

The moss year - 2012

2012 was an exceptional year for vice-county records, prompted by the recording deadline for the new edition of the national bryophyte atlas, and some initial vetting of the accumulated data. For mosses, the number of additions and amendments to the Census Catalogue in 2012 was 731, of which 657 were new records or post-1960 updates. These break down as shown in the table below.

Even after discounting deletions and bracketings, this represents an increase of a third over 2011. This is largely explained by activities in Ireland, especially targeted recording in North Cork and South Limerick, the summer meeting in Mayo and Sligo, and continuing intensive field work by Rory Hodd and his colleagues. A small but significant number of the new records were collected in previous decades and were elicited by Mark Hill's work in validating Atlas data against the Census Catalogue. This also accounts for a number of deletions, but most of the purging of Irish records is the result of the research done for the Irish Red Data Book by Neil Lockhart,

Nick Hodgetts and David Holyoak (Lockhart *et al.*, 2012). England and Scotland also saw increased activity, but the numbers for Wales were slightly lower. Once again the new records have a very wide geographical spread, and with a large number of contributors. There are new or updated entries for 119 out of the 153 British and Irish vice-counties, excluding deletions and corrections.

Additions to the British and Irish list

The diversity of the British and Irish flora has been increased by the formal publication of one newly described species, and three additions to the flora. The new species is *Orthotrichum cambrense* Bosanquet & F.Lara, discovered in Carmarthenshire by Sam Bosanquet. It is like *O. tenellum* but with rounded leaf apices (Bosanquet & Lara, 2012), and its origin is uncertain. Another *Orthotrichum* new to Britain is *O. scanicum* Grönvall in Derbyshire, yet another example of an epiphytic colonist that is probably

	2011				2012			
	England	Wales	Scotland	Ireland	England	Wales	Scotland	Ireland
New entries	91	41	77	132	104	35	93	217
Debrackets*	38	14	30	67	46	8	49	105
Bracketings†	–	3	–	–	5	–	–	–
Reinstated	–	–	–	–	2	–	–	2
Deletions	3	–	–	6	10	1	2	52
Totals	132	58	107	205	167	44	144	376

*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 valid.

a recent arrival following improvements in air quality (Blockeel, 2012). *Grimmia anomala* Schimp., on the other hand, has clearly always been here but has been overlooked previously as *G. hartmannii*; there are old and recent records from four localities in Scotland and three in Ireland (Lönnell *et al.*, 2012). Finally Sam Bosanquet has investigated *Entosthodon fascicularis* and found that some collections from S. England and Wales belong to the closely related *E. mouretii* (Corb.) Jelenc, which has an otherwise Mediterranean distribution (Bosanquet, 2012).

The moss year

There have been other exceptional finds. The most extraordinary is the discovery by Rory Hodd and Caoimhe Muldoon of *Meesia triquetra* in Co Sligo, a relict boreal species of rich fen known to have been lost from its only previous Irish site in Mayo, and unknown in Britain. *Tomentypnum nitens* is also new to Co Sligo, demonstrating the enormous value of these Irish wetlands. Two further species have been rediscovered in Ireland after long intervals. *Syntrichia princeps*, last recorded in Ireland in 1962, was re-found by Nick Hodgetts in Co Antrim, and *Entosthodon muhlenbergii*, with no confirmed records since 1852, by Sam Bosanquet in Cork. It is curious that *E. muhlenbergii* occurs at such a southern location; *E. pulchellus*, which has a more pronounced Mediterranean distribution, is a more likely species to occur there and was indeed found in South Tipperary in 2011.

To judge from the number of new records for several of Ireland's rarest mosses, the work done for the Irish Red Data Book is only a starting point. *Encalypta rhaptocarpa* rediscovered in Co Leitrim is the second extant site for Ireland, and *Schistisium pruinosum*, found in Co

Londonderry during the summer meeting, has only two other sites. *Plagiopus oederianus* at its old site at Sallagh Braes in Co Antrim is the first confirmed record since 1970. *Fissidens fontanus* has always been rare in Ireland. At Lough Leane near Killarney it may have been introduced with boats, but it has also been found in Lough Ross, Co Armagh. *Didymodon tomaculosus* in Mid Cork is a significant extension to the south-west, suggesting that, as in England and Wales, it is widespread but overlooked. Many of the Irish localities for *Campylostelium saxicola* are old ones and it can be a difficult moss to find; Mark Hill spotted it at a new site while recording in Co Limerick, indicating that it too may be overlooked.

In England Cumberland produced the largest number of new records, thanks to the spring meeting, but some well-recorded counties such as East Sussex and Derbyshire also produced good numbers. Pete Martin found *Dicranodontium asperulum* in the north Pennines, its first English site south of the Border country. This species has a curiously localised distribution that is not easy to explain. The new Pennine site makes its absence from the Lake District even more surprising. Records of species at the edge of their ranges or that are in decline are always pleasing to see. *Tortula wilsonii* is certainly in decline and has been lost from all of its eastern and northern sites, but Des Callaghan has re-found it in North Devon. The new Derbyshire record of *Diphyscium foliosum* is a long way from any other known extant populations, and was found with good capsules. *Ptilium crista-castrensis* is often under suspicion of being introduced at its peripheral English sites, many of which are in forestry plantations. That is not the case with Alistair Headley's discovery of it on Ilkley Moor, where it grows on unburnt heather moor. Our knowledge of the distribution of *Tortula*



△ *Diphyscium foliosum* at Thirkelow, near Buxton, Derbyshire. T. Blockeel

schimperi is still fragmentary, but its range has now been extended to Northumberland, a long way to the north of its previously known sites, which are concentrated in East Anglia. Other notable English records are of *Grimmia incurva* by Pete Martin in Cumberland, apparently only the second recent record for the Lake District, *Atrichum tenellum* by Peter Haworth in East Sussex, and a new East Anglian site for *Plagiothecium cavifolium* by Richard Fisk.

In Wales Carmarthenshire was the most productive vice-county, with 10 new records due to Sam Bosanquet's work. Perhaps the most

notable Welsh finds are the new localities for rare coastal species of *Bryum*, *B. warneum* and *B. marratii* in Glamorgan and *B. marratii* also in Carmarthenshire. *B. warneum* was found in a recently developed slack and demonstrates the potential for rare species to recover lost ground when conditions are right. *Grimmia muhlenbeckii* was previously known only from one old locality in Wales; the new ones from Breidden Hill and Snowdonia confirm that it is alive and well.

In Scotland much work has been done in under-recorded areas with high numbers of new records from the three south-western vice-

counties, Dumfriesshire, Kirkcudbrightshire and Wigtownshire. One of the highlights elsewhere was a new site in East Lothian for *Conardia compacta*, an elusive species which has an unusually wide geographical spread of localities for a nationally rare plant. Nick Hodgetts found *Sphagnum riparium* in Skye, its first Hebridean locality, and Gordon Rothero turned up *Paraleucobryum longifolium* in East Sutherland, a second site for N.W. Scotland. In 2010 Gordon collected a small distinctive *Schistidium* on crumbling soily shale in Glen Nochtly resembling *S. confertum* but now identified as *S. frigidum* var. *havaasii*. Its only other recent localities in Britain are on Ben Lawers and the island of Rum.

A number of mosses are showing an increasing tendency to occur in ruderal habitats. Mark Pool has found *Dialytrichia saxicola* on tarmac in Devon, suggesting that like *D. mucronata*, it may well become more widespread in weedy habitats. More surprising is the case of *Bryoerythrophyllum ferruginascens*. It has been known for some time to occur on old mine spoil and forest roads, but in 2012 there were two records from gravelly soil at the edge of very ordinary tarmac roads, in Cheshire and Wigtownshire.

On a similar theme, former industrial sites can be very rewarding places for bryophytes, and bryologists ignore them at their loss. Perhaps the availability of raw substrates and interesting chemistry combined with the absence of competition offers fertile ground for colonisation by some species. This may explain the presence of *Dicranum polysetum* on old colliery spoil. It had already been found in this habitat in S.W. Yorkshire and is now known in Derbyshire. *Thuidium delicatulum* on an old coal mine in South Lancashire is another fascinating example. Better known and less surprising are the specialist bryophytes that tolerate heavy metals, like *Scopelophila cataractae* at its new site at a lead-

mine in Carmarthenshire.

It is no surprise that interesting epiphytes continue to turn up. A small piece of *Leptodon smithii* found by Robin Stevenson on a conference pear in Norfolk is the most startling; it has a Mediterranean-Atlantic distribution and has not previously been found in East Anglia. Robin also found *Antitrichia curtispindula* in the same orchard. *Orthotrichum speciosum*, *O. pumilum* and *O. consimile* have all turned up in new localities in England, and *Ulotia calvescens* at new sites in Carmarthenshire and Dumfriesshire. The latter ought now to be found in N. Wales and the Lake District. Another oceanic species that does not know its place is *Sematophyllum substrumulosum*. Sam Bosanquet knows how to find it, and has now extended its range to Co Londonderry and Anglesey, far to the north of its former range.

New vice-county records and amendments

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

- 1.1. *Sphagnum austinii*. 93: blanket peat, Allt Sowan Hill, NJ353213, 1974, EL Birse & JS Robertson, det. MO Hill (BBSUK); **H33**: undisturbed blanket bog, Pettigoe Plateau, H015656 and G991642, 2011, C Forster Brown.
- 1.5. *Sphagnum magellanicum*. 63†: southern canals, Thorne Moors, SE7215, I McDonald, believed to have spread from experimental transplants to the site in the early 1980s; **H30**: on raised bog, 120 m alt., Cloghbally Upper, Mullagh (Killyconny Bog SAC), N678825,

M Eakin; **H30**: in wet blanket bog, Alteen, H1547227125, RL Hodd (DBN).

- 1.6. *Sphagnum squarrosum*. H40**: ditch by forest road in conifer plantation, Carrick Wood, C660172, N Lönnell.
- 1.7. *Sphagnum teres*. H31**: on grazed marsh/pasture margin at edge of marsh, ca 100 m alt., Edentober, Ravensdale, J076190, M Eakin; **H39**: river valley, Dungonnell, D190172, RL Hodd *et al.* (DBN).
- 1.8. *Sphagnum fimbriatum*. H26**: Beside stream in river valley, Fiddandarry, G3880420069, RL Hodd (DBN); **H39**: bog margin, McKeown's Hill, D01060899, DF Chamberlain; **H40**: wet ground at edge of plantation, 200 m alt., Springwell Forest, C7727, EM Kungu.
- 1.9. *Sphagnum girgensohnii*. H30**: on flushed heathy slope, Commas, H1199427397, RL Hodd, conf. MO Hill (DBN); **H34**: delete the entry, no localised record traced; **H36**: bank of small ravine, 280 m alt., Sawelbeg, Sperrin Hills, H643934, EM Kungu.
- 1.10. *Sphagnum russowii*. H30**: in flushed stream valley, Dunmakeever, H1030727003, RL Hodd, conf. MO Hill (DBN); **H8**: bank below crags, Seefin Mountain, R643186, MO Hill.
- 1.11. *Sphagnum quinquefarium*. H26**: steep heathery bank in gully on north-facing slope, ca 250 m alt., south side of The Gap, southern Ox Mountains, G375160, TL Blockeel 41/337, conf. MO Hill.
- 1.12. *Sphagnum warnstorffii*. 109**: in small amounts with *S. contortum* and *S. teres* in a small mire (poor fen), just below road near Loch Stemster, ND190411, AG Payne; **H28**: with *Tomentypnum nitens* in blanket bog flush, 134 m alt., Letterunshin Bog, Ox Mountains, G4114625488, N Lockhart & C Douglas 2012/02a; **H35**: in a calcareous flush, ca 150 m alt., Meentygrannagh Bog, 2 km south of

Altinierin, C0206, 1998, N Lockhart, conf. MO Hill.

- 1.13.a. *Sphagnum capillifolium* subsp. *capillifolium*. 4**: large hummocks upon sloping heathland above a flush, ca 320 m alt., East Anstey Common, South-east Exmoor, SS867289, 2011, MJ Latham, conf. MO Hill; **56**: among heather in small fragment of wet heath, 95 m alt., Rainworth Heath, SK590591, TL Blockeel 41/443; **58**: on blanket peat, 520 m alt., Holme Moss, SE0903, TL Blockeel 41/419, conf. MO Hill; **65**: in wet turf at edge of boggy seepage, 205 m alt., Foxglove Covert, Catterick Garrison, SE159968, TL Blockeel 41/285, conf. MO Hill; **72**: partially drained lowland raised bog, ca 60 m alt., Hellshole Moss, N of Templand, NY083879, EM Kungu, conf. MO Hill; **H4**: in wet heath, 300 m alt., Glentaneffinnane, R169046, RL Hodd & SDS Bosanquet, conf. MO Hill; **H8**: in open dry heath on moderate slope, 524 m alt., W. side of Temple Hill, Galty Mountains, R8348120173, RL Hodd, conf. MO Hill; **H26**: forming hummock in blanket bog, Fiddandarry, G385201, RL Hodd, conf. MO Hill (DBN); **H26**: forming rigid hummocks, open mire, ca 100 m alt., bog north of Lough Nanoge, east of Kilkelly, M50529079, DG Long *et al.* 41920; **H28**: hummock in blanket bog, Easky Bog Nature Reserve, G4738127456, RL Hodd, E Joyce & A Korsten, conf. MO Hill (DBN); **H29**: in dry heath, Glasdrumman, Glencar, G7765243393, RL Hodd, conf. MO Hill (DBN); **H30**: on heathery, boggy slope, Bursan, H1095227280, RL Hodd, conf. MO Hill (DBN); **H35**: forming hummock in blanket bog, Greenveen, G5320778684, RL Hodd, conf. MO Hill (DBN).
- 1.14. *Sphagnum fuscum*. H26**: hummock in wet blanket bog, Fiddandarry, G3736719947,

- RL Hodd (DBN); **H33**: undisturbed blanket bog, Pettigoe Plateau, H035644, G993637, 2011, C Forster Brown.
- 1.15.b. *Sphagnum subnitens* var. *ferrugineum*.** **H2**: cut over bog, on W. side of Mangerton E. of the Old Kenmare Rd, V98, 1983, DM Synnott, conf. RE Andrus (DBN); **H26**: on hummock in wet blanket bog, Fiddandarry, G3736719947, RL Hodd, conf. MO Hill (DBN); **H26**: between Cultimagh and Knock, M38, 1982, DM Synnott, conf. RE Andrus (DBN); **H35**: side of gully below Lough Feeane, Aghla Mor, B92, 1990, DM Synnott, conf. RE Andrus (DBN).
- 1.16. *Sphagnum skyense*.** **H26**: on north-facing heathery slope, Ox Mountains, The Gap, G37521609, S Pilkington.
- 1.17. *Sphagnum molle*.** **57**: delete the entry, records from the Combs and Buxton area (SK07) in Linton (1903) by T. Barker are improbable and unsubstantiated; **H38**: flush edge, Leckan More west, J18522198, SDS Bosanquet; **H39**: raised bog, Garry Bog, C9530, MO Hill.
- 1.19. *Sphagnum compactum*.** **H18**: raised bog remnant, Boora, Lough Boora Parklands, N18051922, GF Smith; **H22**: on shallow wet peat below scraggy heather, 240 m alt., Teevurcher, N710933, M Eakin; **H26**: blanket bog, near forestry, 190 m alt., Glenree, near Lough Talt, Ox Mountains, G373184, EJL O'Sullivan (DBN).
- 1.20. *Sphagnum subsecundum*.** **40**: within M10 flush, Catbatch Valley, Long Mynd, SO4137296952, DA Callaghan 1517, conf. MO Hill; **70**: flush, Caudbeck Flow, near Bewcastle, NY581723, MO Hill.
- 1.21. *Sphagnum inundatum*.** **H26**: flush on side of river valley in blanket bog setting, 176 m alt., Glenree, near Lough Talt, Ox Mountains, G377196, EJL O'Sullivan (DBN).
- 1.22. *Sphagnum denticulatum*.** **109**: floating carpet with *Menyanthes* in small dubh lochan, Camster, ND22954705, AG Payne.
- 1.23. *Sphagnum contortum*.** **H30**: in flush in wet heath, Monydoo, H1629228030, RL Hodd, conf. MO Hill (DBN); **H30**: ca 75m into marsh from south-east edge, 60 m alt., Drumhose, Cootehill, H593124, M Eakin.
- 1.24. *Sphagnum platyphyllum*.** **40**: flushed grassy zone of large springhead, Wildmoor, SO4270096404, DA Callaghan 1526, conf. MO Hill; **H31**: in flush near stone wall, 200 m alt., north slope of Slievenagloch Mountain, Cooley Peninsula, J137094, GP Rothero 2012007.
- 1.29. *Sphagnum pulchrum*.** **H33**: undisturbed blanket bog, Pettigoe Plateau, H036644, 2011, C Forster Brown.
- 1.31. *Sphagnum flexuosum*.** **4**: frequent in wet *Betula pubescens* woodland, 200 m alt., near Boldventure, Germansweek, SX439956, M Pool; **15**: in bog, among other *Sphagna*, Hunstead Wood, TR094568, J Hendey; **H40**: *Juncus* flush in grassland, ca 5km NW of Maghera, C8151703872, DA Callaghan; **H40**: wet fen by river, 180 m alt., Pollan Water, C814038, EM Kungu.
- 1.32. *Sphagnum angustifolium*.** **91**: boggy slope, Fetteresso Forest, N of Hill of Quithel, NO7785, 2011, DF Chamberlain, conf. MO Hill; **H28**: in flush on open slope with *S. teres* and *S. contortum*, Fiddandarry, G4003921564, RL Hodd, conf. MO Hill (DBN); **H30**: on steep slope of stream valley, Commas, H1269526284, RL Hodd, conf. MO Hill (DBN); **H40**: hillside flush, Sawel Mountain, H6271897512, DA Callaghan.
- 1.34. *Sphagnum riparium*.** **104**: in runnel in ditch in rough pasture, with *S. palustre* and *S. squarrosum*, ca 150 m alt., Beinn a'Chleirich, NG33784458, NG Hodgetts 8144, conf.

MO Hill.

- 2.2.a. *Andreaea rupestris* var. *rupestris*. 63:** very sparse on millstone grit in small boulder field in moorland valley, 370 m alt., Abbey Brook near Berristers Tor, Howden Moors, SK195925, TL Blockeel 41/457; **H28:** on rock slab, rocky hillside, ca 360 m alt., NE slope of Knockachree, Ox Mountains, G52432873, DG Long *et al.* 41901; **H36:** SW of summit of Sawel, H6162496960, RL Hodd & DA Callaghan (DBN).
- 2.6.a. *Andreaea rothii* subsp. *rothii*. 92:** on slab, SE corner, slopes of Crannach Hill, Deeside, NO3998, 2006, AG Payne; **97:** block scree, 650 m alt., head of Coire Chearcaill, Knoydart, NG848030, 1990, DG Long 18158 (E); **H26:** on boulder, 380 m alt., north shore of Lough Alone, southern Ox Mountains, G3615, TL Blockeel 41/342; **H28:** on granite rock in open moorland, Carrownacreavy, G5173522909, RL Hodd; **H30:** on rock in river valley, Mullaghlea Glen, H04722466, RL Hodd; **H39:** basalt outcrops on heathland, 90 m alt., Giant's Causeway, C95564448, DF Chamberlain (E); **H40:** Eagle's Rock, Sawel, H6397, RL Hodd & DA Callaghan (DBN).
- 2.6.b. *Andreaea rothii* subsp. *falcata*. 74:** rock on hillside, 180 m alt., Artfield Fell, NX232660, MO Hill; **H39:** basalt rocks, 190 m alt., Lough Naroon north, D004176, SDS Bosanquet, JL Denyer & R Weyl.
- 2.8. *Andreaea megistospora*. H4 in ():** Musheragh Mountain, W38, 1851, Carroll (BM, see Murray, 1988), record omitted incorrectly from current Census Catalogue.
- 4.2. *Atrichum tenellum*. 14:** sandy soil on open path side, 80 m alt., Broadwater Warren, TQ5588436487, PJ Howarth; **H28:** muddy ditchside by road, north of The Gap, Ox Mountains, G374170, SV O'Leary.

- 5.1. *Oligotrichum bercynicum*. H8:** on bare gritty soil at edge of path, ca 430 m alt., NE slopes of Seefin Mountain, R646184, TL Blockeel, MO Hill & M Eakin 41/018; **H30:** on steep, broken ground, NE of summit of Cuilcagh, H1242428050, RL Hodd (DBN); **H36:** old waste from roadside quarry, 320 m alt., by Lough Lark, Sperrin Hills, H646925, EM Kungu & DF Chamberlain.
- 6.1. *Pogonatum nanum*. H2:** delete the entry, the voucher (Cromaglaun, D. Moore, 1873, DBN) is *P. aloides*, det. DT Holyoak; other specimens lack capsules and are not identifiable; **H8:** sandstone-derived soil in small quarry, Knockfeeina west, R43423604, SDS Bosanquet & JL Denyer; **H35:** delete the entry, the record from Lough Salt (HW Lett, 1910) cannot be assigned to a hectad, as there are two loughs of this name in the vice-county.
- 6.3. *Pogonatum urnigerum*. H37:** On stony soil in heath, Camlough Mountain, J0556524601, RL Hodd (DBN).
- 7.1. *Polytrichastrum alpinum*. H29:** on low rocky bluff, Conwal South, Arroo, G8547349655, RL Hodd (DBN).
- 7.2. *Polytrichastrum longisetum*. 47:** burnt heather moor, Trwyn Swch, Berwyn, SJ010296, M Lawley; **107:** on gravel by burn, 310 m alt., Allt Coir'a'Chruiteir, Ben Hee, NC39993413, GP Rothero 2012017.
- 8.1.b. *Polytrichum commune* var. *perigoniale*. 56:** on bare sandy soil on heather-covered bank, ca 100 m alt., Rainworth Heath, SK591595, TL Blockeel 41/446; **H8:** forestry track, 230 m alt., Garryarthur, R706167, SDS Bosanquet & GF Smith.
- 8.4. *Polytrichum strictum*. H18:** on *Calluna* hummock, with *Sphagnum rubellum*, Fairfield Bog, Tullamore, N387289, GF Smith; **H18:** on raised bog, 60 m alt., Woodfield Bog near Clara, N23, 1990, DG Long 18135 (E).

- 9.1. *Tetraphis pellucida*. 79:** on rotten stump, small valley in conifer plantation, 340 m alt., foot of Birnie Cleugh, Ettrick Water, NT19280929, DG Long 42253 (E).
- 10.1. *Tetradontium brownianum*. H27:** granite rock crevice on mountainside, Corslieve, F922128, DA Callaghan, protonemal leaves only; **H36:** rock crevice in a small ravine, 280 m alt., Sawelbeg, Sperrin Hills, H6424193470, EM Kungu & DF Chamberlain.
- 11.1. *Buxbaumia aphylla*. 63:** place in brackets, the sole record was made in 1946 (Hebden Bridge SD92, H Walsh).
- 12.1. *Diphyscium foliosum*. 57:** on humus at edge of turf over-topping limestone rock, ca 390 m alt., Thirkelow, 5km south of Buxton, SK051687, TL Blockeel 41/357.
- 14.3. *Encalypta rhabtoparpa*. H29:** scattered through small area of alpine calcareous grassland, 429 m alt., Keeloges, Arroo, G8123249751, RL Hodd, det. NG Hodgetts (DBN).
- 14.4. *Encalypta vulgaris*. H4:** limestone bridge, 90 m alt., Ketragh Bridge, R442029, CD Preston, F O'Neill & AT Walsh.
- 14.6. *Encalypta ciliata*. 65:** on ledges, north-facing limestone crag, Jeffery Pot Scar above Oughtershaw, SD87538313, 2011, DG Long 40530 (E).
- 16.1. *Entosthodon mühlenbergii*. H5:** wall top, 55 m alt., just NE of Glanworth Friary, R7568504387, SDS Bosanquet & GF Smith.
- 16.3. *Entosthodon attenuatus*. H26:** among wet rocks by waterfall, Ox Mountains, The Gap, G375161, S Pilkington.
- 16.4. *Entosthodon fascicularis*. H4:** soil of newly sown pasture, in gateway, Ballyvodane, W5380, MO Hill; **H21:** delete the entry, records from Dalkey and Killiney by D Orr are considered unreliable.
- 16.4A. *Entosthodon mouretii*. 1:** field, above Kynance Cove, SW61, 1962, ID Clear (NMW); **12:** Selborne, Milk Hanger, SU73, 1969, EC Wallace (NMW); **32 in ():** clover field, Castle Dykes, Weedon, SP6156, 1905, HN Dixon (NMW); **33 in ():** Brownhill, east side, SO8802, 1945, FDS Richardson (NMW); **34:** field, Yate, ST78, 1967, GW Garlick (NMW); **45:** thin soil over limestone, Lydstep Head, southwest, SS088975, 2006, SDS Bosanquet (NMW); **48 in ():** field, near Harlech, SH53, 1903, WR Sherrin (BBSUK). New to Britain (Bosanquet, 2012).
- 17.1. *Physcomitrium pyriforme*. 80:** on soil mound by ditch, disturbed woodland by river, 100 m alt., Kale Water north of Hownam Grange, south of Morebattle, NT78052337, DG Long & S Buchan 41546.
- 19.1. *Discelium nudum*. 42:** sticky grey clay on river bank, 200 m alt., Afon Cledan, Waen Rydd, SN87964526, SDS Bosanquet.
- 21.2. *Schistidium rivulare*. H2:** rocks by river, 145 m alt., Hollymount Bridge, west bank, W17009112, SDS Bosanquet & RL Hodd; **H28:** on rocks, by L. Easky, G4460424110, RL Hodd (DBN).
- 21.3. *Schistidium platyphyllum*. H39:** rocks in river, Bush River, Magherahoney, D07722912, SDS Bosanquet.
- 21.4. *Schistidium agassizii*. 96:** River Spey, upstream of Sherramore Lodge, NN5522493970, 2011, M Donald; **105:** River Gruinard, NG9835087735, 2011, J Forsyth (E).
- 21.5. *Schistidium apocarpum*. 47:** on sloping rock, Corndon Hill, SO312963, M Lawley; **73:** rocks near river, by stock watering point, above glen, 75 m alt., Kirkbean Glen, NX97145927, EM Kungu; **73:** on stones of wall, margin of woodland garden, 25 m alt., Cally Gardens, Gatehouse of Fleet, NX60445502, DG Long 42293 (E); **88:** rocks, 200 m alt., Upper

- Glen Artney, NN6915, EM Kungu & DF Chamberlain; **H30**: on rock in flushed stream valley, Dunmakeever, H1011627090, RL Hodd (DBN); **H40**: rock in flush, Ballyrisk More ASSI, C722247, RL Hodd & SDS Bosanquet.
- 21.8. *Schistidium pruinatum*. H40**: natural basalt outcrop, 220 m alt., Keady Mountain Quarry, C72202415, SDS Bosanquet.
- 21.9. *Schistidium strictum*. 57**: delete the entry, the pre-1903 record from Ashwood Dale by T Barker is improbable and unconfirmed, and a later specimen from Ravensdale, leg. LBC Trotter, 1947 (NMW, as *Grimmia apocarpa* var. *gracilis*) is *S. crassipilum*; **H2**: delete the entry, the record from Torc Cascade (D Moore, 1872) is unconfirmed; **H4**: delete the entry, which is based on a literature record from Blarney with no supporting specimen; **H30**: delete the entry, which is based on a literature record from Swanlinbar with no supporting specimen.
- 21.11. *Schistidium robustum*. 46**: abundant on one Ferroan dolomite rock on bank of mine spoil, Esgair Fraith Mine, SN74089120, SDS Bosanquet.
- 21.12. *Schistidium confertum*. H40**: delete the entry, which is based on a literature record from Benbradagh with no supporting specimen.
- 21.14.b. *Schistidium frigidum* var. *havaasii*. 92**: on rock and soil over S-facing broken shale crag, 450 m alt., N side of Quillichan Burn, Upper Glen Nocht, NJ302147, 2010, GP Rothero 2010510.
- 21.16. *Schistidium crassipilum*. 15**: on calcareous gravestone, Stone-in-Oxney churchyard, TQ940273, J Hendey; **20**: on stone ledge around base of south side of church, 155 m alt., Therfield church, TL33453708, M Burton; **52**: wall top, Menai Bridge carpark, SH554719, SDS Bosanquet; **68**: on concrete by bridge, 315 m alt., Buckham's Bridge, Upper Coquetdale, NT823107, TL Blockeel 41/291; **H27**: on kerbstones, 75 m alt., Bord na Móna offices, Bellacorick, F988195, TL Blockeel 41/325.
- 21.17. *Schistidium elegantulum*. 103**: on wall, along road between the village hall and the post office, Arinagour, Coll, NM22355725, C Austick; **110**: old concrete of disused coastal military base, ca 20 m alt., Mealasta, NA9924, NG Hodgetts 8070; **110**: top of old wall around castle, ca 20 m alt., Abhainn Suidhe, NB052076, NG Hodgetts 8091; **H2**: on wall of graveyard, Brosna, R1318, MO Hill; **H8**: wall top in graveyard, S of Feohanagh, R330247, RL Hodd & CD Preston; **H16 in ()**: near Renvyle, L66, 1831, unknown collector, det. HH Blom (BM, see Blom, 1996), record omitted incorrectly from Current Census Catalogue; **H26 in ()**: Cong [cited as Cony by Blom], M15, 1906, D McArdle, det. HH Blom (BM, see Blom, 1996), record omitted incorrectly from Current Census Catalogue; **H28**: on concrete of small bridge, 185 m alt., North-east margin of Easky lough, G448238, TL Blockeel 41/315.
- 22.2. *Grimmia crinita*. H21 in ()**: city wall, Dublin, O22, 1950, SW Greene, det. J Muñoz (Trinity College Dublin, see Blockeel, 2002).
- 22.5. *Grimmia montana*. 47**: on rock, Craig Rhiwarth, Llangynog, SJ054264, M Lawley.
- 22.7. *Grimmia alpestris*. 82**: delete the entry, the voucher (Traprain Law, NT57, 1925, JB Duncan, E) is *G. montana*, det. RD Porley; **90**: delete the entry, the voucher (Hare Craigs, West Ferry near Dundee, NO43, 1954, UK Duncan, E) is *G. montana*, det. RD Porley.
- 22.11. *Grimmia longirostris*. 47**: delete the entry, the voucher (Breidden Hill, SJ288139, 2009, SDS Bosanquet) is *G. muehlenbeckii*, det. RD Porley.

- 22.15. *Grimmia incurva*. 70:** on large boulder amongst small scree, near Bowscale Tarn, NY3356931284, P Martin, conf. RD Porley; **101:** Balliewilline Hill, near Campbeltown, NR7123, 1975, AG Kenneth, conf. AJE Smith (E).
- 22.20. *Grimmia trichophylla*. H37:** on rock in heath, Camlough Mountain, J0499425176, RL Hodd (DBN).
- 22.21. *Grimmia lisae*. H2:** on exposed top of sandstone outcrop ca 1 m above top of inundation zone on shore of lough, 22 m alt., shore of Upper Lake at Newfoundland Bay, V92548261, 2005, DT Holyoak 05-272 (BBSUK).
- 22.23. *Grimmia muehlenbeckii*. 47:** sunny igneous rock face, Breidden Hill west crag, SJ28861395, 2009, SDS Bosanquet, det. RD Porley; **49:** on boulders by lake, Llyn Crafnant, NE end, SH754615, SDS Bosanquet.
- 22.24A. *Grimmia anomala*. 88:** Loch nan Cat, Ben Lawers, NN64, 1902, E Cleminshaw, DA Jones & JB Duncan; **96:** Loch an Sgoir, Geal Charn, NN59, 1985, GP Rothero; **96:** Lochan Carn a'Chuilinn, above Glen Tarff, NH40, 2006, GP Rothero; **97:** Lochan a'Choire, Coire Ardair, Craig Megaidh, NN48, 1956, G Een; **H3:** flat boulder by lough, Lough Nambrackderg, W03446413, 2009, N Lönnell; **H26:** on small boulder at edge of lough, 380 m alt., north shore of Lough Alone, southern Ox Mountains, G36871578, TL Blockeel 41/339; **H28:** Easky Lough, G4423, 2003, NG Hodgetts. New to Britain and Ireland (Lönnell *et al.*, 2012).
- 22.25. *Grimmia decipiens*. H8:** igneous block in quarry, Ballinleeny Quarry, R49723357, SDS Bosanquet & JL Denyer.
- 22.27. *Grimmia ramondii*. 47:** on a boulder, Corndon Hill, SO310967, M Lawley.
- 23.1. *Racomitrium ellipticum*. H28:** N-facing crag, ca 400 m alt., East Lough Aghree, Carrowcullen, G52322868, JL Denyer JLD-B-12-05 (DBN).
- 23.2. *Racomitrium aciculare*. H19:** on rocks in old abandoned quarry, 130 m alt., Hill of Allen, N762209, M Eakin.
- 23.3. *Racomitrium aquaticum*. 74:** rock on hillside, 180 m alt., Artfield Fell, NX232660, MO Hill.
- 23.6. *Racomitrium sudeticum*. 110:** boulder under SW-facing cliff, ca 300 m alt., Cleicabhal, Glac Smearasmal, NB0808, NG Hodgetts 8089; **H36:** slopes of Sawel, H6162496960, RL Hodd & DA Callaghan (DBN); **H40:** summit of Sawel, H617973, RL Hodd & DA Callaghan (DBN).
- 23.7. *Racomitrium affine*. 72:** basalt rock, Brunswark, NY1878, 2011, EM Kungu; **90:** boulders at edge of river bank, 270 m alt., Glen Moy, NO402643, 2011, EM Kungu; **101:** Loch Coille-Bharr, NR784906, 2011, J O'Reilly; **112:** on rock near shore, Urie, Fetlar, Shetland, HU5933194085, 2008, AG Payne; **H31:** on rock slab, grassy slopes with gabbro outcrops, 290 m alt., north slope of Slievenagloch, Cooley Peninsula, J13640910, DG Long 42218 (E).
- 23.8. *Racomitrium heterostichum*. H19:** on rocks beside mast and track, Cupidstown Hill, O00412072, RL Hodd (DBN); **H5:** on rocks of summit cairn, 215 m alt., Corrin Forest, 2km south of Fermoy, W806958, MO Hill.
- 23.11. *Racomitrium ericoides*. 63:** wall top, Blackshaw Head, near Hedben Bridge, SD9727, 2010, J Turner; **H20:** amongst scree, pathside, Glendalough, T0896, P Martin; **H20:** abundant alongside track, Black Mountain, O04381057, RL Hodd (DBN); **H30:** in small area of mildly basic grassland, Aghaboy, H1649527066, RL Hodd (DBN); **H31:** on quarry floor, 75 m alt.,

- Ballymakellett, Drumenagh Hill, Ravensdale, J102105, M Eakin.
- 23.12. *Racomitrium elongatum*. 65:** moorland with lead spoil, Apedale, near Castle Bolton, SE0294, S Knight; **68:** semi-bare rock ledge, 355 m alt., Buckham's Walls Burn, Upper Coquetdale, NT814110, TL Blockeel 41/289; **78:** rock buttress by waterfall in steep gully, 320 m alt., Witch Linn, Talla Linfoots, Tweedsmuir, NT133202, 1996, DG Long & GP Rothero 26148 (E); **88:** amongst boulders in block scree, 910 m alt., gully at foot of SW cliffs, Ben Lawers, NN631410, 1990, DG Long 18332 (E).
- 25.1. *Campylostelium saxicola*. H8:** on damp sandstone rock by stream, 290 m alt., near Glenosheen, Ballyhoura Mountains, R650185, MO Hill.
- 26.1. *Blindia acuta*. 74:** on stone in flush, 180 m alt., Artfield Fell, NX232660, MO Hill.
- 28.1. *Seligeria pusilla*. 70:** shaded rock on cliff, above Crowdundle Beck, NY6933, M Lawley.
- 28.8. *Seligeria calcarea*. 57:** delete the entry, records from Taddington Dale and Via Gellia in Linton (1903) are unsubstantiated.
- 28.11. *Seligeria patula*. H29:** near-vertical shaley limestone with thin soil film, at base of E-facing crag, ca 270 m alt., Cloontyprughlish, G781478, 2000, DT Holyoak 00-592 (DBN); **H33:** on thin tufa film over wet limestone at base of N-facing crag, N of Glencreawan Lough, H023567, 2000, DT Holyoak 00-279, record previously published in Bulletin B.B.S. 79, p.49 (2002), but entry incorrectly omitted from current Census Catalogue.
- 30.1. *Fissidens viridulus*. 56:** on clayey marl in scrubby woodland, 60 m alt., Clarborough Tunnel Reserve, SK751826, TL Blockeel 41/428; **72:** on silt and sand deposits among rocks at edge of river, 100 m alt., by Glenarlie Bridge, R. Nith, below car park, NS834057, EM Kungu (E); **85 in ():** on ground in plantation, between Nether Grange and Burntisland Golf Course club house, NT2486, 1916, J McAndrew; **H8:** low soily bank in graveyard, Dromcolliher, R379211, RL Hodd & CD Preston.
- 30.2. *Fissidens crispus*. 14:** on sandstone blocks of bridge over stream, 110 m alt., Ashdown Forest, TQ488303, T Ottley 12110601.
- 30.3. *Fissidens pusillus*. 17:** on stone under water at spring head, ca 170 m alt., Great Foxmoor Wood, TQ122435, HW Wallis; **73:** low rocks at edge of water immediately above dam, 50 m alt., Kirkbean Glen, NX97515915, EM Kungu (E); **H19:** thin turf on tufa outcrop, with *Entodon concinnus*, ca 120 m alt., Hartwell Upper, N944214, NG Hodgetts *et al.* 8184.
- 30.4. *Fissidens gracilifolius*. 70:** stone wall below footbridge, over Castle Beck, Naworth Estate, NY561626, RJ Fisk.
- 30.5. *Fissidens incurvus*. H8:** disturbed ground by track, Friarstown, R5849, MO Hill.
- 30.6.b. *Fissidens bryoides* var. *caespitans*. 63:** stones in small rivulet, Walshaw Wood, near Hardcastle Crags, SD974307, 2009, J Turner; **92:** on vertical peaty sides of narrow watercourse, Culsten Burn, Crannach, Deeside, NJ389004, 2011, AG Payne.
- 30.9. *Fissidens crassipes*. 14:** on flints on bed of bourne stream, locally abundant, 20 m alt., Lewes, TQ401094, T Ottley 12101501; **H12:** silty *Salix* base by river, Hawkshaw's Bridge, S88161974, SDS Bosanquet & CD Preston; **H39:** stonework of bridge over river Main, Randalstown, J0890, MO Hill.
- 30.10. *Fissidens rufulus*. H19:** delete the entry, the voucher (bridge buttress at water level, Derryvullagh Bog, near Athy, RD Fitzgerald, 1969, BBSUK) is *F. crassipes*.
- 30.11. *Fissidens exilis*. 68:** clay bank side, track

- down to Brinkburn Priory, NZ116985, D McCutcheon & A McLay; **H11**: earth bank by burn in plantation woodland, with *Dicranella heteromalla*, ca 20 m alt., Binscarth Wood, Finstown, HY351141, NG Hodgetts 8041; **H12**: bank in woodland, Abbey Bridge, Tintern Abbey, S79400985, SDS Bosanquet & CD Preston.
- 30.12. *Fissidens celticus*. H12**: stream bank in wooded valley, Tintern Abbey Woods, S79221019, SDS Bosanquet & CD Preston.
- 30.14. *Fissidens osmundoides*. H8**: in wet recess on rocky bank by road, ca 180 m alt., near Lacka Upper, ca 3km south of Broadford, R3419, RL Hodd & TL Blockeel 41/026.
- 30.16. *Fissidens dubius*. 31**: on bare calcareous soil at top of steep grassy slope, 40 m alt., Great Stukeley Lodge railway cutting, TL234758, M Burton.
- 30.20. *Fissidens fontanus*. 57**: sparsely on submerged face of gritstone blocks at edge of canal under roadbridge, 160 m alt., Peak Forest Canal, New Mills, SJ99698490, TL Blockeel 41/432; **H1**: on sandstone boulder in clear water, at approximately 40 cm depth, 17 m alt., Lough Leane, Tomies East, south of boat launch, V9090, 2010, UM King; **H2**: on silty substratum over rock, in ca 25 cm depth of water, 17 m alt., near Glen Fesk Rowing Club boat house, Castelough Bay, SE corner of Lough Leane, V975879, 1996, C Lennon, det. DL Kelly; **H37**: 84 m alt., Lough Ross, near Crossmaglen, H881151, Y McElarney (DBN).
- 31.1. *Pleuridium acuminatum*. 92**: locally abundant on soil of root plate of fallen *Salix caprea*, by Tullich Burn (east side), Crannach, Deeside, NO379992, 2011, AG Payne.
- 31.2. *Pleuridium subulatum*. 77**: earth bank above stream, ca 300 m alt., below Lower Cowgill Reservoir, NT00842960, EM Kungu & DF Chamberlain (E); **H5**: arable field, ca 40 m alt., Aghern, 3km west of Conna, W896927, TL Blockeel 41/039; **H27**: bare soil beside track, Enniscoe House, G142142, DA Callaghan; **H40**: road bank, south of Bond's Glen, C502069, N Lönnell.
- 33.1. *Trichodon cylindricus*. H5**: arable field, Ballygarrane, W of Castletownroche, R640029, MO Hill.
- 34.1. *Ditrichum pusillum*. H34 in ()**: Rossnowlagh, G86, 1908, WF Johnson, conf. DT Holyoak (DBN).
- 34.3. *Ditrichum lineare*. 91**: gravelly soil at edge of path, forestry plantation, 233 m alt., Myriehill Wood, N of Banchory, NJ70810135, 2011, D Bell 946.
- 34.6. *Ditrichum zonatum*. H38 in ()**: Slieve Donard, Mourne Mountains, J32, 1928, A Sutton, det. WE Nicholson (BBSUK).
- 34.8. *Ditrichum flexicaule*. 9**: ca 20 m alt., Church Ope Cove, Portland, SY701712, T Ottley 12111903.
- 34.9. *Ditrichum gracile*. 16**: chalk grassland, Shore Hill, Kemsing Down, TQ551595, 2006, J Hende; **41**: dune slack, 5 m alt., Whiteford Burrows, SS44539549, SDS Bosanquet; **70**: on gravelly, lime-rich ground near gate, Siddick Pond, Workington, NY000305, S Pilkington & BBS group; **70**: on calcareous flushed slope, moorland stream valley, 220 m alt., Rairing Sike, north of Robin's Rig, Spadeadam Forest, NY65407135, DG Long 41514; **72**: rock ledge by the river, 150 m alt., confluence of the White and Black Esk, south bank, NY253907, EM Kungu; **77**: concrete by walkway, 150 m alt., Falls of Clyde walkway, by the Power Station feeder pipes, NS884416, DF Chamberlain; **78**: on rock outcrop by stream, moorland valley, ca 440 m alt., Juniper Burn S of Peebles, NT24443518, DG Long 41848; **82**: limestone rocks in turf,



△ *Dicranum polysetum* on old colliery spoil, Shirebrook, Derbyshire. T. Blockeel

5 m alt., Catcraig near Barn's Ness, NT7177, 1995, DG Long 25906 (E); **100**: on limestone boulder beside artificial cave, Corrie, Arran, NS023425, JD Sleath; **105**: stony sandy turf, sand dunes, 15 m alt., W side of Achnahaird Bay, NC015136, 2000, DG Long 29189 (E); **H8**: calcareous grassland, 4-5 km west of Askeaton, R2924450590, K McNutt & S Thomas (DBN); **H13**: calcareous grassland, 3 km east of Bagnelstown, S7388661354, JR Roche & F Devaney (DBN); **H24**: on gravelly edge of track to mast, Corn Hill, N191843, RL Hodd (DBN); **H26**: on calcareous gravel, track in conifer plantation, ca 180 m alt., north slope of Mullaghanoe Hill, SE of Charlestown, M52229937, DG

Long *et al.* 41914; **H27**: crumbling tarmac in disused driveway, 10 m alt., north side of Furnace Lough, NW of Newport, L963980, TL Blockeel 41/333; **H27**: on gravel bank, woodland margin in old quarry, ca 30 m alt., woodland SE of Turlough, M21449286, DG Long *et al.* 41933; **H29**: beside track, Seltannasaggart, G905198, RL Hodd (DBN); **H30**: on gravel floor at entrance to quarry, 120 m alt., Cornanea Glebe, N314987, M Eakin; **H30**: in small area of mildly basic grassland, Aghaboy, H1649527066, RL Hodd (DBN).

41.1. *Amphidium lapponicum*. 86: north side of Earl's Seat, Campsie Hills, NS58, 1966, RWM Corner.

42.1. *Rhabdoweisia fugax*. 93: exposed granite

- rocks, ca 500 m alt., near summit of Mither Tap, Bennachie, NJ6822, 1990, DG Long 18314 (E).
- 42.2. *Rhabdoweisia crispata*. H28:** in deep shade on underside of large granite boulder, Farbreagabeg, Ox mountains, G4627324434, RL Hodd, det. NG Hodgetts (DBN).
- 42.3. *Rhabdoweisia crenulata*. H29:** on sheltered acidic rockface, S. of Slieve Anierin, H0220614990, RL Hodd (DBN).
- 43.2. *Cynodontium strumiferum*. 93:** exposed granite rocks, ca 500 m alt., near summit of Mither Tap, Bennachie, NJ6822, 1990, DG Long 18318 (E).
- 43.3. *Cynodontium jenneri*. 86 in ():** rocks, near the Whangie, Kilpatrick Hills, NS48, 1950, JR Lee & AC Crundwell (E).
- 45.2. *Dichodontium flavescens*. 68:** embedded in sand on riverside boulder, 35 m alt., R. Aln, Hulne Park, Alnwick, NU173143, TL Blockeel 41/295; **78:** on rock on vertical bank of stream, moorland valley, 445 m alt., Juniper Burn, south of Peebles, NT24403530, DG Long 42187 (E).
- 46.1. *Dicranoweisia cirrata*. H30:** on stone wall along old farm road, ca 240 m alt., Leiter, Cornasaus, Baileboro, N729978, M Eakin.
- 48.2. *Kiaeria blyttii*. 50:** on rock, Craig Berwyn, SJ076335, M Lawley.
- 48.4. *Kiaeria glacialis*. 107:** on ledge at base of quartzite crag, 890 m alt., Upper Coire a'Mhadaidh, Conival, NC305201, GP Rothero 2012002.
- 52.1. *Dicranella schreberiana*. 38:** stubble field, 100 m alt., Rugby, SP517726, NJ Law.
- 52.2. *Dicranella grevilleana*. H20:** delete the entry, which is based on an improbable record from Lugnaquillia by D Moore with no supporting voucher.
- 52.6. *Dicranella staphylina*. H28:** on bare patches of soil in field, 60 m alt., Curry, ca 4km north of Charlestown, G492062, TL Blockeel 41/320.
- 52.8. *Dicranella cerviculata*. 32:** edge of track along bottom of disused quarry, 70 m alt., Sandy Spinney Quarry, SP927782, RH Carter; **56:** on bare peaty soil by pool in fragment of wet heath, ca 95 m alt., Rainworth Heath, SK590591, TL Blockeel 41/442; **H40:** tall peat face shaded by birch, 30 m alt., Ballynahone Bog ASSI, H85329785, SDS Bosanquet.
- 53.1. *Dicranum polysetum*. 57:** in young, thin oak/birch woodland on shale of former colliery tip, 85 m alt., Shirebrook Wood, SK535665, TL Blockeel 41/379.
- 53.5. *Dicranum majus*. H12:** woodland bank, 20 m alt., Sow Valley, T044273, SDS Bosanquet.
- 53.9. *Dicranum flexicaule*. 90:** on peaty boulder under *Calluna*, foot of NE-facing cliffs, 430 m alt., Carloch Corrie, Loch Lee, NO39477828, 2011, DG Long 41044-a (E).
- 53.11. *Dicranum scottianum*. H26:** on near-vertical crag in gully, ca 250 m alt., south side of The Gap, southern Ox Mountains, G375160, TL Blockeel 41/336.
- 53.13. *Dicranum montanum*. 81:** on base of old *Betula*, damp *Acer/Betula* woodland, ca 245 m alt., Eastside Wood, Spottiswoode, NT61115044, DG Long 41418.
- 54.1. *Paraleucobryum longifolium*. 107:** on shaded boulder in scree, 790 m alt., Upper Coire a'Mhadaidh, Conival, NC305202, GP Rothero 2012001.
- 55.2. *Dicranodontium asperulum*. 69:** amongst block scree, Knock Ore Gill, NY7137430795, P Martin.
- 56.2. *Campylopus subulatus*. H39:** track near quarry, Sheepheads, S of Mallusk, J294801, MO Hill; **H40:** track edge, Springwell Forest, C77202761, RL Hodd, SDS Bosanquet &

EM Kungu (DBN).

- 56.3. *Campylopus schimperi*. H2:** delete the entry, the locality (Derrymore Glen) is in H1; **H20:** delete the entry, records from Lough Bray by D Orr are considered unreliable.
- 56.5. *Campylopus fragilis*. 63:** delete the entry, there are no recent records and earlier records are unreliable; **80:** in crevice of rock outcrop, calcareous upland valley, 335 m alt., Robert's Linn, Slitrig Water, NT54150245, DG Long 42053 (E).
- 56.7. *Campylopus flexuosus*. 56:** on acid humus over sandstone on steep north-facing bank with oak and pines, 75 m alt., High Rocks, Clipstone, SK580643, TL Blockeel 41/412.
- 56.10.a. *Campylopus atrovirens* var. *atrovirens*. 74:** flushed rock on hillside, 180 m alt., Artfield Fell, NX232660, JE Smith.
- 56.10.b. *Campylopus atrovirens* var. *falcatus*. H1:** crevices in large slabby rock near path in E-facing mountain corrie, ca 630 m alt., Brandon Mountain, Q46391180, 2006, NG Hodgetts 6598 (DBN).
- 56.13. *Campylopus brevipilus*. H39:** coastal heath, Giant's Causeway, C956445, MO Hill.
- 57.2. *Leucobryum juniperoideum*. 72:** rotting wood under open canopy, on steep slope, 75 m alt., Border Bridge over the Liddel Water, at Kilnholme, NY4310677496, DF Chamberlain; **102:** on peaty ledges on low cliff, rocky slope above sea shore, ca 15 m alt., near Rubha Liath, Loch Tarbert, Jura, NR53628172, DG Long 41877.
- 58.1. *Scopelophila cataractae*. 44:** metal-toxic clay nodules, Nant y Bai leadmine, SN7813244689, SDS Bosanquet.
- 60.1.a. *Weissia controversa* var. *controversa*. 38:** bare soil on path leading down from road to canal towpath, Stratford upon Avon canal, Earlswood, SP11507509, NJ Law.
- 60.1.b. *Weissia controversa* var. *crispata*. 60:** limestone grassland, Cringlebarrow, SD4874, 1978, MJ Wigginton; **H38:** mortar of bridge over canal, 60 m alt., Tanvally, J187428, SDS Bosanquet; **H39:** mortar of roadside wall, near Portmuck, D4601, MO Hill; **H8:** bridge mortar, Mahoonagh, R313314, SDS Bosanquet & JL Denyer.
- 60.3. *Weissia rutilans*. 88:** earth banks on steep grassy slope, 300 m alt., Strath a' Ghlinne, below crags, NN677169, EM Kungu & DF Chamberlain; **111:** on calcareous sandstone, Hill of Heddle, Finstown, Orkney, HY3513, J Branscombe, conf. NG Hodgetts.
- 60.5.a. *Weissia brachycarpa* var. *brachycarpa*. 59:** on loamy, mildly acidic soil in arable set-aside field, 60 m alt., NE of Rainhill, SJ4967591653, DA Callaghan 1380.
- 60.5.b. *Weissia brachycarpa* var. *obliqua*. H8:** pasture by limestone crag, Kilbehy, R377483, SDS Bosanquet & JL Denyer; **H12:** forestry track, Tinnacarrick, S80002278, SDS Bosanquet & CD Preston.
- 60.6. *Weissia squarrosa*. 44:** sparsely vegetated soil derived from Old Red Sandstone, 80 m alt., near west entrance to chapel yard, Croesyceiliog, SN413166, SDS Bosanquet; **56:** on clayey marl at edge of arable field, 75 m alt., Caddow Lane, near Clarborough, SK752816, TL Blockeel 41/429.
- 60.10. *Weissia sterilis*. 6:** delete the entry, the voucher (on bare patch of acid loam overlying sandstone, Highbury Hill, N. of Hallatrow, 2008, FJ Rumsey & HJ Crouch, BBSUK) is *Pseudephemerum nitidum*.
- 60.12.b. *Weissia longifolia* var. *angustifolia*. 16:** on chalk soil, White Hill, Shoreham, TQ529618, 1993, J Henney.
- 61.1. *Tortella tortuosa*. 16:** damp concrete wall beside stream, 75 m alt., Bedgebury Pinetum, TQ721335, M Parratt, det. J Henney.
- 61.2. *Tortella bambergeri*. 33:** base of church

- wall, Bourton-on-the-Hill, SP1753332547, P Martin; **72:** in hollows of vitrified rock on burial site, 140 m alt., Breconside, NX84168838, EM Kungu & V Heppel, conf. SDS Bosanquet; **72:** on crevices of outcrop, steep grassy rocky hillside, 260 m alt., south slope of Druid Hill, Scaur Water, NX80569882, DG Long 42282 (E); **74:** on basic rock, 180 m alt., Artfield Fell, NX232660, MO Hill; **105:** calcareous rocks on N-facing slope on summit plateau, ca 850 m alt., Beinn Eighe, Ruadh-stac Beag, NG97406163, NG Hodgetts 8171; **H8:** on ledge of old red sandstone crag, ca 410 m alt., NE slopes of Seefin Mountain, R643188, TL Blockeel, MO Hill & M Eakin 41/019.
- 61.9. *Tortella flavovirens*. 27:** on consolidated soil above salt marsh and below sand dunes and shingle ridge, with *Limonium binervosum* subsp. *anglicum*, 0 m alt., The Marrams, Blakeney Point, TG02594590, M Ghullam & RW Ellis; **73:** in rock crevices, rocky sea shore, 1 m alt., west side of Brighthouse Bay, NX63454576, DG Long 42284 (E).
- 62.2. *Trichostomum crispulum*. H5:** on gravelly ground by forest road in conifer plantation, ca 250 m alt., Knockduv, Ballyhoura Mountains, R572170, TL Blockeel 41/035.
- 62.3. *Trichostomum tenuirostre*. 92:** among rocks by small stream, 140 m alt., My Lord's Throat, south of Auchleven, on a tributary of the River Don, NJ633196, 2011, EM Kungu; **92:** crevice in earthy rocky bank close to water's edge, Tullich Burn, Crannach, NJ377014, 2011, AG Payne.
- 62.4. *Trichostomum hibernicum*. 88:** on damp schist ledge by cascade, E-facing calcareous gully, 705 m alt., east slope of Meall nan Tarmachan, above dam, NN59373938, 2011, DG Long & D Bell 41392 (E).
- 65.1.a. *Hymenostylium recurvirostrum* var. *recurvirostrum*. 52:** one large patch on calcareous sand in dune slack, 10 m alt., Newborough Warren, SH41766326, SDS Bosanquet; **H21:** in tufa on road cutting, in bedded limestone exposure, ca 55 m alt., Irishtown, Palmerston, O064353, M Eakin; **H30:** In tufa spring, Commas, H1357926591, RL Hodd (DBN).
- 67.1. *Gyroweisia tenuis*. H39:** on brickwork beside stream, 6-Mile Water, J1685, DA Callaghan.
- 68.2. *Gymnostomum calcareum*. 6:** on moist tufa on wall of disused limestone quarry, Fry's Hill, near Axebridge, ST43855513, S Pilkington.
- 68.3. *Gymnostomum aeruginosum*. 73:** sandstone of fallen railway bridge, Routin Bridge, NX886797, EM Kungu (E).
- 70.1. *Leptobarbula berica*. 57:** on small exposure of Magnesian Limestone at ground level in thin turf, 95 m alt., Pleasley Vale, south of Shirebrook, SK530653, TL Blockeel 41/377.
- 72.1. *Ephemerum recurvifolium*. 14:** on bare chalky soil on slope, 80 m alt., Malling Chalk Pits, Lewes, TQ430112, T Orltley 12120801.
- 72.3. *Ephemerum hibernicum*. H9:** compacted wet soil on track between areas of bog, with *Archidium alternifolium*, 20 m alt., Tullaher Bog, Q954625, 2004, NG Hodgetts 4926, det. DT Holyoak; **H26:** unshaded partly bare mud at base of sparse low *Carex* and *Agrostis stolonifera* in inundation-zone beside river/Lough Mask, ca 18 m alt., E bank of Cloon River W of Partry, M13447231, 2003, DT Holyoak 03-546 (DBN); **H27:** silty soil high in inundation-zone on river bank, shaded beneath *Salix cinerea* carr, ca 18 m alt., W bank of Cloon River W of Partry, M134725, 2003, DT Holyoak 03-551 (DBN); **H29:** on drying mud at edge of lake, partly shaded by patchy low sedges, rushes and herbs, ca 39 m

- alt., NW end of Rinn Lough, N093943, 2000, DT Holyoak 00-761 (BBSUK); **H30**: clay with limestone rocks on shore of lake, ca 0.3 m above water-level, with low *Carex*, *Juncus* and herbs, ca 45 m alt., shore of Lough Oughter W. of Inishconnell, H35730706, 2001, DT Holyoak 01-683 (DBN). Records for H26, H27, H29 and H30 are taken from Holyoak & Bryan (2005).
- 72.7. *Ephemerum minutissimum*. 38:** stubble field, 80 m alt., Newton Regis, SK27490816, NJ Law, grown to maturity ex situ; **H8**: steep earthy bank, right bank of R. Feale, near Mountcollins Bridge, R157187, MO Hill.
- 74.2. *Dialytrichia saxicola*. 3:** on shaded tarmac of pathside, 75 m alt., St Andrew's churchyard, Ashburton, SX755697, M Pool.
- 75.1. *Pseudocrossidium hornschuchianum*. 73:** on gravelly soil, rocky sea shore, 2 m alt., west side of Brighthouse Bay, NX63504579, DG Long 42285 (E).
- 76.1. *Bryoerythrophyllum recurvirostrum*. H18:** bare peaty and marly hummock, Finnamoses, Lough Boora Parklands, N213207, GF Smith.
- 76.2. *Bryoerythrophyllum ferruginascens*. 1:** old mine spoil in dunes, 70 m alt., Gear Sands, SW7693455204, DA Callaghan 1450; **6:** thin soil over rock patch in short limestone turf, Brean Down, ST2888258926, DA Callaghan 1443; **35:** on mine waste in disused colliery, 320 m alt., Cwn Du, Pentre-Piod, near Pontypool, SO24510218, S Pilkington; **58:** on gravelly soil at edge of tarmac road, ca 295 m alt., near Shooter's Clough Bridge, west side of Goyt Valley, SK012747, TL Blockeel 41/397; **68:** bare soil over slightly basic rocks, 330 m alt., Buckham's Walls Burn, Upper Coquetdale, NT819108, TL Blockeel 41/287; **74:** gritty edge of tarmac road, 70 m alt., near Glassoch Bridge, NX332694, MO Hill; **78:** on thin soil on rocks by stream, moorland valley, 413 m alt., Juniper Burn, south of Peebles, NT24453517, DG Long 42190 (E); **H26:** gravelly path, Slieve Gamp (Ox Mountains), G363171, SV O'Leary; **H36:** silty soil beside road, nr Oughtmama Burn, H6168297046, DA Callaghan.
- 77.1. *Leptodontium flexifolium*. H8:** on roots of upturned pine, Seefin Mountain, R643188, MO Hill.
- 78.1.b. *Barbula convoluta* var. *sardoa*. 38:** in thin soils on edge of track surfaced with crushed hardcore and old tarmac waste, Austrey, SK30020701, NJ Law; **73:** 30 m alt., Irongray Church grounds, NX914795, EM Kungu; **77:** rocks by track, New Lanark, at entry to SWT Reserve, NS84W, DF Chamberlain (E); **H18:** thin soil on limestone rock, the Mesolithic site, Lough Boora Parklands, N162182, GF Smith.
- 79.1. *Didymodon acutus*. 44:** locally abundant on gravelly track edge in dune slack, 5 m alt., Pendine Burrows, SN25720755, SDS Bosanquet; **63:** on calcareous gravel at edge of track, 275 m alt., Scamonden Dam, SE055166, TL Blockeel 41/361, replaces previous records, which are misidentifications of *D. vinealis* or are unconfirmed; **H18:** delete the entry, the vouchers (R. Toberlin, Ballycollis, NMW & BBSUK) are *D. luridus*, det. DT Holyoak; **H27:** delete the entry, the voucher (mud-capped wall, Mallaranney, WR Megaw, 1927, BEL) is *D. fallax*, det. DT Holyoak; **H38:** delete the entry, the vouchers (Ballynafeigh WR Megaw, 1930, and Kirkiston, WR Megaw, 1929, BEL) are *D. fallax*, det. DT Holyoak.
- 79.4. *Didymodon nicholsonii*. 28:** on tarmac pavement, at base of wall, North Runcton, near King's Lynn, TF64421573, CR Stevenson; **52:** concrete kerb, Menai Bridge carpark, SH554719, SDS Bosanquet; **H23:**

- horizontal concrete of path by canal edge, part shaded beneath bridge, 90 m alt., beside Royal Canal by Ballina Bridge, N388510, 2007, DT Holyoak 07-255 (BBSUK); **H27**: on tarmac road, near Owenboy Nature Reserve, G0217, MO Hill; **H28**: on tarmac by road, ca 140 m alt., north shore of Lough Talt, southern Ox Mountains, G3915, TL Blockeel 41/346; **H31**: on tarmac, disused road, 25 m alt., Riverstown old bridge, Cooley Peninsula, J16470665, DG Long 42228 (E); **H39**: on asphalt pavement, Mallusk, J2883, MO Hill.
- 79.7. *Didymodon vinealis*. 70**: base of north-facing church wall, Wigton, NY2548, MO Hill.
- 79.9. *Didymodon luridus*. 76**: stonework, by the Centre, Lochwinnoch Nature Reserve, NS358580, DF Chamberlain *et al.* (E); **H18 in ()**: calcareous soil, beside R. Toberlin, Ballycollis, N42, 1957, JS Thomson, det. DT Holyoak (BBSUK); **H27**: on a wall, 40 m alt., Shanaghy, G135407, EM Kungu (E).
- 79.11. *Didymodon sinuosus*. 47**: on stonework by canal, 70 m alt., Shropshire Union Canal, Pentreheylin Hall near Llanymynech, SJ2519, 1992, DG Long 21875 (E); **H29**: on limestone boulder, W of Glencar waterfalls, G753438, 2000, DT Holyoak 00-505, record previously published in Bulletin B.B.S. 79, p.46 (2002), but entry incorrectly omitted from current Census Catalogue; **H33**: on soil over limestone by river in wooded ravine, near Pollreagh, H119333, 2000, DT Holyoak 00-420, record previously published in Bull BBS 79, p.46 (2002), but entry incorrectly placed in brackets in current Census Catalogue; **H39**: wall top, 35 m alt., Soldierstown Canal, J148627, SDS Bosanquet.
- 79.12. *Didymodon topiaceus*. H31**: on tufa seepage of masonry wall, 10 m alt., Banktown, at turn off main road to Sunnyside Cottages, O136771, M Eakin.
- 79.13. *Didymodon spadiceus*. 63**: delete the entry, the only available voucher (Gargrave SD95, T.L. Blockeel, 1975) is *D. insulanus*; other records are unconfirmed.
- 79.15. *Didymodon tomaculosus*. H4**: with *Dicranella schreberiana* and *Poblia melanodon* in field of wheat stubble, 95 m alt., Two Gneeves, WNW of Cecilstown, R449029, CD Preston, F O'Neill & AT Walsh.
- 79.16. *Didymodon ferrugineus*. H8**: calcareous grassland, Aughinish Island complex, R2832052660, S Barron, K Leyden & S Thomas (DBN); **H24**: on track to mast, Corn Hill, N193846, RL Hodd (DBN); **H4**: parapet of limestone bridge, 90 m alt., Ketragh Bridge, R442029, CD Preston, F O'Neill & AT Walsh; **H8**: floor of igneous quarry, Ballinleeny Quarry, R496335, SDS Bosanquet & JL Denyer.
- 82.3. *Aloina aloides*. H5**: mortared limestone wall, Buttevant, R543090, MO Hill & GF Smith; **H26**: on damp calcareous gravel by old house, roadside, ca 96 m alt., near Kilmovee east of Kilkelly, M54069373, DG Long *et al.* 41916.
- 82.4. *Aloina ambigua*. H5**: bare earth banks on top of old stabilised coastal sand dune, 10 m alt., Claycastle, Youghal, X09977595, 2006, NG Hodgetts 6975 (DBN).
- 83.2. *Tortula schimperi*. 26**: earth mound under trees, small copse, Coney Weston, TL969782, RJ Fisk; **27**: mound of bare soil in churchyard, Denton, TM286873, M Ghullam *et al.*; **28**: sides of ditch bordering wood, 30 m alt., Stow Bardolph, Church Wood, TF6311905360, RJ Fisk; **68**: gritty soil near base of sycamore trunk, 130 m alt., Shilbottle churchyard, NU195087, TL Blockeel 41/294.
- 83.6. *Tortula marginata*. 41**: inside ruined castle, 15 m alt., Kenfig Castle, SS800826,

- SDS Bosanquet; **70**: on shady vertical sandstone rock face by river, 25 m alt., west bank of River Eden, Wetheral Woods, south of Wetheral, NY46715357, DG Long 41463; **70**: sandstone, Holme Cultram Abbey, Abbeytown, NY177508, CD Preston.
- 83.12. *Tortula atrovirens*. H16**: delete the entry, the record from Connemara (T Taylor, 1836) is vaguely localised and is unconfirmed.
- 83.14. *Tortula lanceola*. H38 in ()**: Saintfield, Reid's Barr Meadow, J46, 1916, CH Waddell, conf. DF Chamberlain (BEL).
- 83.15. *Tortula wilsonii*. 4**: exposed soil on steep grass bank at cliff-top, 30 m alt., Hartland Quay, SS2230224701, DA Callaghan 1427.
- 83.16. *Tortula viridifolia*. H39**: basalt shelf in cliff, The Gobbins Cliffs, Island Magee, J4897, 1994, P Hackney, det. DT Holyoak (BEL).
- 83.17. *Tortula modica*. H12**: path edge, Tinternbridge church, S80180916, SDS Bosanquet & CD Preston; **H15**: delete the entry, the record (Woodford, AJE Smith, 1962) is poorly localised and no specimen has been traced.
- 83.19. *Tortula protobryoides*. H21**: delete the entry, records from Howth by D Orr are considered unreliable.
- 84.1.b. *Phascum cuspidatum* var. *piliferum*. 28**: salted road verge, 3 m alt., Terrington St. John, slip road off A47, TF53681481, CR Stevenson.
- 84.1.c. *Phascum cuspidatum* var. *schreberianum*. 11**: a few plants with abundant var. *cuspidatum*, Upham, SU5320, 2011, SDS Bosanquet.
- 85.1. *Microbryum starckeanum*. 14**: 65 m alt., Malling Chalk Pits, Lewes, TQ429114, T Ottley 12120401; **H4**: delete the entry, which is based on a vaguely localised record near Cork, and may not be in this vice-county; **H38**: delete the entry, specimen in BEL (Crawfordsburn, SA Stewart, 1869) is *M. davallianum*, det. DT Holyoak, and an earlier record from Holywood is based on a literature reference and is unconfirmed; **H39**: delete the entry, which is based on a literature record from the Ballysillan Area, Belfast, and is unconfirmed.
- 85.2.a. *Microbryum davallianum* var. *davallianum*. 16**: stubble field on chalk, Crowdleham, TQ567592, 2004, J Hendey; **82**: limestone sea cliff, Scateraw, NT7375, 1976, DF Chamberlain & DG Long B263 (E); **H8**: grassland, Aughinish Island complex, R2676552460, K McNutt, K Leyden & S Thomas (DBN).
- 85.2.b. *Microbryum davallianum* var. *commutatum*. 13**: between short grass on footpath, on chalk, Highdown Gardens, Worthing, TQ095043, 1992, GW Bishop (BBSUK).
- 85.3. *Microbryum rectum*. H4**: on bare earth on limestone ledge by road, ca 110 m alt., Lis Carroll, R45311218, TL Blockeel & RL Hodd 41/030.
- 85.4. *Microbryum curvicollum*. H16**: delete the entry, which is based on a literature record from Benllettery with no supporting specimen and is highly improbable.
- 86.2. *Henediella macrophylla*. 3**: on damp shaded soil, 15 m alt., The Byes, Sidmouth, SY129884, M Pool; **53**: earth by badger sett, near Washdike Farm, E of Donington, TF237348, MO Hill; **54**: on compacted soil path running along top of old sea bank lined with mature trees, SE of Leverton Lucasgate, TF424470, R Harding.
- 86.3. *Henediella heimii*. 73**: car park edge, 8 m alt., Brighthouse Bay, NX63654580, DG Long, V Heppel & S McBride; **H21**: edge of salt marsh, 1 m alt., North Bull Island, O23, 1993, DG Long 23311 (E).

- 89.1.a. *Syntrichia ruralis* var. *ruralis*. 73:** on sandy soil on rocks, rocky sea shore, 2 m alt., west side of Brighthouse Bay, NX63504579, DG Long 42287 (E); **112:** thin coastal vegetation over slabby rock, Out Skerries, HU6836071937, 2011, AG Payne; **H26:** on concrete wall top, lake shore, 84 m alt., Urlaur Priory, Urlaur Lough, M50868936, DG Long et al. 41918 (E); **H28:** on wall, Curry, G493062, RL Hodd, TL Blockeel & DA Callaghan (DBN); **H5:** on chippings of grave, graveyard W of Doneraile, R5908, MO Hill.
- 89.1.b. *Syntrichia ruralis* var. *ruraliformis*. H5:** wall top, 55 m alt., Glanworth, R75700442, SDS Bosanquet & GF Smith, conf. MO Hill; **H8:** gravelly track, Ballingarry, R414362, SDS Bosanquet & JL Denyer, conf. MO Hill.
- 89.3.b. *Syntrichia montana* var. *montana*. 92:** north side of retaining wall, south end of Loch Tomnakeist, Crannach, NO393983, 2011, AG Payne; **H5:** fallen off a roof, Buttevant, R5408, MO Hill.
- 89.4. *Syntrichia princeps*. H39:** on NE-facing limestone cliff at base of gully, ca 260 m alt., Sallagh Braes, D34610481, NG Hodgetts 8028.
- 89.5. *Syntrichia virescens*. 6:** on the base of a mature tree, growing with *S. latifolia*, Royal Victoria Park, Bath, ST74226552, S Pilkington.
- 89.6. *Syntrichia laevipila*. H10:** on *Populus* trunk on lake shore, 40 m alt., E side of Lough Derg near Terryglass, M861012, 2002, DG Long 31463 (E); **H31:** on ash tree, 15 m alt., in Beaulieu Woods, Beaulieu, O122766, M Eakin.
- 89.7. *Syntrichia papillosa*. 86:** on *Sambucus*, edge of woodland, 70 m alt., Carron Glen, opposite Stoneywood, NS79288329, 2008, DG Long 37605 (E); **H28:** on trunk of several Lombardy poplar trees in residential area, Ballina (east), G255190, S Pilkington; **H38:** *Acer campestre* by road, Lisnaward Road, J177495, SDS Bosanquet; **H40:** *Prunus* sp. in garden, Kings Country Cottages, Macosquin, C8129, SDS Bosanquet.
- 89.8. *Syntrichia latifolia*. 52:** concrete kerb, Menai Bridge carpark, SH554719, SDS Bosanquet; **74:** on sycamore, 60 m alt., Kirkcowan, NX328608, MO Hill; **76:** epiphytic on elder and sycamore, by the river, Pollok Country Park, NS5559861579, 2009, DF Chamberlain (E).
- 92.2. *Tetraplodon mnioides*. H22:** on bare peat, ca 85 m alt., Ethelstown, Girley Bog, N704702, M Eakin; **H30:** in exposed montane heath, summit ridge of Cuilcagh, H1129228579, RL Hodd (DBN); **H39:** forestry track, 280 m alt., E of Binvore, D1819, N Lönnell.
- 94.2. *Splachnum ampullaceum*. H38:** cow dung in flush, Leckan More, J18562218, SDS Bosanquet; **H4:** cowpat in flush, 300 m alt., north of Glentanefinnane, R16940934, SDS Bosanquet & RL Hodd.
- 96.2. *Meesia triquetra*. H28:** iron-rich flush, Fiddandarry bog, G32, RL Hodd & CS Muldoon (DBN).
- 97.1. *Amblyodon dealbatus*. 57:** delete the entry, the record from Dovedale (SK15) by T Barker in Linton (1903) is unsubstantiated.
- 98.1. *Leptobryum pyriforme*. H7:** flower bed in street, Ballypooreen, R93191309, SDS Bosanquet & CD Preston.
- 99.1.a. *Zygodon viridissimus* var. *viridissimus*. H31:** on bark of tree, Riverstown Bridge, J16400667, RL Hodd & BBS.
- 99.1.b. *Zygodon viridissimus* var. *stirtonii*. 15:** calcareous stone of rear drain, 60 m alt., Newington churchyard, TR183374, J Hendey; **16:** on calcareous gravestone, Chiddingstone churchyard, TQ501452,

1999, J Hendey; **73**: wall, 10 m alt., New Abbey car park, NX96446625, EM Kungu; **73**: on rocks, rocky sea shore, 2 m alt., west side of Brighthouse Bay, NX63504579, DG Long 42286 (E); **79**: on wall, 143 m alt., edge of town near Haining gateway, Selkirk, NT46732835, 2011, DG Long 40615; **H5**: on wall, ca 30 m alt., Aghern, 3km west of Conna, W897929, TL Blockeel 41/038.

99.2. *Zygodon rupestris*. 63: very sparse on millstone grit in small boulder field in moorland valley, 350 m alt., Abbey Brook near Berristers Tor, Howden Moors, SK195926, TL Blockeel 41/456.

99.3.a. *Zygodon conoideus* var. *conoideus*. 88: on aspen, 245 m alt., Carie Burn, S side of Loch Rannoch, NN61505648, GP Rothero & C Rickerby 2012013; **H40**: bark of tree, Altmover Glen, C6510, N Lönnell.

100.1. *Orthotrichum lyellii*. H5: willow by river, Buttevant, R5408, MO Hill; **H27**: 45 m alt., Ballycastle Church, G107377, EM Kungu (E).

100.2. *Orthotrichum striatum*. 26: branch of ash, Stanstead Great Wood, TL853489, RJ Fisk; **70**: on roadside ash tree, 220 m alt., Knott Head, Whinlatter Forest, NY22212447, TL Blockeel 41/266; **70**: on willow, 171 m alt., Hutton in the Forest, NY4623135444, BBS Group; **72**: ash and willow twigs, beside Dryfe Water, Waterhead, NY18679416, C Miles, det. EM Kungu; **H5**: on planted red-berried deciduous tree, ca 160 m alt., Corrin Forest, ca 3km south of Fermoy, W80359553, TL Blockeel 41/041; **H8**: sycamore trunk on edge of conifer plantation, 200 m alt., Garryarthur, R703168, SDS Bosanquet & GF Smith; **H36**: tree trunk, by river, 180 m alt., near junction of Oughtmame Burn and Glenelly River, H6293, EM Kungu; **H38**: *Salix* by bridge, 190 m alt., Ghann River, J189230, SDS

Bosanquet.

100.4. *Orthotrichum speciosum*. 24: trunk of small ash, 1.2 metres from ground, rough ash/nettle scrub in bottom north-east facing coombe, 200 m alt., The Coombe, Ivinghoe Hills, SP97021555, CTW Tipper; **28**: epiphytic on pear, ca 3 m alt., Oxborough Hall Orchard, Emneth, TF4707, CR Stevenson; **57**: on trunk of ash tree by disused railway, 140 m alt., Tissington Trail, near Ashbourne, SK174472, TL Blockeel 41/440.

100.6. *Orthotrichum rupestre*. 72: on dry stone dyke, 170 m alt., Dryfe Water, Waterhead north of Boreland, Lockerbie, NY186941, EM Kungu *et al.*

100.10. *Orthotrichum cupulatum*. 56: on pedestal of grave in churchyard, 35 m alt., Kingston on Soar, SK501277, TL Blockeel 41/406; **H31**: trig pillar, on summit of Slievenaglogh, J13560880, RL Hodd & BBS.

100.11. *Orthotrichum rivulare*. H28: sparsely on small boulder at edge of stream, 60 m alt., Curry, ca 4km north of Charlestown, G492062, TL Blockeel 41/319; **H39**: riverside rocks, 75 m alt., Green Bridge, near Broughshane, D156078, DF Chamberlain; **H40**: river bank, 100 m alt., by road bridge, Claudy Country Park, C544070, EM Kungu & DF Chamberlain.

100.12. *Orthotrichum sprucei*. H2: delete the entry, which is based on a literature record from Ross's Bay with no supporting specimen; **H4**: on ash tree in flood zone of R. Blackwater, ca 70 m alt., Ballymaquirk Bridge, Banteer, W38249879, TL Blockeel 41/020.

100.14. *Orthotrichum tenellum*. 72: ash in narrow wooded strip on river bank, 50 m alt., Millhousebridge, east bank of R. Annan, NY1028885254, EM Kungu; **91**: on horizontal branch of *Acer pseudoplatanus*, open parkland, 70 m alt., West Park, The

- Burn, north of Edzell, NO59677160, 2010, DG Long, NG Hodgetts & D Bell 40361 (E); **H19**: tree trunk, Athy, S6893, DF Chamberlain (E); **H27**: on *Salix*, lake shore, ca 250 m alt., Derryhick Lough, north of Turlough, M20809887, DG Long *et al.* 41929; **H28**: on trunk of small sycamore tree, 60 m alt., near the bridge, Curry, ca 4km north of Charlestown, G492061, TL Blockeel 41/318.
- 100.14A. *Orthotrichum cambrense*. 44**: smooth trunks of ash trees, 15 m alt., Dryslwyn Picnic Site, Tywi Valley, SN552202, 2011, SDS Bosanquet (NMW). Described as new species by Bosanquet & Lara (2012).
- 100.16. *Orthotrichum pumilum*. 28**: epiphytic on conference pear, ca 6 m alt., Elm, Oxborough Hall Orchard, TF4790507859, CR Stevenson; **65**: small amount on *Salix* in wet woodland, 200 m alt., Foxglove Covert, Catterick Garrison, SE1697, TL Blockeel 41/283.
- 100.17. *Orthotrichum diaphanum*. 79**: on *Sambucus* trunk, edge of mixed woodland, 185 m alt., Murieston Hill, The Haining, Selkirk, NT46732798, DG Long 42240 (E); **94**: on *Sambucus* by buildings, 260 m alt., Howemill, Strathglass E of Dufftown, NJ426362, 1994, DG Long 25804 (E); **H16**: on *Fraxinus excelsior*, Galway (west), M28992684, A Pielach; **H16**: on concrete on wall top, disturbed sandy ground, 5 m alt., Omey Island, by graveyard, L57185627, 2004, DG Long 33407 (E).
- 100.19. *Orthotrichum consimile*. 69**: on branch of fallen elder, open woodland, 172 m alt., River Lowther, Askham, NY51762390, D Bell 1039 (E).
- 100.20. *Orthotrichum scanicum*. 57**: on *Salix* on bank below old colliery tip, ca 125 m alt., Morton Colliery, SK410607, 2011, TL Blockeel 40/208. New to Britain (Blockeel, 2012).
- 101.2. *Ulota drummondii*. H33**: delete the entry, no specimen is available for a recent record from Correl Glen (NG Hodgetts, 1993) and no other adequate specimen has been traced.
- 101.3. *Ulota crispa*. 31**: on ash on wooded streamside, 55 m alt., W of Old Weston, TL0977, J Shanklin.
- 101.4. *Ulota bruchii*. 20**: on sloping trunk of willow, Friars Wood, TL322329, MO Hill.
- 101.5. *Ulota calvescens*. 44**: one tuft on *Corylus* by road near limestone quarries, 240 m alt., Blaenpant, SN577158, SDS Bosanquet; **72**: willows near forestry track, 220 m alt., Sandford Bridge, south of the B723, NY204934, EM Kungu (E); **H12**: *Sorbus* in conifer plantation, Carrickbyrne Hill, S824245, SDS Bosanquet & CD Preston.
- 102.2. *Hedwigia stellata*. 63**: along road fronted by houses, probably on a wall, 265 m alt., Laund Hill, Huddersfield, SE1018, H Lake; **64**: top of gritstone wall, surrounded by *Hypnum cupressiforme*, 170 m alt., Studfold, Nidderdale, SE097733, 2007, M Adamson; **H19**: on rocks beside mast and track, Cupidstown Hill, O00412072, RL Hodd (DBN); **H33**: on wall, 210 m alt., near loch W of Cloghtogle, N of Lisbellaw, H3044, 1996, DG Long 26245 (E).
- 104.1. *Plagiopus oederianus*. H39**: on shaded vertical limestone face at base of gully among other bryophytes, including *Metzgeria pubescens*, ca 260 m alt., Sallagh Braes, D34610481, NG Hodgetts 8031.
- 105.1. *Bartramia halleriana*. H2**: delete the entry, records from Torc Mountain by D Orr are considered unreliable; **H7**: delete the entry, the record from the Galtee Mountains by HW Lett is doubtful in the absence of a voucher.

- 105.3. *Bartramia ithyphylla*. 73:** narrow ravine, above water level, ca 75 m alt., Kirkbean Glen, NX97145927, EM Kungu; **H20:** delete the entry, no localised record traced; **H30:** on slightly flushed rockface in gully, Mullaghlea Glen, H0472624662, R.L. Hodd (DBN); **H34:** delete the entry, no localised record traced.
- 107.4. *Philonotis caespitosa*. 48:** edge of pond, in Millennium Park, Penrhyndeudraeth, SH609389, 2008, MC Watling, conf. NG Hodgetts; **H20:** roadside cart track, on NE side of Ballyreagh Wood, O1615, 1975, AR Perry (NMW).
- 107.8. *Philonotis calcarea*. 73:** floor of disused quarry in conifer plantation, 190 m alt., Glencap Forest, N. of Red Nick Burn, NX643599, EM Kungu, V Heppel & JE Smith; **H21:** petrifying spring in woodland clearing, 170 m alt., Glemasmole, east side of lower reservoir, O09402241, M Lyons; **H30:** in extensive area of rich flush, Dunmakeever, H0942128408, RL Hodd.
- 110.2. *Anomobryum concinnatum*. 41:** with *Bryoerythrophyllum recurvirostrum* on limestone rocks near river, 250 m alt., just north of viaduct, Cwm Taf Fechan, SO046099, T Ottley 12052706; **45:** thin soil over limestone on clifftop, 25 m alt., Stackpole NNR, SR98249427, SDS Bosanquet; **57:** on soil on ledges and slabs of limestone rock on south-facing hillside, ca 200 m alt., near Lover's Leap, Dovedale, SK1451, TL Blockeel & AJ Hodgson 41/005; **80:** rocks, in bed of Black Burn, Newcastleton, NY48, 1976, AC Crundwell (E).
- 111.1. *Bryum marratii*. 41:** hummocks in upper salt marsh, 5 m alt., Whiteford Burrows, SS44689494, SDS Bosanquet; **44:** a few patches in cattle-grazed upper saltmarsh, 5 m alt., Morfa Uchaf, Ferryside, SN36991211, SDS Bosanquet; **48:** with filamentous algae on unshaded mainly bare mud of cattle-poached hollows at upper limit of salt marsh, 1 m alt., by Afon Glaslyn, near Minfordd, SH58383794, 2001, DT Holyoak 01-919.
- 111.2. *Bryum warneum*. 41:** damp sand on edge of recently developed dune slack, 5 m alt., Whiteford Burrows, SS432942, SDS Bosanquet, conf. DT Holyoak.
- 111.5. *Bryum uliginosum*. 57:** delete the entry, record from Buxton (SK07) by T Barker in Linton (1903) is unsubstantiated; **88 in ():** Glen Dochart, NN42, 1888, EM Holmes, det. DT Holyoak (NMW).
- 111.11. *Bryum algovicum*. 73:** in damp rock crevices, rocky sea shore, 1 m alt., west side of Brighthouse Bay, NX63504579, DG Long 42289 (E); **H4:** bridge, 100 m alt., Wallis's Bridge, Millstreet, W283924, CD Preston, TL Blockeel & JL Denyer; **H8:** graveyard, 120 m alt., Dromcolliher, R379211, RL Hodd & CD Preston.
- 111.14. *Bryum archangelicum*. 74:** floor of old quarry by forest road, 110 m alt., near Tarf Bridge, NX2564, MO Hill.
- 111.15. *Bryum intermedium*. 41:** dune slack edge by scraped area, 5 m alt., Kenfig NNR, SS78908120, SDS Bosanquet, conf. DT Holyoak; **63:** place in (), the only recent record (Greenfield SE00, T.L. Blockeel, 1977) is *B. caespiticium*.
- 111.16. *Bryum donianum*. H40:** silty river bank, Castledawson, H92679339, SDS Bosanquet.
- 111.18. *Bryum elegans*. 70:** sloping soil between rocks, Green Hill, Gowbarrow Park, NY4020, M Lawley; **70:** on top of rock outcrop, limestone gully, 730 m alt., Moor House NNR, north bank of Crowdundle Beck above Green Pot, NY69563341, DG Long 41485; **94:** on rock ledge by stream, limestone

- ravine, 460 m alt., Ailnac Builg ravine, Glen Builg, Glen Avon, NJ18150671, 2009, DG Long 38404 (E).
- 111.23. *Bryum pallescens*. 31:** at base of metal fence, 70 m alt., Old Weston, bridle track at east edge of Molesworth air base, TL0866577045, M Burton; **74:** under railing of bridge, 105 m alt., Tarf Bridge, NX2564, MO Hill; **105:** either side of a galvanised steel gate on bare ground, 70 m alt., Letterewe, NG958710, O Moore.
- 111.24. *Bryum pseudotriquetrum sensu lato*. 16:** base of 5-arch bridge over River Cray, Footh Cray Meadows, TQ482719, 2008, J Hendey; **24:** on lock side at water level, Grand Union canal at Three Locks, SP8908228428, SV O'Leary.
- 111.24.a. *Bryum pseudotriquetrum* var. *pseudotriquetrum*. 18:** damp chalky soil just above water level in bottom of pit, South Stifford, TQ596793, 1991, T Pyner (BBSUK); **65:** in slightly basic flush, 205 m alt., Foxglove Covert, Catterick Garrison, SE157972, TL Blockeel & S Knight 41/284; **72:** flush in hill grassland, 180 m alt., Mill Burn, west bank, NY253905, EM Kungu (E); **73:** flushed area to north of forestry track to Lochaber Loch, 160 m alt., Mabie Forest, NX92477068, EM Kungu & V Heppel; **82:** boggy hollow in limestone grassland by sea, 5 m alt., Catcraig near Barn's Ness, NT7177, 1995, DG Long 25908 (E); **89:** wet mossy rocks in gully, slopes below limestone cliffs, 540 m alt., N cliffs above E side of Loch Loch, NN987749, 1994, DG Long & GP Rothero 25375 (E); **110:** flush on N-facing hillside, ca 100 m alt., Feiriosbhal, Creag na h-Uamha, NB3015, NG Hodgetts 8066; **H21:** dune slack, 5 m alt., North Bull Island, O2259036066, M Lyons & S Storey; **H31:** on wet rock ledge in gully, Two Mile River, Carlingford Mountain, J1613, 1999, TL Blockeel 28/175 (BBSUK).
- 111.24.b. *Bryum pseudotriquetrum* var. *binum*. 33:** gravel on margin of and between two gravel pits, south of Fairford, SP150000, RV Lansdown; **H4:** track at entrance to wood, 90 m alt., by Ballygiblin Cross Roads, Cecilstown, R4602, CD Preston, F O'Neill & AT Walsh; **H39:** damp calcareous forestry track, E of Binvore, D1819, R Weyl; **H40:** wet fen by river, 180 m alt., Pollan Water, C814031, EM Kungu.
- 111.28. *Bryum dixonii*. 107:** on regularly inundated slabs at top of long cascade, 200 m alt., Abhainn a'Choire, Corrykinloch, NC35222638, GP Rothero 2012004.
- 111.31. *Bryum dichotomum*. 78:** on gravel of farm track, 220 m alt., Hundleshope Farm, south of Peebles, NT23013635, DG Long 42196 (E).
- 111.31A. *Bryum apiculatum*. 2:** unshaded, part-bare patches of stony soil in short grassland of car-parking area beside track at edge of heathland, 135 m alt., W edge of Retire Common, SW99776313, 2007, DT Holyoak, record previously published in *Field Bryology* 95, p.61 (2008), but entry incorrectly omitted from current Census Catalogue.
- 111.32. *Bryum dyffrynense*. H35:** unshaded damp muddy sand of trackway in edge of dune-slack, with patchy low grasses and rushes, ca 5 m alt., Catherine's Isle, NE. of Dunfanaghy, C02793766, 2002, DT Holyoak 02-861 (DBN); **H35:** unshaded, mainly bare, damp sand beneath sparse low grasses beside small stream at head of sand beach, ca 5 m alt., N. of Lough Nagreany, C14404207, 2002, DT Holyoak 02-884B (DBN and BBSUK).
- 111.33. *Bryum radiculosum*. 52:** bridge mortar, 10 m alt., Pont Faen, Aberffraw, SH373692, SDS Bosanquet; **70:** on wall mortar, ca 10 m alt., Mill Field, Workington, NY014290, M

- Pool; **H4**: on wall mortar of bridge, ca 95 m alt., Wallis's Bridge, near Millstreet, W283924, TL Blockeel 41/025; **H4**: limestone wall of mausoleum in graveyard, with *Encalypta streptocarpa*, 130 m alt., Shandrum, R497224, RL Hodd & CD Preston.
- 111.34. *Bryum ruderale*. 70**: gritty soil in yard adjacent to farm buildings, Hutton in the Forest, NY459359, RJ Fisk; **90**: disturbed ground by car park, 60 m alt., Pirn Brig, West Water, NO578688, DF Chamberlain; **H4**: soil on cut vertical edge of lawn in graveyard, 130 m alt., Shandrum, R497224, RL Hodd & CD Preston; **H4**: soil, 165 m alt., Kilbrin Cemetery, R438069, CD Preston, F O'Neill & AT Walsh.
- 111.36. *Bryum klingraeffii*. 102**: *Brassica* (turnip) field, Ballygrant, Isle of Islay, NR398657, 1998, HLK Whitehouse (BBSUK); **102**: earth on roots of fallen tree in shade, Ballygrant, Isle of Islay, NR4066, 1998, HLK Whitehouse (BBSUK); **H31**: on soil, stubble field by river, 20 m alt., Mapastown Bridge, NE of Ardee, N98579548, DG Long 42239 (E); **H4**: with *Ephemerum minutissimum* and *Tortula truncata* in stubble field, 110 m alt., S of road E of Wallis's Bridge, W287923, CD Preston, TL Blockeel & JL Denyer.
- 111.37. *Bryum sauteri*. 70**: on shady vertical sandstone rock face by river, ca 25 m alt., west bank of River Eden, Wetheral Woods, south of Wetheral, NY46675350, DG Long 41464, conf. DT Holyoak.
- 111.40. *Bryum subapiculatum*. 55**: stubble field, 75 m alt., Netherseal, SK281128, NJ Law; **H39**: gritty ground in disused quarry, E of Tardree Mountain, J1994, MO Hill.
- 111.41. *Bryum bornholmense*. 16**: heathy clearing in Sweet Chestnut woodland, Sandgate Beds, ca 90 m alt., Oaken Wood, Barming, TQ717555, KJ Adams; **16**: burnt heathy area, Abbey Woods, Lesnes Abbey, TQ468780, 1994, J Hendey; **19**: on acid raw humus in clear-cut following removal of conifers, Chalkney Wood, TL876282, N Jardine, det. MO Hill; **73**: on acid soil disturbed by tree planting, 140 m alt., Auchenlosh Hill, NX884605, MO Hill; **H8**: on roots of upturned pine, Seefin Mountain, R643188, MO Hill.
- 111.47. *Bryum alpinum*. H30**: on poached, wet peaty ground, Monydoo, H1665227433, RL Hodd (DBN).
- 114.6. *Poblia drummondii*. 14**: on damp sandy ride, Beckley Woods, TQ863222, T Ortle.
- 114.10. *Poblia bulbifera*. H26**: moist peaty soil on gravelly path, 180 m alt., western side of The Gap, southern Ox Mountains, G372165, TL Blockeel 41/344; **H29**: on unshaded damp soil/mud of disturbed ground by shore of lake, ca 60 m alt., E shore of Lough Allen W of Cleighran More, G98581952, 2001, DT Holyoak 01-785.
- 114.14. *Poblia flexuosa*. H28**: on bare peaty soil by recently excavated ditch at edge of field, 175 m alt., by minor road on north side of The Gap, southern Ox Mountains, G374168, TL Blockeel, S Pilkington *et al.* 41/348; **H28**: on damp gravel, moorland track, ca 160 m alt., near Lough Aughree, Ox Mountains, G52472945, DG Long *et al.* 41895.
- 114.16. *Poblia lutescens*. 68**: on gritty soil on bank of upland stream, 345 m alt., Buckham's Walls Burn, Upper Coquetdale, NT8111, TL Blockeel 41/288; **73**: damp ground by rivulet in woodland, 75 m alt., wood west of the A762, near Sentry Knowe, NX632767, DF Chamberlain & EM Kungu (E).
- 114.17. *Poblia lescuriana*. 14**: on soil in clearing, Hawksden Park Wood, near Mayfield, TQ618268, T Ortle 12052002.

- 115.1. *Epipterygium tozeri*. H8:** wooded river valley, Banemore, near Broadford, R332209, RL Hodd & CD Preston.
- 116.3. *Mnium thomsonii*. H9:** crevices among limestone blocks at base of huge summit cairn, ca 325 m alt., Slievecarran, M32490544, 2004, NG Hodgetts 4885 (DBN).
- 116.5.b. *Mnium marginatum* var. *dioicum*. 35:** block wall forming west bank of river, River Trothy, E of Station House, Dingestow, SO463099, 2006, SDS Bosanquet; **41:** silty river bank, near Resolven, SN8203, CR Hipkin; **H40:** silty river bank, Castledawson, H92679339, SDS Bosanquet.
- 118.3. *Rhizomnium pseudopunctatum*. 4:** base-enriched area of mire, 210 m alt., Bursdon Moor, SS267197, 1979, MJ Wigginton 2320; **78:** rich fen, 225 m alt., SE side of road W of Medwyn Mains, NT128492, 1991, DG Long 20168 (E).
- 119.1. *Plagiomnium cuspidatum*. H4:** sparsely in limestone turf, ca 110 m alt., by Liscarroll Castle, R451124, TL Blockeel & RL Hodd 41/029; **H40:** fallen trunk in wood by lake, 10 m alt., Ballyronan Wood, H947858, SDS Bosanquet.
- 119.2. *Plagiomnium affine*. 72:** on grass bank, 180 m alt., Mill Burn, east bank, NY253905, EM Kungu (E); **91:** base of sycamore trunk, 105 m alt., Raemoir House Hotel, NO695994, DF Chamberlain (E); **H19:** ca 90 m alt., Pollardstown Fen south, N7715, 2011, JL Denyer, NG Hodgetts *et al.* JLD_B_2620 (DBN); **H26:** bank at edge of field, by path, 85 m alt., Cloonkillina Lough, G597062, EM Kungu; **H4:** grassy calcareous bank, Liscarroll Castle, R452124, RL Hodd & TL Blockeel; **H8:** steep earthy bank, right bank of R. Feale, near Mountcollins Bridge, R157187, MO Hill; **H40:** grassy bank, Ballymuckleheany, H8687, SDS Bosanquet.
- 119.4. *Plagiomnium elatum*. 14:** in fen in woodland, 4 m alt., The Pells, Offham, TQ403121, T Ottley 12090601.
- 119.5. *Plagiomnium ellipticum*. 63:** in wet flush by springs on bank of stream, Upper Derwent Valley, near Boradhead Clough, SK1696, 1988, TL Blockeel 17/058; **H39:** at edge of basin mire with *Rhytidiadelphus squarrosus*, ca 180 m alt., Sallagh Braes, D34550520, NG Hodgetts 8027.
- 130.1.b. *Fontinalis antipyretica* var. *gracilis*. 63:** place in (), not recorded since 1955 (Leeming, near Keighley SE03, J. Appleyard).
- 132.1. *Palustriella commutata*. 24:** calcareous stream bank in shaded wood, Osierbed Spinney, SP7924729155, SV O'Leary.
- 132.2. *Palustriella falcata*. 73:** trickle over quarry face, 180 m alt., quarry by Clatteringshaws Reservoir dam, NX547754, DF Chamberlain & V Heppel.
- 134.1. *Campylium stellatum*. H14:** base-rich hillside flush, 220 m alt., Glenbarrow, N36120759, M Lyons.
- 134.2. *Campylium protensum*. 74:** flush on hillside, 170 m alt., Artfield Fell, NX232660, MO Hill.
- 135.1. *Campyliadelphus chrysophyllus*. 27:** base of gravestone in churchyard, Hethel, TG172004, 2011, RJ Fisk; **H13:** calcareous grassland, 3 km east of Bagnelstown, S7382161380, JR Roche & F Devaney (DBN); **H28:** on calcareous gravel in old pit, ca 65 m alt., Eskragh, ca 3km north of Curry, G483092, TL Blockeel 41/322.
- 136.1.b. *Amblystegium serpens* var. *salinum*. 73:** in damp rock crevices, rocky sea shore, 1 m alt., west side of Brighthouse Bay, NX63504579, DG Long 42288 (E); **H12:** thin coastal turf on low rocky cliffs just above highwater mark, with *Festuca rubra* and *Anthyllis vulneraria*, 2 m alt., Baginbun Head, S80130323, SDS

Bosanquet & CD Preston.

- 137.1. *Hygroamblystegium fluviatile*. 70:** on silty boulders on river bank, 70 m alt., Eden Gorge, south of Armathwaite, NY5144, TL Blockeel 41/271; **104:** on rocks in burn in ravine, just above stony beach, 5 m alt., Allt Yelkie, Earlish, NG381609, NG Hodgetts 8211.
- 137.2. *Hygroamblystegium tenax*. 72:** rocks in stream in narrow wooded valley, 120 m alt., Mary's Cleuch, off B723 north of Lockerbie, NY142858, EM Kungu; **H12:** weir on canalised river, Hawkshaw's Bridge, S881197, SDS Bosanquet & CD Preston; **H29 in ():** Glencar, G74, 1928, WR Megaw, det. DT Holyoak (BEL); **H39:** *Salix* base by river, 70 m alt., Dunminning Bridge, D050108, SDS Bosanquet.
- 137.3. *Hygroamblystegium varium*. 14:** 35 m alt., Framfield Stream, TQ497197, T Ottley 12030201; **61:** on wood in ditch, 8 m alt., Sutton Wood, Elvington, SE708481, 1994, TL Blockeel 23/262.
- 137.4. *Hygroamblystegium humile*. 14:** in marshy area on golf course, 10 m alt., Horsted Place, TQ463185, T Ottley 12030602; **H15:** wet grassland, 5 or so km west of Birr, N0066616202, F O'Neill, det. NG Hodgetts (DBN).
- 138.1. *Leptodictyum riparium*. H5:** on twigs and roots of trees at edge of marsh, ca 90 m alt., Kilcolman Bog, ca 4km NW of Doneraile, R583109, TL Blockeel 41/031.
- 139.1. *Conardia compacta*. 82:** soily ledge, on sandstone bluff in ravine, 50 m alt., below New Bridge, Dunglass Dean, NT77007219, 2009, DF Chamberlain & EM Kungu (E).
- 140.1. *Drepanocladus polygamus*. H4:** wheat stubble, 95 m alt., Two Gneeves, WNW of Cecilstown, R449029, CD Preston, F O'Neill & AT Walsh.
- 140.2. *Drepanocladus aduncus*. H30:** marsh, ca 75 m alt., Cornabraher, Cootehill, H572113, M Eakin; **H5:** submerged in marsh, ca 90 m alt., Kilcolman Bog, ca 4km NW of Doneraile, R583108, TL Blockeel 41/033.
- 140.3. *Drepanocladus sendtneri*. 57:** delete the entry, record from Carr Meadow, Hayfield (SK08) by GA Holt was an error (Linton, 1903), and no other record has been traced; **H9:** narrow wet fen meadow by lough, with *Scorpidium scorpioides*, 30 m alt., Lough Bunny, R37359623, 2004, NG Hodgetts 4891 (DBN); **H9:** fenny fringe of lough, 30 m alt., Lough Bunny, R37309619, 2004, NG Hodgetts 4889 (DBN).
- 141.1. *Tomentypnum nitens*. H28:** blanket bog flush, 127 m alt., Fiddandarry Bog, Ox Mountains, G32, EJM O'Sullivan.
- 142.1. *Sanionia uncinata*. 14:** on eroding rocks in middle of stream, 55 m alt., Darwell Wood, TQ708204, T Ottley 12030802; **H38:** *Salix* overhanging stream, 190 m alt., Ghann River, J189230, SDS Bosanquet; **H4:** ultrahumid *Salix* by stream in conifer plantation, 260 m alt., Glentanefinnane, R169077, SDS Bosanquet & RL Hodd.
- 143.1. *Hygrohypnum ochraceum*. H27:** on boulder in stream, open moorland slope, ca 100 m alt., White River below Nephin Mor, G11890910, DG Long *et al.* 41908; **H36:** rocks in river, 240 m alt., Goles Forest, Sperrin Hills, H682939, EM Kungu & DF Chamberlain.
- 143.3. *Hygrohypnum luridum*. H19:** in flood zone of canal bank, 80 m alt., Ticknevin Bridge, Kilpatrick, N697303, M Eakin; **H36:** parapet of road bridge, 190 m alt., Oughtmame Burn, Sperrin Hills, H6293, DF Chamberlain; **H39:** on stone by river, Kells Water, Shank Bridge, J125980, MO Hill.
- 145.1. *Warnstorfia fluitans*. 79:** submerged in



△ *Calliargon giganteum* in swampy flush, Derwent Moors, Derbyshire. T. Blockeel

pool, 540 m alt., Black Knowe, Tima Water, NT228106, 2001, RWM Corner; **H30**: in marsh, 100 m alt., North of Bruse Hill, Bruse, N316988, M Eakin; **H39**: deep *Sphagnum*-filled fire ‘dam’ pool on fire break in Scots Pine plantation, 200 m alt., Craigs Wood, Long Mountain, C99621639, JW Bates 4610.

146.2. *Sarmentypnum sarmentosum*. H28: flush in side of river valley in blanket bog setting, 235 m alt., Carrownaleck, near Cloonacool, Ox mountains, G499203, Ejl O’Sullivan (DBN); **H28**: in flush on steep slope, Dunowla, G4848926595, RL Hodd (DBN); **H29**: mineral-rich flush on side of river valley through a blanket bog, 223 m alt., Corlea, near Rossinver, Arroo mountains, G892470, Ejl O’Sullivan (DBN); **H29**: in flush, Fallacarra, Arroo, G8852446182, A Korsten (DBN); **H30**: blanket bog flush,

235 m alt., Garvagh, Cuilcagh Mountains, H086316, Ejl O’Sullivan (DBN); **H30**: in rich flush in stream valley, Dunmakeever, H1011627090, RL Hodd (DBN).

148.1. *Hamatocaulis vernicosus*. H30: in springhead with *Calliargonella cuspidata*, Commas, E. of summit of Cuilcagh, H1297227848, RL Hodd (DBN).

149.1. *Scorpidium revolvens*. H38: flushed wet heath, Craignamona south, J14902335, SDS Bosanquet.

149.3. *Scorpidium scorpioides*. 63: place in (), the only reliable records are from the 19th century; **H29**: blanket bog flush next to small stream, near bog road, 224 m alt., Gortnacrieve/Corlea, near Rossinver, G892470, Ejl O’Sullivan (DBN); **H30**: fen dominated by *Sphagnum contortum*, 70 m alt., Cornabraher, Coothill, H572111, M Eakin;

- H30:** blanket bog flush next to small stream, in a degraded bog setting, near bog road, 356 m alt., Alteen, near Swanlinbar, H153282, EJJ O’Sullivan (DBN).
- 150.1. *Calliergon cordifolium*. 8:** at edge of shallow pond, 30 m alt., Plaitford Common, SU279194, T Ottley 12032501; **H5:** in marsh, ca 90 m alt., Kilcolman Bog, ca 4km NW of Doneraile, R583108, TL Blockeel 41/032.
- 150.2. *Calliergon giganteum*. 57:** in wet part of base-rich flush complex on otherwise acid moorland, ca 370 m alt., Derwent Moors, east of Ladybower Reservoir, SK214882, TL Blockeel 41/393; **63:** delete the entry, all records are misidentifications, or are unsubstantiated; **H30:** in wet rich flush, Dunmakeever, H0940328441, R.L. Hodd (DBN).
- 151.1. *Leskea polycarpa*. H39:** ash by river, 50 m alt., Crumlin, J153765, SDS Bosanquet.
- 156.1.a. *Abietinella abietina* var. *abietina*. 44:** 2x2m patch in mown, sparsely vegetated dune grassland, 10 m alt., Pendine Burrows, SN27090740, SDS Bosanquet; **H16:** delete the entry, which is based on a literature record from Benlettery with no supporting specimen and is improbable; **H27, H28, H34 and H35:** delete these entries, the records are probably errors for var. *hystricosum*.
- 157.2. *Thuidium delicatulum*. 59:** base-rich flushing on grassland slope of former coal mine, 45 m alt., Clock Face Country Park, SJ5365291474, DA Callaghan 1424.
- 157.3. *Thuidium assimile*. H19:** calcareous bank by road, gravel pit near Usk, N83900280, 2011, JL Denyer JLD_B_3054 (DBN); **H19:** thin turf on tufa outcrop, with *Entodon concinnus*, ca 120 m alt., Hartwell Upper, N944214, NG Hodgetts *et al.* 8183.
- 160.1. *Scorpiurium circinatum*. H5:** limestone wall, 55 m alt., Glanworth Friary, R75680435, SDS Bosanquet & GF Smith.
- 161.2. *Plasteurbynchium striatulum*. 14:** on tree roots, 65 m alt., Gillett’s Lane, Wilmington, TQ547041, 2011, T Ottley 11072205; **H5:** limestone rock faces, 55 m alt., Funshion Valley, Ballyenahane, R72760804, SDS Bosanquet & GF Smith.
- 164.1. *Rhynchostegium murale*. 74:** wall top, 50 m alt., car park for St Ninian’s Well, NW of Burrow Head, NX4336, MO Hill.
- 164.3. *Rhynchostegium megapolitanum*. 85:** stabilised sand dune, in a forestry clearing, Tentsmuir NNR, near the Ice House, NO5026, 1976, DF Chamberlain B321.
- 165.1. *Rhynchostegiella tenella*. 73:** on sandstone of abandoned railway bridge, Routin Bridge, woods north of road, NX886797, EM Kungu; **76:** shaded wall, near the entrance, Pollok Country Park, NS597761622, 2009, DF Chamberlain; **80:** on roadside wall, damp woodland, 50 m alt., Eckford Mill, Kale Water, NT71702714, DG Long 42184 (E).
- 165.3. *Rhynchostegiella curviseta*. 14:** sandstone rock in stream, 50 m alt., Ecclesbourne Glen, Hastings, TQ838102, J Pitt; **H29:** delete the entry, the voucher (Glencar, WR Megaw, 1928, BEL) is *Hygroamblystegium tenax*, det. DT Holyoak.
- 165.4. *Rhynchostegiella teneriffae*. 72:** wet rock outcrop, above stream in narrow wooded valley, 120 m alt., Mary’s Cleuch, off B723 north of Lockerbie, NY142858, EM Kungu; **H5:** limestone on edge of river, 40 m alt., Funshion Valley, Ballyenahane, R726080, SDS Bosanquet & GF Smith.
- 167.1. *Oxyrrhynchium pumilum*. 72:** rocky bank of river, in a ravine, 120 m alt., Wamphray Glen, NY12879652, EM Kungu (E); **80:** bare earth, by steps, 110 m alt., Mossburnford, Jacobs Ladder, above caravan site, NT6616,

- DF Chamberlain (E).
- 167.4. *Oxyrrhynchium speciosum*. 34:** wet woodland, Charfield Meadow NR, ST717937, RV Lansdown; **36:** on alder branch at pond margin, Berrington Hall Pool, near Leominster, SO510631, JD Sleath; **70:** on bank of R. Eden, by Baron Wood, near Armathwaite, NY512441, MO Hill; **H15:** tall herb swamp, Cromwell's Island, east Galway (Shannon callows), M9426213351, CA Maher & F O'Neill (DBN); **H5:** mud in woodland seepage zone, 40 m alt., Funshion Valley, Ballyenahane, R727080, SDS Bosanquet & GF Smith; **H8:** eutrophic riverbank, Mahoonagh, R312314, SDS Bosanquet & JL Denyer.
- 169.4. *Sciuro-hypnum populeum*. 79:** on shady wall, churchyard with large trees, 245 m alt., Ettrick Church, NT25991448, DG Long 42254 (E); **H5:** on stone by stile, ca 20 m alt., north bank of R. Blackwater, near Kilmurry South, ca 6km east of Fermoy, W8799, TL Blockeel 41/040.
- 170.3. *Brachythecium glareosum*. 85:** on the ground close to limestone quarries, under trees, 35 m alt., Limekilns, NT073836, DF Chamberlain (E); **H28:** base of wall, Crockoona, G354292, SV O'Leary; **H40:** unquarried basalt outcrop, 220 m alt., Keady Mountain Quarry, C72202415, SDS Bosanquet.
- 170.4. *Brachythecium salebrosum*. 33:** log in woodland, north of Upper Slaughter, Cress Coppice, SP152240, RV Lansdown; **34:** on gravestone, churchyard, Minchinhampton, SO873008, P Martin.
- 170.5. *Brachythecium mildeanum*. 16:** in grass at trackside with other mosses, Bedgebury Forest, TQ738336, DT Streeter; **70:** edge of gravel track, hill top north of Sandale, NY24944070, MO Hill & CD Preston;
- 74:** floor of disused quarry by road, 50 m alt., near Burrow Head, NX464357, MO Hill; **H4:** on gravelly ground by road, ca 130 m alt., Shanaknock, ca 3km NW of Millstreet, W2492, TL Blockeel 41/024; **H5:** gritted ground by road, Ballygarrane, W of Castletownroche, R6402, MO Hill; **H8:** gritty roadside, by Dromtrasna Bridge, R1723, MO Hill; **H21:** dune slack, 5 m alt., North Bull Island, O2269936201, M Lyons & S Storey; **H35:** in marsh by sandhills, south of Anloge Hill, Horn Head, near Dunfanaghy, B9937, 1990, TL Blockeel 19/441; **H39:** roadside, Conogher, SW of Dervock, C9530, MO Hill; **H40:** forestry entrance, Somerset Forest, Coleraine, C85103049, SDS Bosanquet.
- 171.1. *Scleropodium cespitans*. H12:** tarmac road edge, Hawkshaw's Bridge, S88231974, SDS Bosanquet & CD Preston; **H21:** old damp tarmac path in gardens, ca 30 m alt., Glasnevin Botanic Gardens, O151371, NG Hodgetts 8190; **H39:** *Salix* trunk by car park, 35 m alt., Soldierstown Canal, J148627, SDS Bosanquet; **H39:** on tarmac path by river Main, Randalstown, J0890, MO Hill.
- 171.2. *Scleropodium touretii*. H2:** delete the entry, which is based on records from Muckcross, but no voucher has been traced or confirmed; **H5:** on rocky 'ledge' on sea cliff, well below main path, near top of cliffs, accessible by fishermen's steps, ca 15 m alt., Ballycotton, W99216339, 2006, NG Hodgetts 6961 (DBN); **H7:** delete the entry, which is based on a literature record from Clonmel with no supporting specimen.
- 173.1. *Brachytheciastrum velutinum*.** Delete the entries for **H1, H2, H5, H6, H12, H13, H22, H23, H24, H26, H27, H32, H33, H35, H36**; the Irish distribution has been revised for the Irish Red Data Book (Lockhart *et al.*, 2012), and no records could

- be confirmed for these vice-counties .
- 176.1. *Campylophyllum calcareum*. 61:** shaded base of chalk cliff, Humber Bridge country park, TA0126, C Wall; **90:** sandstone rock ledge within wooded ravine, Den of Airlie, NO2955951683, DA Callaghan.
- 177.2. *Calliergonella lindbergii*. 73:** edge of forestry track to west of Dalshinnie Loch, 130 m alt., Mabie Forest, NX93717059, EM Kungu & V Heppel.
- 178.1. *Taxiphyllum wissgrillii*. H5:** limestone rocks in woodland, 60 m alt., Funshion Valley, Ballynahane, R72670811, SDS Bosanquet & GF Smith.
- 179.1. *Pylaisia polyantha*. 44:** 25x10cm patch on branch at head height on old ash, 25 m alt., Afon Twyi, Llandeilo Station, SN63412266, SDS Bosanquet; **59:** on trunk of *Salix fragilis* beside stream, Brickfields, NE of Micklehead Green, SJ5150791862, DA Callaghan 1417; **63:** on sycamore tree at edge of small beech plantation on margin of reservoir, 265 m alt., Scammonden Water, SE04941657, TL Blockeel 41/362.
- 182.1. *Ptilium crista-castrensis*. 64:** in *Hypnum jutlandicum* mats within area of unburnt heath, Ilkley Moor, SE1052445433, A Headley.
- 183.1.b. *Ctenidium molluscum* var. *condensatum*. H38:** with other bryophytes on damp schistose rock ca 2 m above water of small river, 70 m alt., by Spinkwee River, Tollymore Forest Park, J336318, 2002, DT Holyoak 02-985 (BBSUK).
- 186.2. *Heterocladium wulfsbergii*. 42:** on cliff face by river, ca 160 m alt., Coedydd Nedd a Mellte, Carn-y-Crochan, SN924095, NG Hodgetts 8061; **73:** in river gravels, 10 m alt., New Abbey Pow, New Abbey, NX961663, EM Kungu (E); **H8:** on wet rock by stream in gully, ca 330 m alt., NE slopes of Seefin Mountain, R649184, TL Blockeel 41/017.
- 189.3. *Rhytidiadelphus subpinnatus*. 98:** in bouldery turf at side of burn with *Loeskeobryum brevirostre*, 80 m alt., Stuckgoay Burn, Glen Shira, NN14051607, GP Rothero 2012009.
- 190.1. *Loeskeobryum brevirostre*. H5:** on bank by forest road in conifer plantation, ca 250 m alt., Knockduv, Ballyhoura Mountains, R5717, TL Blockeel 41/034.
- 194.1. *Myurella julacea*. H16:** delete the entry, the record from Connemara (JT MacKay, 1836) is vaguely localised and is unconfirmed.
- 195.1. *Platydictya jungermannioides*. 44:** limestone cave in unquarried rock outcrop, 520 m alt., Foel Fawr, SN73571886, SDS Bosanquet & GS Motley.
- 196.2. *Orthothecium intricatum*. 110:** crevices and ledges in cliff on N-facing hillside, ca 100 m alt., Feiriosbhal, Creag na h-Uamha, NB3015, NG Hodgetts 8068.
- 197.1. *Plagiothecium latebricola*. 36:** on a rotting log, deciduous woodland, Huntington Park, nr Kington, SO264537, M Lawley; **46:** rotting base of *Molinia* stump in willow carr, Cors Fochno, SN6263790151, DA Callaghan.
- 197.3.a. *Plagiothecium denticulatum* var. *denticulatum*. H28:** fern base by path, Knockbrack, G306229, SV O'Leary.
- 197.3.b. *Plagiothecium denticulatum* var. *obtusifolium*. 75:** craigs, 430 m alt., above the Nick of Balloch, NX34259253, EM Kungu & V Heppel; **H8:** rock crevices in steep north-facing gully just north of summit, ca 750 m alt., Galty Mountains, Carrignabinnia, R85002390, 2005, NG Hodgetts 6121 (DBN); **H27:** rocks by shore, 550 m alt., Lough Adanacleveen, near Slieve Carr, F919141, MO Hill.
- 197.4. *Plagiothecium laetum*. 16:** on base of coppiced *Castanea sativa*, 95 m alt., Cattering Wood, Wateringbury, TQ687546, KJ Adams; **33:** fallen, rotten oak log, Cerneywick Copse,

- near South Cerney, SU066952, RV Lansdown; **H8**: steep sheltered bank below crags, 470 m alt., Seefin Mountain, R644187, MO Hill.
- 197.5. *Plagiothecium curvifolium*. 46**: dead pine in conifer plantation, Esgair Fraith Mine east shaft, SN7491, SDS Bosanquet; **H40**: log in mixed woodland, Learmount Wood, C584023, N Lönnell; **H40**: on conifer log, Somerset Forest, Coleraine, C84933033, SDS Bosanquet.
- 197.7. *Plagiothecium cavifolium*. 26**: damp hollow in clearing, Stanstead Great Wood, Stanstead, TL853493, RJ Fisk.
- 197.8. *Plagiothecium succulentum*. H31**: in crevice of rock outcrop, grassy slopes with gabbro outcrops, 310 m alt., north slope of Slievenagloch, Cooley Peninsula, J13930903, DG Long 42220 (E).
- 197.9. *Plagiothecium nemorale*. 85**: sheltered sandstone rock face, Dunino Burn, steps down to the burn, below the church, NO539109, 2008, DF Chamberlain & EM Kungu.
- 201.1. *Entodon concinnus*. H13**: calcareous grassland, 3 km east of Bagnelstown, S7382161380, JR Roche & F Devaney.
- 202.1. *Platygyrium repens*. 14**: on elder near stream, 30 m alt., Framfield, TQ498198, T Ottley 12033001.
- 204.2. *Sematophyllum substrumulosum*. 44**: on *Ulex* trunk on edge of spruce plantation, 135 m alt., Coed Marros, SN19450930, SDS Bosanquet; **52**: conifer log in coastal forestry, 10 m alt., Coed Mor, SH5434071549, SDS Bosanquet, TH Blackstock & PS Jones; **H12**: conifer log in plantation, Tintern Abbey Woods, S79231017, SDS Bosanquet & CD Preston; **H40**: on conifer logs, Somerset Forest, Coleraine, C84943030, SDS Bosanquet.
- 205.1. *Cryphaea heteromalla*. H31**: on ash tree, 15 m alt., in Beaulieu Woods, Beaulieu, O122766, M Eakin.
- 207.1.a. *Leucodon sciuroides* var. *sciuroides*. 31**: place in (), the record from Tilbrook churchyard TL081692 (NG Hodgetts, 1992) is in VC 30 and the only previous record was made in 1906; **61**: limestone wall of church, west wall of Bishop Burton church, SE9939, C Wall; **72**: on old *Acer* at edge of parkland, 75 m alt., Drumlanrig Castle, Nithsdale, NX853989, 1996, DG Long 26178 (E).
- 208.1. *Antitrichia curtipendula*. 28**: epiphytic on conference pear, ca 6 m alt., Elm, Oxborough Hall Orchard, TF4792607843, CR Stevenson.
- 209.1. *Pterogonium gracile*. H22**: on igneous rock exposure, ca 80 m alt., Castleparks, N940743, M Eakin.
- 213.1. *Leptodon smithii*. 28**: epiphytic on conference pear, ca 6 m alt., Elm, Oxborough Hall Orchard, TF4792007882, CR Stevenson.
- 214.1.b. *Isothecium myosuroides* var. *brachythecioides*. H30**: on low rocky cliff, Knockgorm, H0573223748, RL Hodd.
- 214.3. *Isothecium holtii*. 75**: rocks by stream, 120 m alt., Pollgowan Burn, upstream from the B7027, NX2579, DF Chamberlain & EM Kungu; **H27**: boulder on lake shore, ca 550 m alt., Lough Adanacleveen, Slieve Carr, F91951419, JL Denyer JLD-B-12-04 (DBN).

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