbynchium striatulum*: place 11

in brackets.

- 164.3.** *Rhynchostegium megapolitanum*: place 37 in brackets.
- 170.2.** *Brachythecium erythrorrhizon*: place 108 in brackets.
- 173.1.** *Brachytheciastrum velutinum*: place H21 in brackets.
- 176.1.** *Campylophyllum calcareum*: delete 53, H16, H26, H27, H39 and H40.
- 177.2.** *Calliergonella lindbergii*: place 6 in brackets.
- 178.1.** *Taxiphyllum wissgrillii*: place 85 in brackets.
- 179.1.** *Pylaisia polyantha*: delete H1, H2 and H5.
- 181.7.** *Hypnum imponens*: place 59 in brackets.
- 183.1.b.** *Ctenidium molluscum* var. *condensatum*: delete 64.
- 184.1.** *Hycomium armoricum*: place 76 in brackets; delete 109.
- 190.1.** *Loeskeobryum brevirostre*: place 11 in brackets.
- 197.6.** *Plagiothecium platyphyllum*: place 69 in brackets.
- 197.7.** *Plagiothecium cavifolium*: place 81 in brackets.
- 207.1.a.** *Leucodon sciuroides* var. *sciuroides*: place 68 in brackets.
- 210.2.** *Neckera crispa*: place 54 in brackets.

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References

- Bosanquet, S.D.S. (2010).** *The mosses and liverworts of Pembrokeshire*. Privately published.
- Bosanquet, S.D.S. (2014).** *Crossidium squamiferum* var. *squamiferum* (Viv.) Jur. in southern England, new to Britain. *Journal of Bryology* **36**: 118–121.
- Buchbender, V., Hesperhol, H., Krug, M., Sérgio, C., Séneca, A., Maul, K., Hedenäs, L. & Quandt, D. (2014).** Phylogenetic reconstructions of the Hedwigiaceae reveal cryptic speciation and hybridisation in *Hedwigia*. *Bryophyte Diversity and Evolution* **36**: 1–21.
- Jones, E.W. (1953).** A bryophyte flora of Berkshire and Oxfordshire. II. Musci. *Transactions of the British Bryological Society* **2**: 220–277.
- Martin, P. (2014).** *Ceratodon conicus*: Scarce Redshank or Common Patio Moss? *Field Bryology* **111**: 26–30.
- Rothero, G.P. (2014).** *Dicranum spadiceum* J.E.Zetterst. in Scotland, new to the British Isles. *Journal of Bryology* **36**: 75–77.
- Wheldon, J.A. (1898).** Mosses of Cheshire. *Journal of Botany* **36**: 302–311.
- Whitehead, J. (1888).** *The district flora, as compiled by the Ashton-under-Lyne Linnaean Botanical Society*. J. Andrew & Co., Ashton-under-Lyne.

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