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 fieldwork 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 cambricense Bosanquet & ELara, 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. scoticum Grönvall in Derbyshire, yet another example of an epiphytic colonist that is probably

<table>
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<th>2011</th>
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<td>England</td>
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<td>New entries</td>
<td>91</td>
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<tr>
<td>Debracketed*</td>
<td>38</td>
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<td>Bracketing†</td>
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<td>Deletions</td>
<td>3</td>
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<td>Totals</td>
<td>132</td>
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*Debracketed are existing vice-county entries for which a post-1960 record has been vouched. †Bracketing are existing entries for which the post-1960 records are unconfirmed or erroneous, but older record(s) are valid.
New county records – mosses

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 (Lonnell 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 Mesia 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. Tometypnum 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 refound by Nick Hodgetts in Co Antrim, and Entosthodon mühlenbergii, with no confirmed records since 1852, by Sam Bosanquet in Cork. It is curious that E. mühlenbergii occurs at such a southern location; E. pulchella, 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 by 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 pruinatum, found in Co Londonderry during the summer meeting, has only two other sites. Plagioiopsis 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 tomatulosis 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 Campylotelenum 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 refound it in North Devon. The new Derbyshire record of Diphysium foliosum is a long way from any other known extant populations, and was found with good capsules. Pilslum ericae-carotenum 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 Illiley Moor, where it grows on unburnt heather moor. Our knowledge of the distribution of Tortula 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 inuera 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 casiofolum 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 Brynnum, 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 mühlenbeckii was previously known only from one old locality in Wales; the new ones from Breidden Hill and Snowdona 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-
Better known and less surprising are the specialist South Lancashire is another fascinating example. Thuidium delicatulum of competition offers fertile ground for colonisation chemistry combined with the absence of bryologists ignore them at their loss. Perhaps can be very rewarding places for bryophytes, and On a similar theme, former industrial sites Cheshire and Wigtownshire. So soil at the edge of very ordinary tarmac roads, in 2012 there were two records from gravelly to occur on old mine spoil and forest roads, but ferruginascens has found tendency to occur in ruderal habitats. Mark Pool A number of mosses are showing an increasing havaasii S. confertum are on Ben Lawers and the island of Rum. New county records – mosses


1.5. Sphagnum magellanicum. 631: 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., Cloghally 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 Lonnell.

1.7. Sphagnum tereb. H31: on grazed marsh/ pasture margin at edge of marsh, ca 100 m alt., Edentoboro, 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, G388020069, RL Hodd (DBN); H39: bog margin, McKeown’s Hill, D0106089, 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, Comnas, H1199427397, RL Hodd, conf. MO Hill (DBN); H34: delete the entry, no localised record traced; H36: bank of small ravine, 280 m alt., Sawelberg, 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.


1.13.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, ca 70 m alt., Glantanehnnane, R160946, RL Hodd & SD 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 Killkelly, M50629079, DG Long et al. 41920; H26: hummock in blanket bog, Easky Bog Nature Reserve, G478127456, RL Hodd, E Joyce & A Korsten, conf. MO Hill (DBN); H29: in dry heath, Gladsmuems, Glencairn, 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, Creenween, G532078684, RL Hodd, conf. MO Hill (DBN).

1.14. Sphagnum fuscum. H26: hummock in wet blanket bog, Fiddandarry, G3736719947,
1.15. **Sphagnum subnittens var. ferrugineum.**

H2: cut over bog, on W. side of Mangerton E. of the Old Kennmare 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 skyesense.**


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, Leekan 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., Glencree, near Lough Talt, Ox Mountains, G373184, EJL O’Sullivan (DBN).

1.20. **Sphagnum subsecundum.**

40: within M10 flush, Carbatch Valley, Long Mynd, SO4137296952, DA Callaghan 1517, conf. MO Hill; **H70:** flush, Caudbeck Flow, near Bewcastle, NY81723, MO Hill.

1.21. **Sphagnum inundatum.**

H26: flush on side of river valley in blanket bog setting, 176 m alt., Glencree, near Lough Talt, Ox Mountains, G377196, EJL O’Sullivan (DBN).

1.22. **Sphagnum denticulatum.**

109: floating carpet with Mesapathes in small dubh lochan, Camster, ND22954705, AG Payne.

1.23. **Sphagnum contortum.**

H30: in flush in wet heath, Monyodoo, H1629228030, RL Hodd, conf. MO Hill (DBN); **H30:** ca 75 m into marsh from south-east edge, 60 m alt., Drumhose, Coothill, H593124, M Eakin.

1.24. **Sphagnum platypsyllum.**

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.**


1.31. **Sphagnum flexuosum.**

4: frequent in wet Betula pubescens woodland, 200 m alt., near Boldventure, Germanswee, SX493956, M Pool; **15:** in bog; among other Sphagna, Hunstead Wood, TR094568, J Hendey; **H40:** Junetus flush in grassland, ca 5km NW of Maghera, C8151705872, DA Callaghan; **H40:** wet fen by river, 180 m alt., Pollan Water, C814038, EM Kungu.

1.32. **Sphagnum angustifolium.**

91: boggy slope, Ferretero Forest, N of Hill of Quhiel, NO77585, 2011, DF Chamberlain, conf. RE Andrus (DBN); **H28:** in flush on open slope with S. teres and S. contortum, Fiddandarry, G403921564, RL. Hodd, conf. MO Hill (DBN); **H30:** on steep slope of stream valley, Commas, H1260526284, RL. Hodd, conf. MO Hill (DBN); **H40:** hillside flush, Sawn 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.

2.2a. **Andreaea rupestris var. rupestris.**

63: very sparse on millstone grit in small boulder field in moorland valley, 370 m alt., Abbey Brook near Bettrestor Tor, Howden Moors, SK195925, TL Blockeel 41/47; **H28:** on rock slab, rocky hillside, 360 m alt., NE slope of Knockachree, Ox Mountains, G52432873, DG Long et al. 41901; **H36:** SW of summit of Savel, H6162469660, RL. Hodd & DA Callaghan (DBN).

2.6a. **Andreaea rothii subsp. rothii.**

92: on slb, SE corner, slopes of Cranach Hill, Deeside, NO3998, 2006, AG Payne; **97:** block scree, 650 m alt., head of Coire Chearcall, 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, Carrownacreave, 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, C9556448, DF Chamberlain (E); **H40:** Eagle’s Rock, Sawn, H6397, RL. Hodd & DA Callaghan (DBN).

2.6b. **Andreaea rothii subsp. falsa.**

74a: rock on hillside, 180 m alt., Arfinfield Fell, NX232660, MO Hill; **H39:** basalt rocks, 190 m alt., Lough Nafoo north, D004176, SDS Bosanquet, JL Denyer & RL Weyl.

2.8. **Andreaea megistospora.**

H4 in (): Musheragh Mountain, W38, 1851, DBN) is

2.12. **Arrichium tenellum.**

14a: sandy soil on open path side, 80 m alt., Broadwater Warren, QT558843487, PJ Howarth; **H28:** muddy ditchside by road, north of The Gap, Ox Mountains, G374170, SV O’Leary.

5.1. **Oligotrichum hercynicum.**

H8: on bare gravelly 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, H64925, EM Kungu & DF Chamberlain.

6.1. **Pogonatum nunanum.**

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, Knockfeena west, RA4326040, SDS Bosanquet & JD Denyer; **H35:** delete the entry, the record from Lough Salt (HW Lett, 1910) cannot be assigned to a heactad, as there are two loughs of this name in the vice-county.

6.3. **Pogonatum uriginosum.**

H37: On stony soil in heath, Camlough Mountain, J056524601, RL. Hodd (DBN).

7.1. **Polytrichastrum alpinum.**

H29: on low rocky bluff, Conwal South, Arroo, G8547346955, RL. Hodd (DBN).

7.2. **Polytrichastrum longisetae.**

47: burnt heather moor, Tryw Swch, Berwyn, SJ010296, M Lawley; **107:** on gravel by burn, 310 m alt., Allt Coir’achtruiteir, Ben Hec, NC39993413, GP Rothero 2012017.

8.1b. **Polytrichum commune var. perigoniale.**

56: on bare sandy soil on heather-covered bank, ca 100 m alt., Rainworth Heath, SK591559, TL Blockeel 41/446; **H8:** forestry track, 230 m alt., Garryyarbur, 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, Ertrick Water, NT19280929, DG Long 42253 (E).


11.1. Buxbaumia aphylla. 63: place in brackets, the sole record was made in 1946 (Hebden Bridge SD92, H Walsh).

12.1. Diphasium foliosum. 57: on humus at edge of turf over-topping limestone rock, ca 390 m alt., Thirkelow, Skem south of Buxton, SK051687, TL Blockeel 41/35.

14.3. Encalypta rhatocarpa. H29: scattered through small area of alpine calcareous grassland, 429 m alt., Keeleges, Arroo, G8123249751, RL Hodd, det. NG Hodgetts (DBN).


21.5. Schistidium apocarpum. 47: on sloping rocks, Corndon Hill, SO312963, M Lawley; 73: rocks near river, by stock watering point, above glen, 75 m alt., Kirkbean Glen, NN97145927, EM Kungu; 73: on stones of wall, margin of woodland garden, 25 m alt., Cally Gardens, Gatehouse of Fleet, NX06445502, 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, Ballyriss More ASSI, C722247, RL Hodd & SDS Bosanquet.


21.9. Schistidium strictum. 56: 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 Granger is improbable and unconfirmed, and a later specimen from Ravensdale, leg. LBC Garlick (NMW);

21.10. Schistidium robustum. 46: abundant on one Ferroan dolomite rock on bank of mine spoil, Esgair Fraith Mine, SN74089120, SDS Bosanquet.

21.11. Schistidium confirmatum. H40: 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.


21.12. Schistidium confirmatum. H40: delete the entry, which is based on a literature record from Blaraghagh with no supporting specimen.


22.4. Grimmia montana. 47: on rock, Craig Rhwarch, Llangwnog, SJ054264, M Lawley.

22.7. Grimmia alpestris. 82: delete the entry, the voucher (Trappin 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. mucublackii, det. RD Porley.


22.21. *Grimmia lisa*. 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).


23.3. *Racomitrium aquaticum*. 74: rock on hillside, 180 m alt., Artfield Fell, NX232660, MO Hill.


23.11. *Racomitrium ericoides*. 63: wall top, Blackshaw Head, near Hedden Bridge, SD9727, 2010, J Turner; H20: amongst scree, pathside, Glendalough, T0898, 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.


25.1. *Campylostelium saxicola*. H8: on damp sandstone rock by stream, 290 m alt., near Glenosheen, Ballyhoura Mountains, R650185, MO Hill.


28.8. *Seligeria calcarea*. 57: delete the entry, records from Taddington Dale and Via Gellia in Linton (1903) are unsubstantiated.


30.1. *Fissidens viridulus*. 56: on clayey marl in scrubby woodland, 60 m alt., Claro Bridge 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 Kungo (E); 85 in ( ): on ground in plantation, between Nether Grange and Burnisland Golf Course club house, NT2486, 1916, J McAndrew; H8: low soily bank in graveyard, Dromcollisher, R379211, RL Hodd & CD Preston.

30.2. *Fissidens crispus*. 14: on sandstone blocks of bridge over stream, 110 m alt., Ashdown Forest, TQ488303, T Ottery 12110601.

30.3. *Fissidens pusillus*. 17: on stone under water at spring head, ca 170 m alt., Great Foxmoor Wood, TQ122345, HW Wallis; 73: low rocks at edge of water immediately above dam, 50 m alt., Kirkbean Glen, NY97515915, EM Kungo (E); H19: thin turf on tufa outcrop, with *Entodon concinnum*, ca 120 m alt., Hartwell Upper, N944214, NG Hodgetts et al. 8184.


50.5. *Fissidens incurvus*. 88: disturbed ground by track, Friarstown, R5849, MO Hill.


50.9. *Fissidens rufus*. H19: delete the entry, the voucher (bridge buttress at water level, Derryvullagh Bog, near Athy, RD Fitzgerald, 1969, BBSUK) is *F. crispipes*.

51.10. *Fissidens exilis*. 68: clay bank side, track
down to Brinkburn Priory, NZ116985, D McCurcheon & A McLay; 111: earth bank by burn in plantation woodland, with Ditrichella beteromalla, ca 20 m alt., Binscarth Wood, Finstown, HY351141, NG Hodgetts 8041; H12: bank in woodland, Abbey Bridge, Tintern Abbey, S79400985, SDS Bosanquet & CD Preston.


30.16. 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, SJ9698490, 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, Castlough 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. Plagiochila aspleniformis. 92: on limestone boulder beside artificial cave, Croone, Arran, NS023425, JD Sleath; 105: stoney sandy turf, 15 m alt., W side of Achnahaird Bay, NC015136, 2000, DG Long 29189 (E); H18: calcareous grassland, 4-5 km west of Askerton, R292455950, K McNutt & S Thomas (DBN); H13: calcareous grassland, 3 km east of Bagnedstown, S7388661354, JR Roche & F Devaney (DBN); H24: on gravely 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, Seltanassaggart, 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, H1645927066, RL Hodd (DBN).

31.2. Plagiochila acrostegia. 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, Enniscroe House, G142142, DA Callaghan; H40: road bank, south of Bond’s Glen, C502069, N Lonnell.

33.1. Trichodon cylindricus. H5: arable field, Ballygarrrane, W of Castletownroche, R640029, M0 Hill.

34.1. Ditrichum pusillum. H34 in (): Rossonlawgh, G86, 1908, WF Johnson, conf. DT Holyoak (DBN).

34.3. Ditrichum lineare. 91: on gravelly soil at edge of path, forestry plantation, 233 m alt., Myrie Hill Wood, N of Banchory, NJ70810135, 2011, D Bell 946.


34.8. Ditrichum flexicaule. 9: on calcareous soil at top of steep grassy slope, 40 m alt., Great Stukeley Lodge railway cutting, TL234758, M Burton.

34.9. Ditrichum gracile. 16: chalk grassland, Shore Hill, Keming Down, TQ551595, 2006, J Hendey; 41: dunle slack, 5 m alt., Whiteford Burrows, SS44595495, SDS Bosanquet; 70: on gravelly, lime-rich ground near gate, Siddick Pond, Worthington, NY000905, S Pilkington & BBS group; 70: on calcareous flushed slope, moorland stream valley, 220 m alt., Rairing Sike, north of Robin’s Rig, NJ70810135, DDT Holyoak (DBN).
rocks, ca 500 m alt., near summit of Mither Tap, Bennachie, NJ6822, 1990, DG Long 18318 (E).

42.2. *Rhabdozoea crispa*. H28: in deep shade on underside of large granite boulder, Farbreageab, Ox mountains, G4627324434, RL Hodd, det. NG Hodgetts (DBN).


43.2. *Cyndodontium strophiferum*. 93: exposed granite rocks, ca 500 m alt., near summit of Mither Tap, Bennachie, NJ6822, 1990, DG Long 18318 (E).


46.1. *Dicranaria cirrata*. H30: on stone wall along old farm road, ca 240 m alt., Leiter, Comnasus, Bäkleboro, N729978, M Eakin.


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 Lugaquilla 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, G490262, TL Blockeel 41/320.

52.8. *Dicranella cerviculata*. 32: edge of track along bottom of disused quarry, 70 m alt., Sandie 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 ASSL, H85329785, SDS Bosanquet.


56.3. *Campylopus schinperrii*. H2: delete the entry, the locality (Derrymore Glen) is in H1; H20: delete the entry, records from Lough Bray by D O’Riordan 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, 353 m alt., Robert’s Linn, Sligirt 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.b. *Campylopus atrovirens var. falcatus*. H11: crevices in large slabby rock near path in E-facing mountain corrie, ca 630 m alt., Brandon Mountain, Q46391180, 2006, NG Hodgetts 6598 (DBN).


57.2. *Leucobryum juniperideum*. 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 Ribha Liaich, Loch Tarbert, Jura, NR5628172, DG Long 41877.


60.1.a. *Weissia controversa var. controversa*. 38: bare soil on path leading down from road to canal towpath, Stratford upon Avon canal, Earlwood, SP1507509, NJ Law.

60.1.b. *Weissia controversa var. crispa*. 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, Mahoomagh, R313314, SDS Bosanquet & JL Denyer.

60.3. *Weissia rutulana*. 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.


66. *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., Cadlow Lane, near Clarborough, SK752816, TL Blockeel 41/429.

60.10. *Weissia sterilis*. 60: delete the entry, the voucher (on bare patch of acid loam overlying sandstone, Highbury Hill, N. of Hallatown, 2008, FJ Ramsey & JH Crouse, BBSUK) is Porophyllum nitidum.


61.2. *Tortella hambergeri*. 33: base of church
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72.1. **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 Marrants, Blakeney Point, TG02490126, M Ghullam & RW Ellis; 73g: in rock crevices, rocky sea shore, 1 m alt., west side of Brighouse Bay, NX63454756, DG Long 42284 (E).

72.2. **Trichostomum crispsulum**. H5: on gravelly ground by forest road in conifer plantation, ca 250 m alt., Knockdhu, Ballyhoura Mountains, R572170, TL Blockeel 41/035.

72.3. **Trichostomum tenuirostre**. 92g: 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; 92f: crevice in earthy rocky bank close to water's edge, Tidball Burn, Cranachan, NJ77014, 2011, AG Payne.

72.4. **Trichostomum bicornicum**. 88f: 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 recurvoirostrum var. recurvoirostrum**. 52: one large patch on calcareous sand in dune slack, 10 m alt., Newborough Warren, SY41766326, SDS Bosanquet; H21g: in tuft on road cutting, in bedded limestone exposure, ca 55 m alt., Irighown, Palmerston, O064535, M Eakin; H30f: in tuft spring, Comnas, H1357926591, RL Hodd (DBN).


68.2. **Gymnostomum calcareum.** 6s: on moist turf on wall of disused limestone quarry, Fry's Hill, near Asbriedge, ST43855135, S Pilkington.

68.3. **Gymnostomum aeruginosum.** 73g: sandstone of fallen railway bridge, Routin Bridge, NX887979, EM Kungu (E).

70.1. **Leptobrachyla berica.** 57g: on small exposure of Magnesian Limestone at ground level in thin turf, 95 m alt., Pleasley Vale, south of Shirebrook, SK530653, DG Long 42285 (E).

72.1. **Ephemeran recurvirostrum.** 14: on bare chalky soil on slope, 80 m alt., Malling Chalk Pit, Lewes, TJ4Q30121, T Otley 12120801.

72.2. **Ephemeran bicornicum.** 19f: compacted wet soil on track between areas of bog, with *Archidiacum alterniforum*, 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 Lough River W of Patrty, M13447231, 2003, DT Holyoak 03-546 (DBN); H27g: silty soil high in inundation-zone on river bank, shaded beneath Salix cinerea carr, ca 18 m alt., W bank of Lough River W of Patrty, 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 Irishconnell, H35730706, 2001, DT Holyoak 01-683 (DBN ). Records for H26, H27, H29 and H30 are taken from Holyoak & Bryan (2005).

72.7. **Ephemeroptera minutissimun.** 3b: on gravelly soil, rocky sea shore, 2 m alt., west side of Brighouse Bay, NX63504579, DG Long 42285 (E).


72.9. **Bryoerythrophyllum fergunrognacus.** H1: 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; 35f: on mine waste in disused colliery, 320 m alt., Cwn Du, Pentre-Piod, near Pontypool, SO24510218, S Pilkington; 58b: on gravelly soil at edge of tarmac road, ca 295 m alt., near Shouter’s Clough Bridge, west side of Goyt Valley, SK012747, TL Blockeel 41397; 68: bare soil over slightly basic rocks, 330 m alt., Buckhants Walls Burn, Upper Coquetdale, NT819108, TL Blockeel 41287; 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, NT24455317, DG Long 42190 (E); H26: gravelly path, Steve Gamshe (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.

77.1.b. **Barbula convoluta var. sardoa.** 3b: in thin soils on edge of track surfaced with crushed hardcore and old tarmac waste, Austray, SK30020701, NJ Law; 73: ca 30 m alt., Irongray Church grounds, NX914795, EM Kungu; 77g: 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., Scammondan Dam, SE055166, TL Blockeel 41361, replaces previous records, which are misidentifications of *D. vinialis* or are unconfirmed; H18: delete the entry, the vouchers (R. Toberlin, Ballycullion, NWW & BBSUK) are *D. luridus*, det. DT Holyoak; H27g: delete the entry, the voucher (mud-capped wall, Mallaranney, NR Megaw, 1927, BEL) is *D. fallax*, det. DT Holyoak; H38: delete the entry, the vouchers (Ballynafeigh WR Megaw, 1930, and Kirkstorn, WR Megaw, 1929, BEL) are *D. fallax*, det. DT Holyoak.

79.4. **Didymodon nicholsonii.** 28: on tarmac pavement, at base of wall, North Runcoton, near King’s Lynn, TF6421573, CR Stevenson; 52: concrete kerb, Menai Bridge carpark, SH554719, SDS Bosanquet; H23:
79.11. *Didymodon sinuosus*. 47: on stonework by canal, 70 m alt., Shandwick, N541237, RJ Fisk et al. (DBN).


79.13. *Didymodon spadiceus*. 63: delete the entry, the only available voucher (Gargrave SD95, T.L. Blockeel, 1975) is *D. insulatum*; other records are unconfirmed.


79.16. *Didymodon fergusineus*. 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, R444209, CD Preston, F O’Neill & AT Walsh; H8: floor of igneous quarry, Ballinleeny Quarry, R496335, SDS Bosanquet & JI Denyer.

82.3. *Alona 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 Killmoy east of Kilkelly, M5409737, DG Long et al. 4196.

82.5. *Alona albignata*. H5: bare earth banks on top of old stabilised coastal sand dune, 10 m alt., Claycastle, Youghal, X09977395, 2006, NG Hodgetts 6975 (DBN).


83.12. *Tortula atrata*. H16: delete the entry, the only available voucher (Connemara (T Taylor, 1836) is vaguely localised and is unconfirmed.


83.15. *Tortula wilsoni*. 4: exposed soil on steep grass bank at cliff-top, 30 m alt., Hartland Quay, SS2230224701, DA Callaghan 1427.


83.17. *Tortula medica*. H12: path edge, Tinterbridge church, S80180916, SDS Bosanquet & CD Preston; H15: delete the entry, the record (Woodford, AJE Smith, 1994) 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.

83.1.b. *Phascum cuspidatum var. piliferum*. 28: salted road verge, 3 m alt., Terrington St. John, slip road off A17, TF53681481, CR Stevenson.


85.3. *Microbryum rectum*. H4: on bare earth on limestone ledge by road, ca 110 m alt., Liscarragh, R45311218, TL Blockeel & RL Hodd 41030.

85.4. *Microbryum curvicolium*. H16: delete the entry, which is based on a literature record from Benlettery with no supporting specimen and is highly improbable.

86.2. *Hennediella 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 Luccagate, TF24470, R Harding.

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89.1.a. Syntrichia ruralis var. ruralis. 73: on sandy soil on rocks, rocky sea shore, 2 m alt., west side of Brighouse Bay, NX63504579, DG Long 42287 (E); 72: thin coastal vegetation over slabby rock, Out Skerries, HU6836071937, 2011, AG Payne; H26: on concrete wall top, lake shore, 84 m alt., Urlar Priory, Urlar 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.


89.2. Tetraplodon unioideus. H22: on bare peat, ca 85 m alt., Ethelstown, Girley Bog, N704702, M Eakin; H30: in exposed montane heath, summit ridge of Cullagh, H1129228579, RL Hodd (DBN); H39: forestry track, 280 m alt., E of Binvore, D1819, N Lönnell.

89.3. Syntrichia montana var. montana. 92: north side of retaining wall, south end of Loch Tomnakeist, Crannoch, N393983, 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.


89.7. 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, Lisnavard Road, J177495, SDS Bosanquet; H40: Prunus sp. in garden, Kings Country Cottages, Macesquin, C8129, SDS Bosanquet.


92.2. Tetraplodon unioideus. H22: on bare peat, ca 85 m alt., Ethelstown, Girley Bog, N704702, M Eakin; H30: in exposed montane heath, summit ridge of Cullagh, H1129228579, RL Hodd (DBN); H39: forestry track, 280 m alt., E of Binvore, D1819, N Lönnell.

92.4. Splachnum amplusacaeum. H38: cow dung in flush, Leckan More, J18562218, SDS Eakin; H70: on wall, 10 m alt., New; H82: on trunk of ash tree by disused railway, 140 m alt., Tissington Trail, near Ashbourne, SK174742, TL Blockeel 41/440.


97.1. Amblyodon dealbatus. 57: delete the entry, the record from Dovedale (SK15) by T Barker in Linton (1903) is unsubstantiated.

100.2. Orthotrichum striatum. 26: branch of ash, Stanstead Great Wood, TL853489, RJ Fish; 70: on roadside ash tree, 220 m alt., Knots Head, Whinlatter Forest, NY22212447, TL Blockeel 41/266; 70: on sallow, 171 m alt., Hutton in the Forest, NY4623135444, BBS Group; 72: as and willow twigs, beside Dryfe Water, Waterhead, NY18679416, C Miles, et al.

100.3.a. Zygadon conoides var. conoides. 88: on aspen, 245 m alt., Carie Burn, S side of Loch Rannoch, NN61505648, GP Rothero & C Rickerby 2012013; H40: bark of tree, Altmore Glen, C6510, N Lönnell.


102. Orthotrichum striatum. 26: branch of ash, Stanstead Great Wood, TL853489, R J Fish; 70: on roadside ash tree, 220 m alt., Knots Head, Whinlatter Forest, NY22212447, TL Blockeel 41/266; 70: on sallow, 171 m alt., Hutton in the Forest, NY4623135444, BBS Group; 72: as and willow twigs, beside Dryfe Water, Waterhead, NY18679416, C Miles, et al.


109.4. Orthotrichum speciocsum. 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, Ivaghoe Hills, SP97021555, CTW Tipper; 28: epiphytic on peat, ca 3 m alt., Oxborough Hall Orchard, Emmeth, TF4707, CR Stevenson; 57: on trunk of ash tree by disused railway, 140 m alt., Tissington Trail, near Ashbourne, SK174742, TL Blockeel 41/440.

101. Orthotrichum capulatum. 56: on pedestal of grave in churchyard, 35 m alt., Kingston on Soar, SK501277, TL Blockeel 41/406; H31: trigg pillar, on summit of Slievenaglough, J13560880, RL Hodd & BBS.

102.1. 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, Clady Country Park, C544070, EM Kungu & DF Chamberlain.

102.2. Orthotrichum teretum. 77: as 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, Abyh, S6893, DF Chamberlain (E); H27: on Salix, lake shore, ca 250 m alt., Derrychick 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.


100.16. Orthotrichum pannulum. 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, Caterick 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, NT46737279, DG Long 42240 (E); 94: on Sambucus by buildings, 260 m alt., Howemill, Stratglas 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., Omeys Island, by greyweed, L57185627, 2004, DG Long 33407 (E).

100.19. Orthotrichum consimile. 69: on branch of fallen elder, open woodland, 172 m alt., River Lowlaw, Ashkam, NY51672390, D Bell 1039 (E).

100.20. Orthotrichum sciaticum. 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. Ulotra drummondii. H33: delete the entry, no specimen is available for a recent record from Corr Glen (NG Hodgetts, 1993) and no other adequate specimen has been traced.

101.3. Ulotra crispa. 31: on ash on wooded streamside, 55 m alt., W of Old Weston, TL0977, J Shanklin.


101.5. Ulotra calvecescens. 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., Sandyford Bridge, south of the B723, NY204934, EM Kungu (E); H12: Sperstis in conifer plantation, Carrickhyme Hill, S824245, SDS Bosanquet & CD Preston.


103.5. Plagiochloa 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 balleriana. H2: delete the entry, records from Torn Mountain by D Orr are considered unreliable; H7: delete the entry, the record from the Galtree Mountains by HW Lett is doubtful in the absence of a voucher.

105.3. Bartramia ityphylla. 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, H047224662, R.L. Hodd (DBN); H34: delete the entry, no localised record traced.


110.2. Anonobryum concinnum. 41: with Bryobryophyllum recurvum on limestone rocks near river, 250 m alt., just north of viaduct, Cwm Taf Fechan, SO046009, T Orley 12052706; 45: thin soil over limestone on clifftop, 25 m alt., Stackpole NNR, SR9249424, 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 narmattii. 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 warnaeum. 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 (NWW).

111.11. Bryum alovicum. 73: in damp rock crevices, rocky sea shore, 1 m alt., west side of Brighouse Bay, NX63504579, DG Long 42289 (E); H44: 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.


111.18. 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 Crowndulle Beck above Green Pot, NY0563341, DG Long 41485; 94: on rock ledge by stream, limestone
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N. Hodgetts 8066; 1994, DG Long & GP Rothero 25375 (E); slopes below limestone cliffs, 540 m alt., N near Barn’s Ness, NT7177, 1995, DG Long; limestone grassland by sea, 5 m alt., Catcraig Covert, Catterick Garrison, SE157972, TL0866577045, MO Hill; 105: either side of a galvanised steel bar on ground, 70 m alt., Letterewe, NG958710, O Moore.

111.24. Bryum pseudotriquetrum sensu lato. 16: base of 5-arch bridge over River Cray, Foots 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, TQ597693, 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, NT253905, EM Kungu (E); 73: flushed area to north of forestry track to Lochaber Loch, 160 m alt., Mabie Forest, NX92477068, EM Kungu & V Heppell; 82: boggy hollow in limestone grassland by sea, 5 m alt., Catcaig 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-Ulamba, NR3015, NG Hodgson 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 Fairfield, SP150000, RV Lansdown; H4: track at entrance to wood, 90 m alt., by Ballygiblin Cross Roads, Cestlcitown, 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, NS3522638, GP Rothero 2012004.

111.31. Bryum dichotomum. 78: on gravel of farm track, 220 m alt., Hundlehope Farm, south of Peebles, NT23013653, DG Long 41926 (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-sloak, with patchy low grasses and rushes, ca 5 m alt., Catherine’s Isle, NE. of Dunfanaghy, CO2793766, 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, Aberfraw, 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 Encalpta 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, NY453593, 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 klinggraeffii. 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., Mapastap Bridge, NE of Ardee, N98579548, DG Long 42239 (E); H4: with Ephemera minima, and Tortula truncata in stubble field, 110 m alt., S of road E of Wallis’s Bridge, W287923, CD Preston, TL Blockeel & JL Denyet.

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, NY46673530, 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.


111.47. Bryum alpinum. H30: on poached, wet peaty ground, Monydooy, H166527433, RL Hodd (DBN).


111.14. 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 Pillington 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.

111.16. 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).

111.17. Poblia lescurtiana. 14: on soil in clearing, Hauxden Park Wood, near Mayfield, TQ618268, T Ortle 12052002.


119.2. *Plagiochisma affine.* 72: in 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 Banny, R37359623, 2004, NG Hoddets 4891 (DBN); H9: fenny fringe of lough, 30 m alt., Lough Banny, R37809619, 2004, NG Hoddets 4889 (DBN).


130.1.b. *Fontinalis antipyretica var. gracilis.* 63: place in (), not recorded since 1995 (Leeming, near Keighley SE03, J. Appleyard).


132.2. *Palustriella falcula.* 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, N3612079, M Lyons.

134.2. *Campylium protonem.* 74: flush on hillside, 170 m alt., Arfield Fell, NX232660, MO Hill.

135.1. *Campyliadelphus chrysophyllus.* 27: base of gravestones in churchyard, Hethel, TG172004, 2011, RJ Fisk; H13: calcareous grassland, 3 km east of Bagnestown, S7382161380, JR Roche & F Devaney (DBN); H24: calcareous gravel in old pit, ca 65 m alt., Eskraigh, ca 3km north of Curry, G483092, TL Blockeel 41/322.

135.1.b. *Amblystegium serpens var. salinum.* 73: in damp rock crevices, rocky shore sea, 1 m alt., west side of Broughyse Bay, NX63504579, DG Long 42288 (E); H12: thin coastal turf on low rocky cliffs just above highwater mark, with *Festuca rubra* and *Alyssium vulgare*, 2 m alt., Baginbun Head, S80130323, SDS Bosanquet & CD Preston.

137.1. *Hygroamblystegium flaviatile.* 70: on silty boulders on river bank, 70 m alt., Eden Gorge, south of Armadhatwe, NY5144, TL Blockeel 41/271; 104: on rocks in burn in ravine, just above stony beach, 5 m alt., Allt Eulkie, Earlish, NG381609, NG Hoddets 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, Hawshawk’s Bridge, S881197, SDS Bosanquet & CD Preston; H29 in 0: Glencar, G74, 1928, WR Megaw, det. DT Holyoak (BEL); H39: Salix base by river, 70 m alt., Dunminning Bridge, D050108, SDS Bosanquet.


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 Hoddets (DBN).


139.1. *Ceratodon purpureus.* 82: on sandstone bluff in ravine, 50 m alt., below stony beach, 5 m alt., Allt Mor, G11890910, DG Long & RL Hodd.


140.2. *Drepanocladus aduncus.* H30: marsh, ca 75 m alt., Cornabrahra, Cootehill, H572113, M Eakin; H5: submerged in marsh, ca 90 m alt., Kilcolman Bog, ca 4km NW of Doneraile, R583108, TL Blockeel 41/033.

143.3. *Hygroamblystegium ochraceum.* H27: on boulder in stream, open moorland slope, ca 100 m alt., White River below Nephin Mts, GI1890910, DG Long et al. 41908; H36: rocks in river, 240 m alt., Goles Forest, Sperrin Hills, H682939, EM Kungu & DF Chamberlain.

143.4. *Hygroamblystegium luridum.* H19: in flood zone of canal bank, 80 m alt., Tickneven Bridge, Kilpatrick, N679303, M Eakin; H36: parapet of road bridge, 190 m alt., Oughtmame Burn, Sperrin Hills, H62939, DF Chamberlain; H39: on stone by river, Kells Water, Shank Bridge, J125980, MO Hill.

145.1. *Wartstartis fluitans.* 79: submerged in


146.2. Sarmentypnum sarmentosum.


149.3. Scopidiunm scorpionides. H3: placed in (), the only reliable records are from the 19th century; H29: blanket bog flush next to small stream, near bog road, 224 m alt., Carrowaleck, near Rosslinver, Arroo mountains, G892470, EJL O’Sullivan (DBN); H30: fen dominated by Sphagnum contortum, 70 m alt., Cornabutra, Cootehill, 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, EJL O’Sullivan (DBN).


150.2. Calliergon giganteum. H57: 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).


156.1.a. Abietinella abietina var. abietina. H44: 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. hystricium.

157.2. Thuidium delicatulum. H59: 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. H119: calcareous bank by road, gravel pit near Usk, N83900280, 2011, JL Denyer JLD_B_3054 (DBN); H19: thin turf on tufa outcrop, with Entodon concinna, ca 120 m alt., Hartwell Upper, N944214, NG Hodgetts et al. 8183.


164.1. Rhychnostegium murale. H74: wall top, 50 m alt., car park for St Ninian’s Well, NW of Burrow Head, NX4336, MO Hill.


165.3. Rhychnostegiella curviseata. H4: 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 Hypnum brychnium tenax, det. DT Holyoak.

165.4. Rhychnostegiella tenuifera. H72: 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. H72: rocky bank of river, in a ravine, 120 m alt., Wampnray Glen, NY12279652, EM Kungu (E); 80: bare earth, by steps, 110 m alt., Mossburnford, Jacobs Ladder, above caravan site, NT6616.
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167.4. *Oxycnium speciosum*. 34: on wet woodland, Charfield Meadow NR, ST717937, RV Lansdown; 36: on elder branch at pond margin, Berrington Hall Pool, near Leominster, SO510631, JD Sleaf; 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), M942621331, CA Maher & F O'Neill (DBN); H5: in woodland seepage zone, 40 m alt., Funshion Valley, Ballynahane, R272080, 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., Etrick Church, NT25991444, DG Long; 44: on stone by stile, 20 m alt., north bank of R. Blackwater, near Killnamurray, South Down, 6 km east of Ferrymead, W87099, TL Blockeel 41/040.

170.3. *Brachythecium glareosum*. 85: on the ground close to limestone quarries, under trees, 35 m alt., Limekilns, NT073867, DF Chamberlain (E); H28: on base of wall, Crockoona, G354292, SV O'Leary; H40: unquarried basalt outcrop, 220 m alt., Keady Mountain Quarry, C7220415, SDS Bosanquet.

74: floor of disused quarry round, 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, W2429, TL Blockeel 41/024; H5: girtted ground by road, Ballygarvan, W of Castletownroche, R6402, MO Hill; H8: girtty roadside, by Dromtrasna Bridge, R1723, MO Hill; H21: dune slack, 5 m alt., North Bull Island, O226996201, 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, C9350, MO Hill; H40: forestry entrance, Somerset Forest, Co Cavan, C85103049, SDS Bosanquet.


171.2. *Scleropodium touretii*. H22: delete the entry, which is based on records from Muckross, 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 Connemara with no supporting specimen.

173.1. *Bryochytaeunatum 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.


177.2. *Calliergonella eidiangi*. 73: edge of forestry track to west of Dalshinnie Loch, 130 m alt., Mabie Forest, NX93717059, EM Kungu & V Heppel.


179.1. *Pyloispa 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, SJ510791862, DA Callaghan 14/17; 63: on sycamore tree at edge of small beech plantation on margin of reservoir, 265 m alt., Scamondan Water, SE0941657, TL Blockeel 41/362.


183.1.b. *Ceratodon mulliscae var. condensatum*. H38: with other bryophytes on damp schistose rock ca 2 m above water, 50 m alt., Spinkeew River, Tollymore Forest Park, J363182, 2002, DT Holyoak 02-985 (BBSUK).


190.1. *Loesekobryum brevirestre*. H5: on bank by forest road in conifer plantation, ca 250 m alt., Knockdow, Ballyhoura Mountains, R5177, TL Blockeel 41/034.

191.4. *Myurella julacea*. H16: delete the entry, the record from Connemara (JT MacKay, 1836) is vaguely localised and is unconfirmed.


196.2. *Orthothecium intricatum*. 110: crevices and ledges in cliff on N-facing hillside, ca 100 m alt., Feirisbhal, Creag na h-Uamha, NB3015, NG Hodgetts 8068.


197.3.a. *Plagiobryum denticalatum var. denticalatum*. H28: fern base by path, Knockbrack, G306229, SV O'Leary.

197.3.b. *Plagiobryum denticalatum var. obtusifolium*. 75: Craig, 430 m alt., above the Nick of Ballock, NX43259253, EM Kungu & V Heppel; H8: rock crevices in steep north-facing gully just north of summit, ca 750 m alt., Galby Mountains, Carrignabinnia, R88002930, 2005, NG Hodgetts 6121 (DBN); H27: rocks by shore, 550 m alt., Knockdow, SN924095, NG Hodgetts 8061; H39: on shore rocks by shore, 550 m alt., Spinkeew River, Tollymore Forest Park, J363182, 2002, DT Holyoak 02-985 (BBSUK).

near South Cerney. SU066952. RV Lansdown; H8: steep sheltered bank below crags, 470 m alt., Seefin Mountain, R441418, MO Hill.


197.9. Plagiostichium nemoralis. 85: sheltered sandstone rock face, Dunino Burn, steps down to the burn, below the church, NO593903, DG Long 42220 (E).

201.1. Entodon concinnus. H13c: calcareous grassland, 3 km east of Bagnelstown, S7382163180, RJ Roche & F Devaney.

201.2. Platygyrium repens. 14: on elder near stream, 30 m alt., Framfield, TQ498198, T Ottley 12035001.


207.1.a. Leucodon sciuroides var. sciuroides. 31i: place in (), the record from Tilbrook churchyard TL081692 (NG Hodggett, 1992) is in VC 30 and the only previous record was made in 1906: 61i: 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.


213.3. Isothecium bolitii. 75: rocks by stream, 120 m alt., Poligow Burn, upstream from the B7027, NX2579, DF Chamberlain & EM Kungu; H27: boulder on lake shore, ca 550 m alt., Lough Adaine, Slieve Carr, F91951419, JL Denyer JLD-B-12-04 (DBN).

Contributors/collectors of records