

haystack in the sitting room, 'causing a frightful mess'.

But the early years of the 20th century were unkind to the Jamesons, as four of their children died. One of them, Maurice Gurney (ca 1887-1915), became a private in the Honourable

Artillery Company and died in Belgium. However, the second child and eldest son, Hugh Phillip (ca 1881-1956) taught at Eastbourne College until 1915, moving to Charterhouse from 1919. He inherited his father's artistic ability, and was renowned as a gifted artist and craftsman.

Reports of BBS meetings

Throughout the following accounts of BBS meetings, nomenclature follows Paton (1999), *The liverwort flora of the British Isles*, and Smith

(2004), *The moss flora of Britain and Ireland*, 2nd edition.

Extreme arable bryology: a brief visit to the cereal fields of Caithness

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A tantalising glimpse of the arable bryophytes of Caithness is provided by David Long's (1975) report of the BBS meeting there in August 1974. On this meeting, 'one member concentrated on the ubiquitous oatfields of the county', continuing even on one day when the fieldwork of the rest of the party was curtailed by heavy rain. Students of the history of arable bryology will recognise this dedicated member as Dr H.L.K. Whitehouse. His discoveries included *Bryum riparium*, *B. sauteri*, *Ditrichum pusillum* and *Poblia lescuriana* new to Caithness (v.-c. 109) and *B. tenuisetum*, *D. pusillum* and *P. lescuriana* new to the adjacent vice-county of West Sutherland (v.-c. 108). These records suggested that Caithness arable fields might support a suite of unusual species, and should therefore be surveyed for

the current Survey of the Bryophytes of Arable Land (SBAL). With this in mind we contacted Ken Butler, the Botanical Society of the British Isles vice-county recorder for Caithness, who confirmed that oats are still grown in the county and that a visit in January might be feasible. Setting aside reservations about the wisdom of visiting NE Scotland at this time of year, we booked a small cottage near Wick for 28-31 January 2005 with a view to exploring the arable fields of the region. Fortunately, this period proved to be mild, and we were able to spend three days bryologising in almost ideal conditions in Caithness and West Sutherland.

The geology of Caithness is dominated by the relatively soft and fertile Old Red Sandstone.

Arable land is most frequent around Wick, extending from here north and west to Thurso both along the coast and in the valley of the Wick River. This is now a fairly isolated pocket of arable land in the north-east corner of Scotland. Even along the east coast there is little arable land to the immediate south: along over 40 km of coast from Dunbeath in Caithness south to Dunrobin Castle in East Sutherland we spotted only one or two stubble fields at Brora, and a couple of root fields elsewhere which were trampled into mud by grazing sheep. Along the north coast there are scattered fields from Thurso westwards to the county boundary. There, a marked change in landscape indicates the transition to the harder and less fertile igneous and metamorphic rocks of West Sutherland. Harold Whitehouse recorded bryophytes in five arable fields in two days in eastern West Sutherland, suggesting that even then arable fields were rather few and far between; we found only two oat fields along the stretch of north coast between the Caithness boundary and Bettyhill. We saw no arable at Bettyhill itself, where Harold had found at least two oat fields. There has clearly been a decline in arable cultivation in West Sutherland since 1974, and we had the impression (doubtless wrong but perhaps not very far from the truth) that we were visiting the last arable fields in this part of the county.

We recorded bryophytes in 19 fields in Caithness (v.-c. 109) and in the only two fields we could find in West Sutherland (v.-c. 108). Barley appeared to be grown at least as frequently as oats, and we even found one wheat field. There were some root crops (grazed by sheep) and one or two *Brassica* fields that had not been harvested because of the wet winter weather or perhaps, in one case, had been left as game cover. Undersown crops were rare. The arable agriculture of the county is not intensive: one farmer told us that the practice is to sow the crops and then leave them unsprayed until harvest. It was strange to look for tramlines in the fields, only to find that there were none

there. By late January there was a vigorous growth of grass weeds in the stubble but few specialist broad-leaved arable weeds. It was a surprise to find that *Bellis perennis* was one of the most frequent stubble-field weeds.

Our records will be analysed with the rest of the SBAL results, but we describe them here in general terms. Most of the fields we visited (16 out of 21) had moderately but not exceptionally rich floras, with 8-19 species per field (mean 14), and acidic soils with pHs between 4.7 and 6.2 or exceptionally as high as 6.9 (mean pH 5.7). *Bryum rubens*, *Kindbergia praelonga* (*Eurhynchium praelongum*) and *Trichodon cylindricus* (*Ditricum cylindricum*) grew in all or all but one of the fields; other species occurring in at least half were *Atrichum undulatum* (present in eight fields, rather remarkably), *Brachythecium rutabulum* (13), *Dicranella schreberiana* (11), *Dicranella staphylina* (13), *Ephemerum serratum* s.l. (nine, one with *E. serratum* and the rest with *E. minutissimum*), *Oxyrrhynchium* (*Eurhynchium*) *hians* (11) and *Tortula truncata* (14). Included in these figures are the two oat fields in West Sutherland, at Baligill and Melvich (see Figure 1), which were ill-drained (*Montia fontana* was frequent in both) and at the acidic end of the pH range (4.7 and 5.0); both had *Lophocolea bidentata*, *Ceratodon purpureus* and *Pohlia lescuriana*, and some more remarkable 'write-ins', including *Plagiomnium rostratum* in both and *Campylopus pyriformis*, *Dicranum scoparium* and *Sphagnum denticulatum* (one stem) in one. Another damp oat field at Tannach in Caithness had only a few sparse acrocarpous mosses but we recorded *Philonotis fontana* and some surprising pleurocarps, including *Amblystegium radicale*, *Brachythecium mildeanum*, *B. rivulare*, *Calliergonella cuspidata*, *Cratoneuron filicinum* and *Warnstorfia fluitans*.

The remaining five fields were species-poor, with between three and six of the commoner species (mean four). The pH of these fields, 5.4-5.8, was not markedly different from those of the first group, and it was not immediately obvious why their floras were so poor. Three

were close to the coast, including one by the post office at John o’Groats with just three species and one recently ploughed coastal heathland – perhaps some species are intolerant of salt-spray? A fourth field, also with three species, had clearly been subject to prolonged flooding earlier in the winter. The winter rainfall in NE Scotland had been well above average – one farmer told us that the winter had been ‘too fluid’ – and even in the more species-rich fields the effects of this were apparent, with some slopes washed clear of bryophyte cover or with only small, raised tufts of bryophyte remaining.

It is interesting to note that in 1974 the BBS party went on to Orkney immediately after visiting Caithness. Here, ‘although several crop fields were searched during the meeting they were found to be virtually devoid of bryophytes’ (Appleyard, 1975). Before we visited Caithness we found this difference scarcely believable, but could the Orkney fields have the species-poor flora found just across the sea at John o’Groats?

The arable fields of Caithness did not provide many new vice-county records; the area had been too well-worked beforehand and was not rich in arable specialists. However, the discovery of *Amblystegium radicale* in Caithness was a great surprise and we also found this species (with young setae) on our return journey, growing in the damp corner of a barley field south of Skelbo Wood in East Sutherland (v.-c. 107). A further specimen, collected in an SBAL field in Carmarthenshire by SDSB, was identified by Lars Hedenäs at the same time as the Caithness material. Until these finds, this species was known from only two localities, in Cornwall and north Wales. Do these arable populations represent strays from larger but undetected populations nearby? *Blasia pusilla*, *Brachythecium rivulare*, *Calliargonella cuspidata*, *Cratoneuron filicinum* and *Drepanocladus polygamus* also grew in the damp corner of the Skelbo field, and this single field in a much less well-worked

vice-county provided eight new vice-county records.

Several species that are familiar further south were very rare or even absent in the stubble fields of Caithness and West Sutherland. We saw no *Riccia* species (though *R. glauca* grew in three and *R. sorocarpa* in all six of the fields we visited in v.-c. 96, 106 and 107 en route to Caithness). Both *Fossombronias* and hornworts were rare – we found *Fossombronias* in five fields, including both the West Sutherland fields, and *Anthoceros punctatus* in just three fields. Other species that were rarer than in fields recorded on the SBAL meeting in Turriff (Preston, 2005) were *Barbula convoluta*, *Bryum subapiculatum*, *B. violaceum*, *Pohlia camptotrachela*, *P. wahlenbergii* and *Tortula acaulon*. The diversity of *Bryum* species was notably low: apart from ubiquitous *B. rubens* the most frequent species we recorded were *B. sauteri* (in three fields) and *B. subapiculatum* (in four).

Harold Whitehouse’s lists are in the Biological Records Centre database, and so his records can be compared with ours. He recorded bryophytes in August 1969 as well as August 1974 in Caithness and eastern West Sutherland, altogether listing species in 23 fields: 19 oat fields, three barley fields and one wheat field. He was, of course, recording in summer and must therefore have been restricted to the edges of fields; presumably these are the reasons why he recorded only 2-12 species in his fields. The commonest species in his fields were all common in ours: *Bryum rubens*, *Dicranella staphylina*, *Kindbergia praelonga*, *Tortula truncata* and *Trichodon cylindricus*. However, he recorded *Brachythecium rutabulum* in only one field and did not list *Oxyrrhynchium hians* at all. He recorded a more diverse *Bryum* flora than we did, finding *B. argenteum* in four fields (we found none), *B. klinggraeffii* in seven (two in 2005) and *B. violaceum* in 11 (compared with our two). It is difficult to account for these differences, unless the apparent increase in *B. rutabulum* and *E. hians* indicates less acidic and more nutrient-rich conditions. We recorded more *Anthoceros punctatus* (three fields in

2005, none in 1969/74), *Fossombronia* species (five fields in 2005, none in 1969/74), *Dicranella schreberiana* (11 fields in 2005, three in 1969/74), *Ephemerum* species (nine fields in 2005, one in 1969/74) and *Pleuroidium subulatum* (seven fields in 2005, none in 1969/74). Some of these species are perhaps more likely to be found in the winter. We failed to find two of his species that we had been especially keen to see: *Bryum riparium* and *Ditrichum pusillum*. He got *B. riparium* in one field, at Smerlie (v.-c. 109) – we visited the site but there is apparently no arable in the vicinity now. He found *D. pusillum* in one field in v.-c. 108 and one in v.-c. 109. The associates at Calgarry (v.-c. 108) included *Atrichum undulatum*, *Ceratodon purpureus* and *Poblia lescuriana*; those at Buoltach (v.-c. 109) included *Lophocolea bidentata*, *A. undulatum* and *P. lescuriana*. These suggest a community similar to that in our two acidic fields in West Sutherland. *Bryum tenuisetum*, another species we failed to find, was also present in the field at Calgarry.

We left Caithness with a strong desire to return to the county – perhaps in summer – and see more of its natural history. We are very grateful to Ken Butler for his help in planning our trip. The farmers of Caithness were unfailingly helpful, whether we were able to ask their permission in advance or whether they encountered us in their fields as uninvited guests. Even the gentleman who we roused out of bed at 10 a.m. on Sunday morning, and who we spotted frantically searching for some clothes when we incautiously looked through the farmhouse window, was most helpful when he eventually appeared at the door.

References

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Figure 1. Arable field at Allt Mhallaig, Melvich, West Sutherland (v.-c. 108), 29 January 2005. The soil in this field was acidic (pH 5.0) and bryophytes in the extremely wet oat stubble included locally frequent *Atrichum undulatum* and one stem of *Sphagnum denticulatum* in addition to more usual arable species. Photo: S.D.S. Bosanquet.