

# The Moss Year – 2022

In 2022 there were 244 moss additions and amendments to the census catalogue (based on specimens received by 15 January 2023). Although this figure is lower than the total of 310 in 2021, it represents a return to a pattern of more typical recorder activity and collecting.

Because of the bracketing of many species/vice-county combinations in the latest census catalogue (Blockeel *et al.*, 2021), proportionally twice as many debracketers were submitted than in 2021: 32% of the vouchers submitted in 2022 were debracketers compared to 16% the previous year. The figures are summarised in Table 1.

The resumption of a full programme of national field meetings generated a significant number of additions and debracketings in Cornwall and the Isle of Jura. In Cornwall, the spring meeting produced six new moss vc records, no mean feat for such a well-worked county. In June, the summer meeting on Jura added 18 moss taxa to the vc 102 list.

The AGM, held at Middlesbrough in September, was well-attended and provided a good opportunity for generating new vc records in North-east Yorkshire. Its field excursion to South Gare, an interesting dunescape near Redcar, resulted in four vc records, including the rare *Bryum warneum* and, most unexpectedly, *Encalypta rhaptocarpa*. Recording in the nearby Cleveland Hills by members arriving early produced another seven vc records, including *Seligeria calycina*, a rarity so far north.

Overall, the new records were distributed across 82 of the 153 British and Irish vice-counties and 55 individuals were involved in contributing them (as the first-named recorder on a voucher). Eight recorders submitted ten or more vouchers or amendments: Sharon Pilkington 37, Des Callaghan 31, Sean O’Leary 12, Jonathan Sleath 11, Nick Hodgetts 11, Liz Kungu, Rory Whytock and Tom Blockeel ten each. Another eight recorders contributed between five and

**Table 1. Analysis of amendments to the Census Catalogue for 2022**

	2022				2021			
	England	Wales	Scotland	Ireland	England	Wales	Scotland	Ireland
New entries	73	14	54	20	103	46	39	34
Debrackets*	52	4	16	6	17	1	16	18
Reinstated			1+[1]		-	-	-	-
Bracketings*	1+[1]	-	-	-	-	1	-	-
Deletions	-	-	1	-	17	8	6	4
Totals	127	18	73	26	137	56	61	56

\*Debrackets are existing vice-county entries for which a post-1970 record has been vouched. Bracketings are existing entries for which the post-1970 records are unconfirmed or erroneous but older record(s) are known or thought to be valid. Newly bracketed records are those not previously listed in a vice-county but older than 1970; these are indicated by [1]. New records include persisting introductions. Reinstated records are new unless bracketed, indicated by [ ]

nine vouchers or amendments: David Long and Gordon Rothero nine each, George Smith and Matt Sutton eight each, Andrew Branson and Claire Halpin seven each, and James Brockbank and Mark Lawley five each.

### Additions and amendments to the British and Irish lists

*Tortula bolanderi* was discovered new to Britain in Norfolk by Mary Ghullam in 2021 when she was monitoring a population of *Reboulia hemisphaerica* on a road bank (Blockeel & Ghullam, 2023). This species is known from the United States and Canada, the Canary Islands, France and several other Mediterranean

countries. Its brown colour and grape-like rhizoidal tubers render it distinctive.

Intensive morphological and molecular research into the differences between *Leucobryum juniperoideum* and *L. glaucum* confirmed unequivocally that a third species, *L. albidum*, is a locally frequent member of the British flora and it is also present in Ireland and continental Europe (Ottley *et al.*, 2023). *L. albidum* has long been considered to be primarily a North American species. The study indicates that *L. albidum* is a common plant in the wooded habitats formerly thought to support *L. juniperoideum*. Conversely, *L. juniperoideum* sensu stricto appears to be a scarce plant of western, humid ravines and very

▽ Figure 1. *Dicranum elongatum*, Sron Daraich, Skye. Nick Hodgetts



sheltered places. To reflect these differences, three new, closely defined species concepts have been added to the British and Irish checklist: *L. albidum*, *L. juniperoideum* s.str. and *L. glaucum* s.str.

### Selected highlights

In 2022, Scotland's tally of moss records rose to 30% of the total number submitted, up from 18% in 2021. This in itself is quite an achievement, but even more so as a significant number of these were rarities or mosses of high altitudes. Rory Whytock found some of these during exploration of the mountains close to home in Morayshire. His most significant finds included two rare high-altitude plants from the Cairngorm massif, *Andreaea sinuosa* and *Hylacomiastrum pyrenaicum*, as well as *Bartramia halleriana*, *Cynodontium strumiferum* and *Grimmia incurva* in the hills above Aviemore.

While exploring coastal habitats on Skye, Nick Hodgetts unexpectedly came across one of the best finds of the year. *Dicranum elongatum* is a very rare, apparently declining species with only one known extant population. It has not been found on Skye before, so his discovery of a large and luxuriant-looking cushion on a boulder is doubly significant (Fig.1). Nick's considerable expertise on Scottish rarities also came in handy during the summer meeting on Jura, where he found *Campylopus schimperi*, a very useful gap-filler for the western islands.

In Argyll, Gordon Rothero was delighted to find a thriving population of *Philonotis rigida* on a wet rock face. This oceanic moss is very rare in Scotland and his population can lay claim to being the most northerly in Britain.

Scotland's highly diverse and locally complex geology makes it an exciting place to bryologise and sometimes even small sites can have very special rocks that in turn support communities

of rare bryophytes. Such is the case with Dob's Linn, a small ravine in upper Moffatdale. A recording meeting to this site generated four new or recent records for vc 72, including the rare *Platyhypnum duriusculum* (David Long) and *Grimmia elongata* (Gordon Rothero). Later in the year, another small group led by Liz Kungu scrambled up the nearby valley of Black Hope to see if the same rocks outcropped there and discovered a new population of *Schistidium pruinosum*, a rarity in south-west Scotland.

David Long found the first Scottish mainland population of *Bryoerythrophyllum campylocarpum*, in the unlikely setting of young community woodland near Selkirk. This location is intriguing because, not only is it in the east of Scotland, but it is around 45 km inland. Other new vc populations were recorded as far afield as Dartmoor in Devon (new to England) and Co. Antrim (new to Northern Ireland). Matt Sutton also found it in Pembrokeshire, S.W. Wales.

In 2021, 15% of the total moss records (excluding deletions) came from Wales. This dropped to 7% in 2022, with the majority of finds made by Matt Sutton and Claire Halpin. As usual, Matt found a number of exciting species in his corner of S.W. Wales, including a second Welsh population of the very rare *Ephemerum cohaerens* in Pembrokeshire. Another outstanding find was *Grimmia elongata* from the Preseli hills, east of Fishguard. This rare high-altitude species has hitherto been absent from southern Wales and Matt's find represents an important extension of its range.

Other outstanding Welsh finds include Sam Bosanquet's *Aloina brevirostris*, new to Wales from a Montgomeryshire quarry, Claire Halpin's *Drepanocladus polygamus* growing weedy on a Breconshire track, and the third Welsh vc record of *Didymodon tomaculosus* by Mark Lawley, near the River Vyrnwy. Mark also laid claim to the

third Welsh record of the diminutive and very rare *Micromitrium tenerum* whilst bryologising in the drawdown zone of Lake Vyrnwy itself.

Climate change means that extreme summers such as in 2022 are likely to become more frequent in the future. Much of the country experienced a prolonged period of very dry weather, with exceptionally high peak temperatures in July and August. By September, many reservoirs and natural waterbodies were dangerously low and drought was declared in some regions. Such conditions, of course, stimulated autumn recording activity in places that would normally be underwater and this resulted in some outstanding finds. One of the best must be *Physcomitrium readeri*, a tiny, gregarious ephemeral of reservoir margins. This little moss was added to the British checklist in 2010 but until 2022 was known from only three English vice-counties. In October and November, it was reported new to reservoirs as far apart as Sussex (Sue Rubinstein) and Somerset (Andrew Branson). It was also found on the Lizard in Cornwall by Louis Parkerson, although his voucher arrived too late for inclusion in this report. A particularly interesting aspect of all three finds is that *P. readeri* was only found on silt that would not be exposed in a normal year, and in proximity to scattered *Crassula helmsii* (see Fig. 3).

Although total numbers of vouchers from Ireland were down from 2021, they were sent in from no fewer than 16 vice-counties. In Northern Ireland, the increasing non-native, *Atrichum crispum*, was recorded for the first time by Ewan Shilland. In Co. Antrim, a survey of an ASSI by Nick Hodgetts demonstrated his expertise with inconspicuous montane mosses when he found *Grimmia longirostris* and *G. muehlenbeckii*. *G. longirostris* is an especially valuable record as the only other known post-1970 Irish population is

in West Galway.

Unsurprisingly, a substantial number of Irish moss vouchers were *Sphagnum* species. Particular highlights include Jo Denyer's discoveries of *S. subnitens* var. *ferrugineum* in two new vice-counties. This rare all-brown variety resembles *S. fuscum* and *S. beothuk*, the latter also found twice by George Smith.

Special mention must be made of Des Callaghan's survey work on the Isle of Man, which contributed the largest number of moss vouchers from any single vice-county. There was a joint BBS/BSBI recording meeting on the island in 2018, but it was a very dry summer and not well attended by bryologists, and numerous taxa were newly bracketed in 2021. Des succeeded in adding ten new moss taxa to the island's list, including significant range extensions for *Didymodon australasiae* and *Schistidium maritimum* subsp. *piliferum* and filling a gap for *Tortella inclinata*. He also restored a further 11 bracketed moss taxa to the island's list.

Just over half (52%) of all moss addition and amendment submissions came from English vice-counties, slightly up on 2021 (44%). One of the most exciting discoveries was Andrew Branson's *Tomentypnum nitens* on Exmoor, new to south-western England and a long way from its nearest known populations. He was exploring more of the exciting base-rich flush systems that have produced many other new vc records in the last few years. In Wiltshire, surveys on Salisbury Plain military training area also generated a few significant finds, including a westerly range extension for *Orthotrichum pallens*, together with *Didymodon ferrugineus* and *Weissia wilsonii*, both unexpected on the chalk.

Several recent additions to our moss flora saw significant range extensions in 2022, no doubt reflecting increased familiarity by bryologists. *Dicranella howei* was added to five more vice-

counties, four of which are in southern England. The three *Ulota crispa* agg. segregates, introduced in 2017, are now being recorded more frequently. *U. crispula* was confirmed new to five new vice-counties, all in southern England except for Breconshire. *Ulota intermedia* was verified new to no fewer than eight vice-counties as far apart as S. Devon and northern Scotland. In Suffolk, Richard Fisk re-examined a 2000-dated collection of *Microbryum davallianum* after reading the article about its currently recognised varieties (Pilkington, 2022a) and found it to be the rare var. *commutatum*, new to East Anglia and a good example of the importance of maintaining a personal herbarium.

*Bryum creberrimum* is a cryptic species that deserves more recognition, although its summer-fruiting period and preference for dryish, unpromising-looking habitats means that it is likely to be overlooked. The sharp eyes of Jonathan Sleath and Des Callaghan added it to two new south-eastern vice-counties in 2022.

*Syntrichia ruralis* var. *epilosa* was discovered new to Britain in 2011 in Buckinghamshire, but there have been very few subsequent records of this neglected variety of a familiar moss. Steven Heathcote's discovery of only the third British vice-county record in Yorkshire is therefore very interesting and extends its British range a long way north. Surely there must be more to be found elsewhere.

Finally, Tom Blockeel's discovery (in a Liverpool museum) of a 120-year old specimen of *Blindiadelpus campylopodus*, new to Derbyshire is a lesson in how painstaking bryological detective work can yield interesting results. Tom was suspicious of the original record of *B. recurvatus*, which seemed to be in the wrong kind of habitat, and after investigating the herbarium specimen, redetermined it as the rarer species.

### New vice-county records and amendments

Vouchers are deposited in the BBS herbarium (BBSUK) unless stated otherwise; codes for other herbaria cited are the National Botanic Garden, Glasnevin, Dublin (DBN), the Royal Botanic Garden, Edinburgh (E) and the National Museums Liverpool (LIV). The symbol † indicates a persisting introduction. Records were made in 2022 unless indicated otherwise.

- 1.3. *Sphagnum austinii*. 79:** blanket bog, 350 m alt., Kingside Loch, SW of, NT338133, 15 June 1988, R.W.M. Corner & M.E. Braithwaite, conf. D.G. Long (E).
- 1.5. *Sphagnum papillosum*. 18:** mesotrophic mire, Deershelter Plain, Epping Forest, TQ4274898802, D.A. Callaghan.
- 1.7. *Sphagnum medium*. 85:** lowland raised bog, 115 m alt., Portmoak Moss Woodland Trust, formerly a conifer plantation, cleared 2014, NO1790601535, E.M. Kungu (E); **102:** acidic mire, in wet hollow, 135 m alt., Isle of Jura, near east end of Lochan Gleann Astaile, NR48177172, D.G. Long 47439 (E); **102:** in wet flush, Ruantallain, Jura, NR5087283432, S.V. O'Leary; **109:** at edge of bog pool with *S. tenellum*, *S. papillosum* and *S. cuspidatum*, 100 m alt., Munsary Reserve, ND2176046200, O. Moore; **H10:** pool in cutover bog, Lough Nahinch, R9921893684, 23 November 2021, G.F. Smith & W. Crowley 2127047 (DBN); **H25:** in cutover raised bog, Carrowbehy Bog, M5705782443, 6 July 2021, G.F. Smith R00059709010 (DBN); **H40:** intact raised bog, 50 m alt., Ballynahone Bog, Maghera, H851981, J. Denyer & R. Hodd.
- 1.8. *Sphagnum divinum*. 85:** lowland raised bog, 115 m alt., Portmoak Moss Woodland Trust, formerly a conifer plantation, cleared 2014, NO1789901569, E.M. Kungu (E); **97:** mire, Claish Moss, NM7067, M. Lawley; **102:** Gleann Astaile, Paps of Jura, NR47267154, G. Haycock, conf. M.O. Hill; **H25:** in cutover raised bog, Carrowbehy Bog, M5622483877, 30 June 2021, G.F. Smith R00059729009 (DBN).
- 1.13. *Sphagnum russowii*. H39:** damp heathland behind cliff-top, below *Calluna*, 200 m alt., Fair Head & Murlough Bay ASSI, D18724212, N.G. Hodgetts 11484.
- 1.15. *Sphagnum warnstorfi*. H15:** With *S. contortum* in alkaline fen vegetation in Atlantic



△ Figure 2. *Sphagnum pulchrum*, Boddle Moss, S. Northumberland. Tom Charman

- blanket bog, 217 m alt., Derrygoolin South, nr Woodford, R6947598483, N. Lockhart & C. Campbell 2022/01a (DBN).
- 1.16. *Sphagnum capillifolium*. 88:** in M19 bog, Beinn a' Chuallais, nr Kinloch Rannoch, NN68556182, O. Moore.
- 1.19. *Sphagnum beothuk*. 67:** in valley mire vegetation, 260 m alt., Heining Head Flow, NY71237502, J. O'Reilly; **H23:** central ecotope in raised bog, Garriskil Bog, N3539567718, 27 May 2021, G.F. Smith 2199101 (DBN); **H40:** intact raised bog, 50 m alt., Ballynahone Bog, Maghera, H851980, J. Denyer & R. Hodd.
- 1.20.b. *Sphagnum subnitens* subsp. *ferrugineum*. H24:** high bog area (uncut) on raised bog, 45 m alt., Brown Bog, N0970475890, J. Denyer; **H40:** intact raised bog, 50 m alt., Ballynahone Bog, Maghera, H86119785, J. Denyer & R. Hodd.
- 1.23. *Sphagnum subsecundum*. 105:** open mire in pine forest, in wet hollow, 25 m alt., Tansley Bog near Rhu Noa, Loch Maree, NH00386466, D.G. Long, D. Bell & N.E. Bell 47382, conf. M.O. Hill (E).
- 1.32. *Sphagnum pulchrum*. 67:** raised mire, 330 m alt., Boddle Moss, NY9929997190, 16 September 2021, T.G. Charman (Fig. 2).
- 1.34. *Sphagnum flexuosum*. 18:** mesotrophic mire in woodland glade, Jack's Hill, Epping Forest, TQ4361199469, D.A. Callaghan.
- 1.35. *Sphagnum angustifolium*. 73:** wet planted woodland, Glen Trool, NX38977882, S.L. Pilkington 22109.
- 2.5. *Andreaea sinuosa*. 96:** in deep rock crevice, 1105 m alt., Fiacail Buttress, Cairn Gorm S, NH9882502971, 19 June 2021, R.T. Whytock, conf. D.G. Long.
- 4.1. *Tetraphis pellucida*. H18:** conifer stump in woodland on cutover bog, Hawkswood Bog, N341186, G.F. Smith 2299001 (DBN).
- 5.1. *Tetradontium brownianum*. 102:** vertical rock face in ravine, 49 m alt., Lealt, Isle of Jura, NR6613790892, R.T. Whytock.



△ Figure 3. *Physcomitrium readeri* with *Crassula helmsii*, Wimbleball Lake, S. Somerset. Andrew Branson

- 6.1. *Atrichum crispum*. H36:** at edge of stream, 270 m alt., Coneyglen Burn, Sperrins, H640884, 14 August 2018, E. Shilland. First found at site in 2015. Confirmed by L. Ellis and M.O. Hill.
- 8.1. *Polytrichastrum alpinum*. 6:** top of drystone wall by conifer plantation, 285 m alt., Stockhill Plantation, near Priddy, ST56125097, S.L. Pilkington 22051.
- 10.1. *Polytrichum longisetum*. 102:** heathy slope, on disturbed peat, 140 m alt., Isle of Jura, above NW end of Lochan Gleann Astaile, NR47297210, D.G. Long 47440 (E); **H30:** in flushy, rewetted cutover bog, Killyconny Bog, N6751682395, 8 October 2019, G.F. Smith & W. Crowley 199908 (DBN).
- 10.4. *Polytrichum perigoniale*. 1:** edge of track leading up to Lord's Wood, on short track branch, 40 m alt., south of Garras, SW81614826, E.M. Kungu & G.P. Rothero; **3:** On moorland track, 365 m alt., Bellever, SX65187802, S.L. Pilkington 22062.
- 12.1. *Diphyscium foliosum*. 71:** damp crevice in rock outcrop beside stream, Glen Auldyn Mine, SC4194590957, D.A. Callaghan.
- 14.3. *Encalypta rhaptocarpa*. 62:** on ledge of 'crag' formed by solidified, slag-based waste, South Gare, Tees Mouth, NZ56502621, T.L. Blockeel & A. Vanderpoorten 51/279. First found nearby by M.O. Hill.
- 16.3. *Entosthodon attenuatus*. 73:** stream bank, Wood of Cree, forestry above, NX37497289, S.L. Pilkington 22101.
- 17.4. *Physcomitrium readeri*. 5:** abundant on lower drawdown zone, 263 m alt., Wimbleball Lake, Exmoor, SS9750631589, A.J.P. Branson (Fig. 3); **14:** exposed mud on reservoir edge, Ardingly Reservoir, TQ320299, S. Rubinstein, conf. T.L. Blockeel.
- 17.5. *Physcomitrium patens*. 70:** draw-down area of local farm pond, toward the middle, which does not usually dry out, 10 m alt., Edderside, NY09984558, D.A. Muscat.
- 21.1. *Flexitrichum flexicaule*. 44:** open sand

- in excavated track line, Pendine Burrows, SN27860724, M.D. Sutton.
- 23.1. *Archidium alternifolium*. 71:** broken turf of coastal headland, Bradda Head, SC1853469784, D.A. Callaghan.
- 24.1. *Micromitrium tenerum*. 47:** on mud, draw-down zone of reservoir, Lake Vyrnwy, SH964224, M. Lawley.
- 26.2. *Campylopus schimperi*. 102:** among rocks on N.-facing slopes, 310 m alt., Beinn Shiantaidh, Jura, NR5160075495, N.G. Hodgetts.
- 26.5. *Campylopus pyriformis*. 71:** peaty soil on heathy bank, Beckwith's Mine, SC2507077792, D.A. Callaghan.
- 27.1. *Leucobryum glaucum* s.str.** Delete all existing *L. glaucum* entries. Add [1], 2, [3-5], 7, [9], 11, [12], 13, 14, 16, [17], 18, 21, 24, [27], 37, [42], 45, 46, 48, [49], 56: oak dominated wood pasture and heathland, 140 m alt., Sherwood Forest Country Park NNR, Birklands, SK61016799, M. Crittenden & D.C. Wood, det. S.L. Pilkington; 57, 60, 62, 65, [68, 69], 102, 104, 105. For all vice-counties except 56, see Ottley *et al.* (2023).
- 27.2 *Leucobryum juniperoideum* s.str.** Delete all existing *L. juniperoideum* entries. Add 2-4, [9], 14, 35, 40-42, 44-49, 57, 64, 86, 97, 98, 101-103, H6, 13, 16. See Ottley *et al.* (2023).
- 27.3 *Leucobryum albidum*. 1-3, 5, 6, 8-16, 18-20, [21], 22-25, 28, 30, 39, 41, 45, 46, 48, 57, 64, 70, C, H2, 11.** See Ottley *et al.* (2023).
- 29.2. *Dichodontium flavescens*. 3:** damp rock wall in deep wooded ravine, 180 m alt., Lydford Gorge, SX5079684557, D.A. Callaghan.
- 31.6. *Dicranella howei*. 1:** side of roadside ditch with *Didymodon tophaceus*, Kynance, SW6845613492, M. Pool; 3: barish, stony gap in turf, Dawlish Warren, SX98027856, S.L. Pilkington 22012; 4: on shaded calcareous soil, Holcombe Rogus, ST06811842, J.D. Sleath; 5: bank below Tinker's Hill, 161 m alt., Clapton Farm, Cucklington, ST7553828668, A.J.P. Branson; 111: Stony, ± calcareous track, Barth Head, South Ronaldsay, ND429855, 16 December 2021, J. Crossley, conf. N.G. Hodgetts.
- 32.1. *Fissidens viridulus*. 71:** soil of eroding stream bank, Groudle Glen, SC4203578386, D.A. Callaghan.
- 32.2. *Fissidens crispus*. 17:** on chalk soil in woodland, TQ1450, J. Brockbank.
- 32.6.b. *Fissidens bryoides* var. *caespitans*. 69:** stream, SD2295, 1 July 2021, J. Brockbank.
- 32.7. *Fissidens rivularis*. H4:** River Blackwater

▽ Figure 4. *Cynodontium strumiferum*, Creag na h-loilaire, Moray. Rory Whytock





- (Munster), upstream of Awnaskirtaun River confluence, W186930, 29 August 2021, R.V. Lansdown 18B020400.
- 32.9. *Fissidens crassipes*. 12:** on bridge stonework at water level over the River Itchen, Itchen Stoke, SU55853219, J.D. Sleath.
- 32.13. *Fissidens curvatus*. 1:** soil bank beside track in woodland, Gwendreath, SW7332216876, D.A. Callaghan.
- 32.20. *Fissidens fontanus*. H4:** River Lee (Cork), Leemount Bridge, W609717, 28 August 2021, R.V. Lansdown 19L030700.
- 34.11. *Dicranum elongatum*. 104:** very large dense cushion on thin soil on boulder on S. bank of burn, just above small estuary, 5 m alt., Tokavaig, Sron Daraich, Allt an Leth-bheinn, NG60531250, N.G. Hodgetts 11455, conf. L. Hedenäs (Fig. 1).
- 36.2. *Rhabdoweisia crispata*. 4:** on horizontal dry rock ledge, 380 m alt., Sourton: Sourton Tors, SX5418089970, 14 April 2019, J.A. Norton; **102:** in crevice on crag, Beinn an Oir, Jura, NR5144775223, S.V. O'Leary.
- 36.3. *Rhabdoweisia crenulata*. 102:** cleft in rock by gully, Allt Bun an Eas, Jura, NR4573676100, S.V. O'Leary; **H20:** north-facing granite boulder at edge of small cave, Barnacullian, O0779805723, R. Hodd & J. Denyer.
- 37.2. *Cynodontium strumiferum*. 95:** boulder scree, 485 m alt., Creag na h-iolaire, NH8744512439, R.T. Whytock (Fig. 4).
- 46.2. *Pleuroidium subulatum*. 102:** deep rocky gully on sea coast, on eroded path on steep grassy slope, 10 m alt., Isle of Jura, Glac nam Bocan, Brein Phort, north side of mouth of Loch Tarbert, NR50648352, D.G. Long (E).
- 49.1. *Ditrichum pusillum*. 44:** disused sand school, near Iet-y-bwlch, SN16962818, M.D. Sutton.
- 54.4. *Weissia rutilans*. 57:** on sandy soil on embankment at edge of disused airfield, 185 m alt., by Bradley Wood, Ashbourne, SK20364600, T.L. Blockeel 51/006; **79:** mud at the margin of a small pool, Mauldsheugh Wood, Selkirk, NT46112821, E.M. Kungu & D.G. Long, with Borders Recording Group (E).
- 54.6.b. *Weissia brachycarpa* var. *obliqua*. 62:** on soil of grassed over limestone spoil heap, Kepwick Quarry, SE48759145, J.D. Sleath & C.D. Preston.
- 54.9. *Weissia wilsonii*. 3** – see Callaghan *et al.* (2019); **8:** disturbed chalk grassland on steep N.W.-facing slope, 150 m alt., Bulford: Beacon Hill, SU19004255, S.L. Pilkington 22023.
- 54.11 *Weissia levieri*.** Delete **3** - see Callaghan *et al.* (2019).
- 57.2. *Tortella nitida*. 24†:** on limestone rockery, Taplow Court, SU9065282309, S.V. O'Leary.
- 57.8. *Tortella inclinata*. 45:** on or near lime kiln near wooded estuary foreshore, Minwear Wood, SN04771384, M.D. Sutton; **71:** soil bank on steep N.-facing coastal slope, Bradda Head, SC1859170340, D.A. Callaghan.
- 57.10. *Tortella fasciculata*. 112:** on boulder, Swae Field, Brouster, HU26575279, S.V. O'Leary.
- 58.1.a. *Chionoloma tenuirostre* var. *tenuirostre*. 96:** on rocks by burn, 400 m alt., Allt Fearná, Garvamore, NN528935, G.P. Rothero & P.J. Thompson 2022137.
- 58.1.b. *Chionoloma tenuirostre* var. *holtii*. 65:** on wet crag in ravine below waterfall, River Rawthey near Uldale House, SD73049641, T.L. Blockeel 51/060; **96:** on silted tree base by river, 215 m alt., River Spey near Bogach fen, NH88410999, G.P. Rothero & P.J. Thompson 2022129; **102:** on wall of ravine, 60 m alt., Lealt Ravine on Dearg Alt,

▽ Figure 5. An unusual location for *Gymnostomum calcareum*, on hard chalk, Melbury Wood, Dorset. Sharon Pilkington





△ Figure 6. *Bryoerythrophyllum campylocarpum*, Mauldsheugh Wood, Selkirkshire. David Long

▽ Figure 7. *Didymodon ferrugineus*, Salisbury Plain, S. Wiltshire. Sharon Pilkington



NR6690, E.M. Kungu, D.G. Long & G.P. Rothero (E).

**58.2. *Chionoloma cylindrotheca*. 4:** mudstone outcrop beside river in wooded ravine, 150 m alt., Lydford Gorge, SX5048484043, D.A. Callaghan; **102:** damp stony heath slope, in damp rock cleft amongst boulders, 260 m alt., Isle of Jura, NW ridge of Aonach Bheinn, above Lochan Gleann Astaile, NR47627115, D.G. Long 47433 (E); **102:** on boulder, Gleann Astaile, Jura, NR4761971139, S.V. O’Leary; **102:** rock crevices in N.-facing crags, 200 m alt., Gleann Astaile, Jura, NR4771, N.G. Hodgetts.

**59.1.a. *Hymenostylium recurvirostrum* var. *recurvirostrum*. H39:** flushed rocks below cliffs in N.E.-facing wooded boulder scree, 50 m alt., Fair Head & Murlough Bay ASSI, D191427, N.G. Hodgetts 11485.

**61.1. *Gyroweisia tenuis*. 73:** on base of old tombstone within ruined church, Minnigaff, NX41026655, S.L. Pilkington & P.J. Thompson 22107.

**62.2. *Gymnostomum calcareum*. 9:** shaded chalk bank, 204 m alt., Melbury Wood, ST907197, A.J.P. Branson (Fig. 5).

**62.3. *Gymnostomum aeruginosum*. 71:** mortar of old mine building, North Laxey Mine, SC4277488950, D.A. Callaghan.

**65.3. *Ephemerum cohaerens*. 45:** edge of path on causeway through marshy grassland surfaced with limestone, Waun Llechell, St David’s Airfield Heaths SSSI, SM79292614, M.D. Sutton. Also at SM7930026151.

**65.6. *Ephemerum serratum*. 79:** mud at the margin of a small pool, Mauldsheugh Wood, Selkirk, NT46112821, E.M. Kungu & D.G. Long, with Borders Recording Group (E).

**68.3A. *Bryoerythrophyllum campylocarpum*. 3:** soil pockets among rocks on shaded woodland track, 140 m alt., Water: Woodash, SX76708105, S.L. Pilkington 22083; **45:** rough stone track through conifer plantation, Gwarllwyn Wood, Pentregalar, SN17703019, M.D. Sutton; **79:** young community woodland, on stony footpath with *Riccia sorocarpa*, 120 m alt., Mauldsheugh Wood, Selkirk, NT46122828, D.G. Long 47704 (E) (Fig. 6); **H39:** on access track, 50 m alt., Fair Head & Murlough Bay ASSI, D191427, N.G. Hodgetts 11480, conf. S.L. Pilkington.

**69.1. *Leptodontium flexifolium*. 95:** on peat banking,

426 m alt., east of Dirdhu Farm, NJ0904320293, R.T. Whytock.

- 72.2. *Didymodon ferrugineus*. 8:** in broken, species-rich chalk grassland, 175 m alt., Salisbury Plain SSSI: nr Sidbury Hill, SU2134650947, S.L. Pilkington 22041 (Fig. 7).
- 72.8. *Didymodon nicholsonii*. 71:** shaded tarmac at edge of car park, Great Laxey Mine, SC4317485138, D.A. Callaghan.
- 72.12. *Didymodon australasiae*. 71:** sandy bank in old sand quarry, Point Ayre Nature Reserve, NX4606404376, D.A. Callaghan, conf. J. Kučera by DNA barcode data.
- 72.15. *Didymodon acutus*. 1:** stony ground of serpentine quarry, Gwendreath Quarry, SW7339816970, D.A. Callaghan.
- 72.16. *Didymodon icmadophilus*. 73:** on forestry track surfaced with crushed limestone, 60 m alt., Kirroughtree Forest, NX449650, S.L. Pilkington & P.J. Thompson 22103; **102:** on roadside mud, with *Cratoneuron filicinum*, Inverlussa, Jura, NR64598722, S.V. O'Leary.
- 72.18. *Didymodon tomaculosus*. 47:** on soil, bank of River Vyrnwy, Meifod, SJ172140, M. Lawley, conf. T.L. Blockeel.
- 76.1. *Aloina brevirostris*. 47:** on fine, dusty quarry mud by road, Criggion Quarry, SJ28821373, S.D.S. Bosanquet; Reinstated [83]: near Parson's Green, Edinburgh, NT27, 1822, D. Stewart; correctly confirmed by E.M. Holmes in 1874.
- 76.3. *Aloina aloides*. 71:** bank of sandy spoil in disused sand quarry, Point Ayre Nature Reserve, NX4608304367, D.A. Callaghan.
- 76.4. *Aloina ambigua*. 11:** coastal inlet on calcareous rock, Haslar Lake, Gosport, SZ62029934, J.A. Norton; **36:** along the edge of a stony track, Stretton Sugwas Gravel Pit, SO45584202, C. Halpin; **62:** ledge of crag formed by solidified slag, South Gare, Tees Mouth, NZ565262, A. Vanderpoorten, conf. T.L. Blockeel.
- 77.14A *Tortula bolanderi*. 27.** See Blockeel & Ghullam (2023).
- 77.15. *Tortula lindbergii*. 7:** disturbed chalk grassland, 245 m alt., Berwick Bassett Down, SU12147395, S.L. Pilkington.
- 77.18A. *Tortula pallida*. 2:** coastal slope, St Anthony's Head: Carricknath Point, SW84503202, C. Halpin.
- 77.21.c. *Tortula acaulon* var. *papillosa*. 24:** on



△ Figure 8. *Acaulon mediterraneum*, Dawlish Warren, S. Devon. Sharon Pilkington

soil by walls of churchyard, Little Missenden Churchyard, SU921990, S.V. O'Leary.

- 78.2.a. *Microbryum davallianum* var. *davallianum*. 6:** heavy clay in woodland track, Stoney Stoke: Park Wood, ST70463230, S.L. Pilkington; **29:** on soil at edge of flowerbed, Babraham Church, TL5050, M.O. Hill; **37:** on soil overlying limestone bank, Cother Wood, Mathon, SO758463, 6 February 2005, J.D. Sleath.
- 78.2.b. *Microbryum davallianum* var. *conicum*. 7:** chalk grassland, 255 m alt., Berwick Bassett Down, SU12147402, S.L. Pilkington; **11:** on soil at base of chalk in disused chalk-pit, Hursley, SU42782602, J.D. Sleath; **23:** in flowerbed of private garden, North Stoke, SU6127686247, S.V. O'Leary; **24:** field edge, The Springs, Ellesborough, SP8332506926, 21 December 2021, S.V. O'Leary; **36:** Stretton Sugwas Gravel Pit, SO45554205, C. Halpin & M. Lawley.
- 78.2.c. *Microbryum davallianum* var. *commutatum*. 25:** chalky clay on cliff face, Kessingland, TM515871, 10 January 2000, R.J. Fisk.
- 78.3. *Microbryum rectum*. 4:** in wheat stubble field, 50 m alt., Ashford, near West Ashford, SS52403522,

- 19 November 2005, N.F. Stewart, conf. M. Pool; 7: chalk grassland, 255 m alt., Berwick Bassett Down, SU12147402, S.L. Pilkington 22021.
- 79.1. *Hennediella stanfordensis*. 9:** under *Salix* by River Stour, 60 m alt., Fifehead Magdalen, near Gillingham, ST79192192, A.J.P. Branson; **61:** on soil in rabbit warren, 15 m alt., Newbegin Pits, Beverley Westwood, TA0239, W.R. Dolling, conf. T.L. Blockeel.
- 80.1. *Acaulon muticum*. 24:** disturbed sandy clay on grave, Hedgerley Church, SU97068734, 21 January 2021, T. Harrison, conf. S.V. O’Leary.
- 80.2. *Acaulon mediterraneum*. 3:** sandy, disturbed ground near rabbit burrows, Dawlish Warren, SX98057867, S.L. Pilkington 22011 (Fig. 8).
- 82.1.b. *Syntrichia ruralis* var. *epilosa*. 64:** small stones set in grassland, Winskill Stones, SD83636569, S.J. Heathcote.
- 82.2. *Syntrichia ruraliformis*. 63:** concrete surface of bridge used mainly as footpath, Oakhill Nature Reserve, Goole, SE7200322095, S.J. Heathcote.
- 83.1. *Cinclidotos fontinaloides*. 73:** on damp tarmac of lane, Wood of Cree, NX38477008, S.L. Pilkington & P.J. Thompson 22106.
- 86.2. *Blindiadelphus campylopodus*. 57 in brackets:** on blocks of stone, Whitwell Wood, SK5278, 16 April 1901, W.R. Linton, conf. T.L. Blockeel (LIV). Collected as *Seligeria recurvata* but redetermined from herbarium material. Habitat and locality as stated on the packet and grid reference assumed.
- 87.3. *Seligeria brevifolia*. 58:** with *Blindiadelphus recurvatus* on moist, weakly base-rich sandstone on crag in moorland valley, Crowden Castles, Crowden Great Brook, Longdendale, SE06210226, T.L. Blockeel 51/260.
- 87.4. *Seligeria calycina*. 62:** loose stone of calcareous Jurassic sandstone (Osgodby Formation) in dry gully, 270 m alt., Kewick: Dunsforth’s Hill, SE48709190, C.D. Preston.
- 91.1. *Coscinodon cribrus*. 69:** dry stone wall, 70 m alt., SD2194, 10 February 2020, J. Brockbank.
- 92.1.b. *Schistidium maritimum* subsp. *piliferum*. 71:** rock outcrop near sea on steep slope, Bradda Head, SC1857770301, D.A. Callaghan.
- 92.5. *Schistidium apocarpum*. 71:** rocks beside streamlet in woodland, Laxey, Mines Road, SC4324984868, D.A. Callaghan.
- 92.8. *Schistidium papillosum*. 98:** on rock in scree below crags, 700 m alt., south-facing crags, Coire Garbhalach, Beinn an Dothaidh, NN33284007, G.P. Rothero 2022081.
- 92.9. *Schistidium pruinosum*. 72:** in rock crevices in stream gully, Nether Torr Gill, Black Hope, Moffatdale, NT13841210, S.L. Pilkington 22104.
- 92.17. *Schistidium crassipilum*. 102:** on stones by front entrance, Jura Hotel, Craighouse, Jura, NR528670, S.V. O’Leary & C. Halpin; **102:** stonework of wall, 10 m alt., Jura Hotel, Craighouse, Jura, NR527670, N.G. Hodgetts.
- 92.18. *Schistidium elegantulum*. 36:** limestone, Doward, SO547152, M. Lawley; **62:** calcareous stones on woodland floor, near Sleightholme Dale Lodge, SE66678888, T.L. Blockeel 51/020; **102:** rock face by ravine, Allt Bun an Eas, Jura, NR4572976099, S.V. O’Leary.
- 93.10. *Grimmia elongata*. 45:** south-facing igneous boulder scree, Mynydd Preseli, SN14383245, M.D. Sutton; **72:** on very acidic rocks by burn below waterfall, 320 m alt., Dob’s Linn, Moffatdale, NT19621582, G.P. Rothero 2022090.
- 93.11. *Grimmia longirostris*. H39:** isolated dolerite rock outcrop in wet heath, 160 m alt., Fair Head & Murlough Bay ASSI, D18564302, N.G. Hodgetts 11483.
- 93.15. *Grimmia incurva*. 95:** in block scree, 450 m alt., Creag na h-ìolaire, NH8745512347, R.T. Whytock.
- 93.22. *Grimmia dissimulata*. 60:** on rock, Yealand Conyers, SD50217425, C. Halpin.
- 93.23. *Grimmia muehlenbeckii*. H39:** isolated dolerite rock outcrop in wet heath, 160 m alt., Fair Head & Murlough Bay ASSI, D18564302, N.G. Hodgetts 11482.
- 94.2. *Racomitrium aciculare*. 8:** north-facing tiled roof of old stable block with *R. fasciculare*, 188 m alt., Stourhead Estate, ST77843419, S.L. Pilkington 22121.
- 94.7. *Racomitrium affine*. 49:** on S.W.-facing rocks in sheep pasture, 150 m alt., south of Betws Garmon, SH535568, P.J. Thompson; **71:** rock outcrop in old mine, Glen Auldyn Mine, SC4191190888, D.A. Callaghan; **102:** growing on a rock at the northern end of the monad, 0 m alt., Jura, NR6588, C. Shaw.
- 94.8. *Racomitrium obtusum*. 1:** on granite quarry spoil, 160 m alt., Constantine, Carvedras, SW725318, M. Pool; **71:** rock outcrops in glade in conifer plantation, Ballure Glen, SC4541592352, D.A. Callaghan; **73:** on retaining wall, Bruntis

- Loch, Kirroughtree Forest, NX44776525, S.L. Pilkington & P.J. Thompson 22102; **102**: small cushion on a rock, 0 m alt., Tramiag Bay, Jura, NR6588, C. Shaw; **102**: boulder scree on north-facing slope, 350 m alt., Corra Bheinn, NR5276, N.G. Hodgetts.
- 94.8\***. *Racomitrium heterostichum sensu Hill et al.* (2008). Reinstate **2, 8, 20, 29, 44, 46, 49, 50, 59, 64, 68, 70, 71, 84, 87, 88, 93, 104, 112, H3, 13, 25, 38**. Aggregate records deleted in Pilkington (2022b) in error.
- 94.9**. *Racomitrium heterostichum s.str.* **3**: on granite drystone wall, 355 m alt., Bellever, SX65517772, S.L. Pilkington 22061; **5**: on scree slope, 310 m alt., above Badgeworthy Water, south of Oare Common, near Porlock, SS79584429, A.J.P. Branson; **102**: boulder in river above loch, Gleann Astaile, Jura, NR48317175, C. Halpin; **110**: boulder on moorland slope, 113 m alt., Griamacleit, Aline Forest, Lewis, NB20491446, 17 December 2021, T. Ap Rheinallt 110/21/37; **H31**: exposed igneous boulders, 190 m alt., Carlingford, SE of Windy Gap, J139126, M. Lyons & D. Doogue, conf. T.L. Blockeel.
- 94.11**. *Racomitrium lanuginosum*. **82**: disused quarry, on flat gravelly ground below crag, 155 m alt., Traprain Law Quarry, NT58347486, D.G. Long & D. Bell 47710 (E).
- 94.13**. *Racomitrium elongatum*. **71**: old cobbled floor of mine, Laxey, Mines Road, SC4323084939, D.A. Callaghan.
- 95.1.a**. *Hedwigia ciliata var. ciliata*. **88**: on large boulder on steep slope, 590 m alt., Sron Dha Mhurchaidh, Ben Lawers NNR, NN606388, G.P. Rothero & P.J. Thompson 2022127. Was deleted after examination of sterile material from same area. Reinstatement based on a new collection of fertile shoots.
- 100.3**. *Splachnum vasculosum*. **95**: in large flush covering 2-3 m<sup>2</sup>, 423 m alt., east of Dirdhu Farm, NJ0861220718, R.T. Whytock.
- 104.1**. *Leptobryum pyriforme*. **36**: on soil, Stretton Sugwas Gravel Pit, SO4542, M. Lawley.
- 106.1**. *Bartramia halleriana*. **72**: south bank of Linn, above stream, near base of 3rd waterfall, Dob's Linn, Moffatdale, NT19531583, C. Miles with D. & G. recording group (E); **95**: base of crag, 365 m alt., Craigellachie NNR, NH8851112311, R.T. Whytock.
- 108.1**. *Philonotis rigida*. **98**: large cushions on wet rock face, 65 m alt., Torr Buidhe area by Loch Ruel, Cowal, NS005802, G.P. Rothero 2022041.
- 110.1**. *Bryum julaceum*. **71**: broken turf on coastal headland, Bradda Head, SC1850569801, D.A. Callaghan.
- 110.2**. *Bryum concinnatum*. **70**: on stone in grass, SD2095, 30 November 2021, J. Brockbank, conf. J. O'Reilly.
- 110.11**. *Bryum dyffrynense*. **44**: disturbed damp sand on yard at edge of firing range, Langharne & Pendine Burrows SSSI, SN2849707191, M.D. Sutton.
- 110.20**. *Bryum tenuisetum*. **58**: on sandy-peaty soil in drawdown zone of reservoir, 210 m alt., Cheshire side of Torside Reservoir, Longdendale, SK071988, T.L. Blockeel 51/294; **102**: 55 m alt., Ardfernal, Isle of Jura, NR561716, R.T. Whytock.
- 110.21**. *Bryum subapiculatum*. **70**: thin south facing and exposed turf, SD2094, 8 January 2021, J. Brockbank, conf. J. O'Reilly; **71**: broken turf on heathland slope, Bradda Head, SC1850269791, D.A. Callaghan.
- 110.22**. *Bryum mildeanum*. **96**: gravel-filled cushions on rock in burn, 665 m alt., Uisg a'Chaime, south of Tarff dam, NH451018, G.P. Rothero 2011152.
- 110.27**. *Bryum warneum*. **62**: in a damp depression on sandy/blast furnace waste soil, South Gare, Tees Mouth, NZ56282675, J.D. Sleath.
- 110.34**. *Bryum weigelii*. **95**: in large flush, population covering a large area, 423 m alt., east of Dirdhu Farm, NJ0861220718, R.T. Whytock.
- 110.36.a**. *Bryum algovicum var. rutheanum*. **71**: sandy ground in disused sand pit, Point Ayre Nature Reserve, NX4602404410, D.A. Callaghan. Sporophytes matured in a greenhouse and harvested 2 June 2022.
- 110.43**. *Bryum elegans*. **62**: rock ledge in quarry, Kepwick Quarry, SE4869191871, P. Martin.
- 110.46**. *Bryum creberrimum*. **12**: on disturbed sandy/peaty soil on cattle-grazed wet heath, west edge of Woolmer Forest, Blackmoor, SU788331, J.D. Sleath; **18**: on ground in beech woodland, Hill Wood, Epping Forest, TQ4068297509, D.A. Callaghan.
- 110.47**. *Bryum pallescens*. **4**: on ground overhung by galvanised iron roof, Sampford Courtenay, Solland Farm, SS612018, M. Pool; **62**: drip zone of galvanised metal fence below dam, 190 m alt.,

- Cod Beck Reservoir, SE46209846, S.L. Pilkington 22093.
- 110.48.b. *Bryum pseudotriquetrum* var. *bimum*.** **72:** on rock outcrop below waterfall, 360 m alt., Dob's Linn, Moffatdale, NT19531583, E.M. Kungu with Lothians Recording Group (E).
- 110.50. *Bryum kunzei*.** **57:** on thin soil over limestone rock on south-facing hillside, 235 m alt., southern end of Dovedale, SK14875169, 29 March 2021, T.L. Blockeel 50/038. Duplicate of material confirmed by molecular sequencing at RGBE.
- 110.52. *Bryum rubens*.** **71:** open turf along path through dune heath, The Ayres NNR, NX4296103256, D.A. Callaghan.
- 113.3. *Poblia cruda*.** **62:** north-facing slope, 315 m alt., Kepwick: Dunsforth's Hill, SE48789164, S.L. Pilkington 22092.
- 118.2. *Plagiomnium affine*.** **71:** base of wall of old mine building enriched by mortar, Cornelly Mine, SC2986379531, D.A. Callaghan.
- 118.5. *Plagiomnium ellipticum*.** **71:** flush in woodland beside stream, Glen Roy Mine, SC4100883628, D.A. Callaghan.
- 118.7. *Plagiomnium rostratum*.** **2:** in lime-rich track, Boconnoc Estate, SX14616103, S.L. Pilkington; **7:** stony/muddy path, 195 m alt., Basset Down Wood, SU11427983, S.L. Pilkington 22022.
- 122.10. *Orthotrichum pallens*.** **8:** On branch of a large *Salix caprea* in open grassland, 130 m alt., Tidworth: Old Fowler Barracks, SU25524997, S.L. Pilkington & J. Bennett.
- 126.5. *Ulotia crispula*.** **5:** on plantation sycamore, 115 m alt., Greenaleigh Plantation, nr Minehead, SS95564787, S.L. Pilkington; **6:** on hazel branch, 95 m alt., Stoney Stoke: Park Wood, ST70213241, S.L. Pilkington 22081; **9:** on *Salix cinerea* in stream woodland, 50 m alt., Bournemouth: Bourne Valley Nature Reserve, SZ05119439, S.L. Pilkington; **29:** on Norway maple, Trumpington, near M11, TL43475373, S. Yardy; **42:** tree overhanging the reservoir shore, Usk Reservoir, Llandoverly, SN83182859, C. Halpin.
- 126.6. *Ulotia intermedia*.** **3:** on hazel in open woodland, 210 m alt., Water: Woodash, SX76728078, S.L. Pilkington 22082; **9:** on hazel branch, 50 m alt., Oakers Wood, Affpuddle, SY80749157, S.L. Pilkington 22071; **12:** on a willow beside the River Itchen, Itchen Stoke, SU55973211, J.D. Sleath; **40:** trunk of *Corylus avellana*, tributary of Borle Brook, north of Glazeley, SO702884, 15 July 2022, P. Thompson, conf. T.L. Blockeel; **62:** on *Acer pseudoplatanus* trunk, 200 m alt., Cod Beck Reservoir, SE46359844, S.L. Pilkington; **84:** on *Salix* at edge of conifer plantation, east end of bog, 185 m alt., Black Moss Reserve, Armadale, NS93546792, E.M. Kungu with Lothians Recording Group (E); **92:** on bark of apple tree in front garden, The Orchard, Aberdeen, NJ94010790, J.D. Sleath; **96:** epiphytic on old hazel in woodland, 50 m alt., Ness Woods, near Allt a' Chinn Mhonaich, NH453163, N.G. Hodgetts.
- 128.1. *Orthodontium lineare*.** **71:** rotten conifer stump, Glen Roy Mine, SC4102383613, D.A. Callaghan.
- 137.1.b. *Fontinalis antipyretica* subsp. *gracilis*.** **57:** aquatic on rocks in moorland stream, 250 m alt., lower part of Hollingworth Clough, near Carr Meadow, Little Hayfield, SK03528945, T.L. Blockeel 51/265; **H25:** River Suck, Cloodacarra Bridge, M671780, 31 August 2021, N.F. Stewart 26S70300; **H34:** Elatagh River, Elatagh Bridge, C020012, 1 September 2021, R.V. Lansdown 01E020300; **H35:** River Stranagoppoge, upstream of Finn River confluence, B959020, 1 September 2021, R.V. Lansdown 01S020200.
- 139.1. *Platydictya jungermannioides*.** **41:** amongst *Gymnostomum aeruginosum* on limestone crag in woodland, 220 m alt., Cwm Taf Fechan, SO0394208719, D.A. Callaghan.
- 141.1. *Plagiothecium latebricola*.** **73:** edge of small pool to N.W. of walkway, growing among leaf litter of *Molinia* etc., 155 m alt., Knowetop Lochs Nature Reserve, NX70827853, E.M. Kungu (E).
- 141.3.b. *Plagiothecium denticulatum* var. *obtusifolium*.** **102:** rocks by lake, Fudarlaich, Jura, NR5340076184, P. Martin.
- 142.2. *Isopterygiopsis pulchella*.** **45:** base of shaded millstone grit crag, Gorness Rocks, Llanteg, SN1872309053, M.D. Sutton; **58:** recess in bed of weakly base-rich sandstone on crag in moorland valley, Crowden Castles, Crowden Great Brook, Longendale, SE06210226, T.L. Blockeel 51/261.
- 151.2. *Palustriella falcata*.** **H10:** in lakeshore fen, Lough Nahinch, R9993, 23 November 2021, G.F. Smith & W. Crowley 2127035 (DBN).
- 154.1. *Hygroamblystegium fluviatile*.** **21:** on intermittently inundated brickwork, bank of River Thames, S.E. side of Richmond Bridge,

TQ17697446, J.D. Sleath; **56**: white water canoe slalom course, concrete continually inundated, Holme Pierpoint Water Sports Centre, Holme Cut, SK61363917, M. Crittenden & D. Wood.

**154.2. *Hygroamblystegium tenax*. Bracket 18.**

The specimen collected by Tim Pyner from Walthamstow Reservoirs TQ349871 in 2008 is *H. fluviatile*, re-examined by Ken Adams and confirmed by T.L. Blockeel in 2013.

**154.4. *Hygroamblystegium humile*. 42:** on sediment in upper draw-down zone of reservoir, 330 m alt., Cantref Reservoir, SN99241634, S.L. Pilkington.

**157.1. *Drepanocladus polygamus*. 42:** centre of slightly uphill track with tarmac chippings/gravel, Coed Dyrysiog, Brecon, SN98263100, C. Halpin, conf. T.W. Ottley; **74:** fen vegetation at margin of small stream near outfall, locally extensive, Portavaddie, near Portpatrick, NW98385593, S.J. Heathcote.

**158.1. *Tomentypnum nitens*. 5:** in base-rich mire beside headwater of Chalk Water, Madacombe, W. of Exford, SS8303742901, A.J.P. Branson.

**160.3. *Platyhypnum duriusculum*. 72:** steep-sided valley, on boulder in stream, 270 m alt., foot of Dob's Linn Valley, Moffatdale, NT19631550, D.G. Long 47490 (E).

**162.1. *Campylophyllopsis calcarea*. 7:** oolitic stone on woodland floor, 130 m alt., Conkwell: Conkwell Wood, ST79056240, S.L. Pilkington 22043; **8:** hard chalk on shaded, north-facing bank under beech trees, 190 m alt., Salisbury Plain SSSI: Sidbury Hill, SU2189450251, S.L. Pilkington.

**172.1. *Hamatocaulis vernicosus*. 65:** with *Calliergonella cuspidata* and *Sarmentypnum exannulatum* in flush along path, bank above R. Rawthey opposite Uldale House, 310 m alt., Uldale near Sedburgh, SD72869664, C.A. Kelly, conf. T.L. Blockeel; **73:** seasonally inundated fen/meadow, 40 m alt., Threave Estate, E. of Meikle Wood Hide, Castle Douglas, NX74816206, R. Merritt, conf. E.M. Kungu (E).

**178.2. *Thuidium delicatulum*. 1:** in tuft on calcareous sand, Sand Quarry, Phillack Towans, SW56913922, J.D. Sleath.

**184.5. *Rhynchostegium megapolitanum*. 62:** on side of grey dune, 5 m alt., Redcar: South Gare, NZ57742581, S.L. Pilkington 22091.

**188.2. *Oxyrrhynchium schleicheri*. 62:** soil over calcareous stones on wooded roadside bank, near



△ Figure 9. *Pylaisia polyantha*, Mauldsheugh Wood, Selkirkshire. David Long

Sleightholme Dale Lodge, SE66628891, T.L. Blockeel 51/018.

**188.3. *Oxyrrhynchium speciosum*. 63:** grassland on floodplain of R. Went – locally frequent on soil, Brockadale Nature Reserve, SE50611713, S.J. Heathcote; **H14:** in *Carex paniculata* swamp woodland, Abbeyleix Bog, S43788374, 9 July 2021, G.F. Smith & W. Crowley 2199024 (DBN).

**191.5. *Brachythecium mildeanum*. 86:** parking area in front of derelict cottages, 80 m alt., Howietown Fishery Heritage Site, Old Sauchiemill, NS78658832, E.M. Kungu & D. Chamberlain with H. Udall and D. Adamson on a TWIC recording meeting (E).

**200.2. *Pseudohygrohypnum subeugyrium*. 48:** boulder in river in woodland, Afon Gwynant, SH6808516794, D.A. Callaghan; **107:** on rocks in river, 45 m alt., River Cassley, Glenrossal, NC4583804672, 20 July 2021, M. Nicolson, conf. E.M. Kungu (E).

**202.1. *Pylaisia polyantha*. 79:** damp woodland by river, on *Salix* trunk, 115 m alt., Mauldsheugh Wood, Ettrick Water, Selkirk, NT46062829, D.G. Long 47702 (E) (Fig. 9).

- 207.1. *Ptilium crista-castrensis*. 85:** floor of pinewood, 8 m alt., Tentsmuir Forest, NO47812756, 31 August 2021, L. Jones. May have been introduced with *Linnaea borealis* 20 years ago. Is sub-dominant over 4 m x 4 m with subsidiary patches.
- 210.3. *Rhytidiadelphus loreus*. 56:** birch/willow woodland on disused pit, Holme Pierrepont Country Park, SK61843880, M. Crittenden & D. Wood.
- 213.1. *Hylocomiastrum pyrenaicum*. 96:** in large boulder scree by loch, 927 m alt., Coire an r-Sneachda, NH9926003245, R.T. Whytock.
- 223.2. *Neckera pumila*. 18:** trunk of sycamore in deciduous woodland, High Beach, Epping Forest, TQ4080598272, D.A. Callaghan.
- 224.1. *Homalia trichomanoides*. Delete 95:** 2021 record from Urlarmore was in vc 94, not 95; **96:** on bank above fen, 215 m alt., Bogach fen by Alvie, NH87880930, G.P. Rothero & P.J. Thompson 2022133.
- 228.2. *Heterocladium flaccidum*. 73:** deeply shaded stones on bank of woodland stream, 44 m alt., Wood of Cree, NX38766976, S.L. Pilkington & P.J. Thompson 22105.
- 228.3. *Heterocladium wulfsbergii*. 5:** on riverbank rocks, 314 m alt., Badgeworthy Water (Somerset bank), SS79484363, A.J.P. Branson.
- 229.2. *Isoetecium interludens*. 42:** north-facing crags, 560 m alt., Cwm Llwh, SO00102244, S.L. Pilkington, P. Martin & C. Halpin 22013.
- 229.4. *Isoetecium boltii*. 108:** on rocks in inundation zone of burn, 75 m alt., Lower Allt Odhrsgaraidh, Strabeg, NC39635146, G.P. Rothero 2022067.

### Collectors/contributors of records

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### Erratum

*Ulota crispula* vc 64. Grid reference should be SE56864788 not SK56864788 as stated in the Moss Year – 2021 (Pilkington, 2022b).

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