

Worcestershire locations with interesting mosses and liverworts

In the second of her two articles about bryophytes in Worcestershire, **Tessa Carrick** explores many of the interesting (and occasionally not so interesting) sites in the county.

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Bryophytes have been unevenly recorded across the county. In particular, the northern and north-east tip extending into Birmingham, the eastern fringe, especially around Redditch and Evesham, the Tenbury and Kyre region and the very southernmost tip around Longdon, stretching towards Tewkesbury, have been neglected. Most tetrads have fewer than 19 records, although a few places have been more intensively studied. In addition, the major towns of Kidderminster, Stourport, Bromsgrove, Redditch and Worcester are areas where little has been recorded. Richard Fisk recorded the area around Droitwich well while he lived there for over a decade.

Records in the county Biological Record Centre indicate that several localities are known to be bryodiverse – the Wissetts Wood area (SO6772) has over 126 species, the Highwood and Death's Dingle region (SO6667) has more than 108 species, Hunthouse Wood (SO7070) has over 126 species, and the Wyre Forest region tetrads contain over 144 species. In addition, Sapey Brook and Rock Coppice, Ravenshill Wood, the Knapp and Papermill Reserve, the Malverns, Larford and Shrawley Wood, around Holt Fleet, Potters Park at Chaddesley Corbett, Chaddesley Wood, the Clent Hills, Bredon Hill, Tunnel Hill and Cleeve Prior are all relatively rich areas. However, there are other interesting sites which are distinctive but which do not have such a range of species. The sites described below have all been visited and have proved to be of interest.

Wyre Forest

Within the Worcestershire section of the Wyre Forest (SO77), many of the wooded areas are not exciting with regard to bryophytes, but there are some regions which are particularly rich. These

include the stream valleys, such as Gladder Brook as it runs through Ribbesford and Areley Woods where the 2004 BBS meeting recorded 23 species of liverwort, including the first county record for *Porella cordaeana*, and more than 60 species of moss, Park Brook (SO7576) with 30 species of liverwort and 60 species of moss, Hitterhill Valley (SO7675) where 25 liverworts were recorded, and where *Fissidens osmundoides* was recorded by Mark Lawley in 2004, *Bryum bornholmense* was first noted in 2004 and *Didymodon spadiceus* was found again by Mark Lawley in 2005, parts of Dowles Brook (SO7476), including the steep banks in Knowles Coppice (SO7676), and to a lesser extent Baveney Brook (SO7176, outside v.-c. 37 but part of the Wyre Forest). Often the valley sides are steeply sloping and the small streams and their tributaries, with their varied geology, provide a great variety of microhabitats. The Great Bog (SO746762) does not hold large numbers of species, but there are four recorded species of *Sphagnum*, a genus which is rather sparsely represented in Worcestershire. It is also the site of the first records of *Leucobryum juniperoideum* and *Entosthodon obtusus*, found by Richard Fisk in 2004, and the liverworts *Riccardia palmata* and *Trichocolea tomentella*. *L. juniperoideum* also occurs alongside *L. glaucum* on the steep slopes of the Hitterhill valley. The banks of the old railway line (SO7576) have a good bryoflora with several species of *Sphagnum* as well as unvouched *Thuidium recognitum*, and *Sphagnum* species also grow in Park Brook and Hitterhill valleys. *Sphagnum denticulatum* and *Tortella bambergi* have both been found beside Dowles Brook and at Lodge Hill Farm. Also in the Wyre Forest, but outside v.-c. 37, Hawkbatch (SO763777) and particularly Seckley Wood have a good range of bryophytes.

◀ View from the Malverns, Worcestershire. Ian Atherton



▲ *Entosthodon obtusus* (top; Des Callaghan), *Sphagnum denticulatum* (middle; Des Callaghan) and *Trichocolea tomentella* (bottom; Ian Atherton).

The Malvern Hills

The Malvern Hills do not have such great species richness as parts of the Wyre Forest, and lack the numerous liverworts, but there are some specialities. The area includes acidic grassland and scrub, base-rich flushes, igneous rocky outcrops as well as the adjacent commons and some woodland. *Schistostega pennata* is visible in some rabbit holes, and *Buxbaumia aphylla* was first recorded by Joy Ricketts in 2003 beside a path on the Worcestershire side of the Herefordshire Beacon (SO7639). *Grimmia trichophylla* grows on some rocks and *G. laevigata* occurs with *Pterogonium gracile* on one east-facing rock on Hangman's Hill (SO7639). Although with restricted access, the area around the reservoir on the eastern slope of Herefordshire Beacon is of interest, both for ephemeral bryophytes around the concreted area and for species of damper places on the banks beside the reservoir itself. The shrubby area above the reservoir is also worth examining.

Hedwigia ciliata var. *ciliata* occurs on a large rock on the east side of the Worcestershire Beacon (SO7744) and has also been found in the middle region of the hills at SO7642. The first vouched record for *Racomitrium heterostichum* since 1950 was that by Ann Hill on Perseverance Hill (SO770426) in 2002, although several unverified records exist – SO77 tetrad T (Arley or Ribbesford Wood) and SO767466 (North Hill) – but *R. heterostichum* is also present on Worcestershire Beacon, alongside *H. ciliata* var. *ciliata*, while *R. aciculare* occurs in a small spring nearby. *R. fasciculare* was noted near North Quarry during the BBS meeting in 2004 (and also at Frankley in 1979). *Fossombronina incurva* was found on the Black Hill quarry floor on Worcestershire Beacon (SO769412) by David Long during the same BBS meeting, and all the quarries are worth exploring for interesting

bryophytes, for example *Encalypta streptocarpa* in Earnslaw Quarry (SO771445).

There is much to be done exploring the vast areas of the Malvern Hills and adjacent land. The damp north-east corner of Castlemorton Common (SO7939) has yielded an interesting range of species, including *Syntrichia laevipila* (Richard Lansdowne and Mark Pool, 2004). *Climacium dendroides* was recorded by Ann Hill from the Common (SO7638) in 2002. The accessible parts of The Gullet (SO7638) are just in v.-c. 37 and are worth examining, although obviously much depleted since Thompson's time. *Microlejeunea ulicina* was discovered by Rita Holmes on nearby Swinyard Hill (SO763387). On the west side of Worcestershire Beacon, Park Wood (SO762442) is of interest since it includes limestone outcrops.

Bredon Hill and the Cotswold fringe

The calcareous, rocky grassland and slumps of the north slopes of Bredon Hill provide suitable habitats for a wide variety of species. Nearly every rock supports a different combination of species and almost certainly there are more species to be identified. In the damp woodland and on the grassy areas at the base of the hill about 100 species have been recorded, including the liverworts *Lophozia excisa*, *Porella platyphylla* and *Scapania aspera*, and mosses *Bryum donianum*, *Encalypta vulgaris*, *Rhodobryum roseum*, *Seligeria calcarea* and *Weissia controversa* var. *crispata*. Higher up the hill there are extensive growths of *Rhytidiadelphus triquetrus*, together with a rich bryoflora that includes *Entodon concinnus*, *Fissidens gracilifolius*, *Seligeria pusilla*, *S. recurvata* (unconfirmed), *S. calcarea*, *S. donniana*, *Taxiphyllum wissgrillii*, *Campyliadelphus chrysophyllus*, *Neckera crispa* and *N. pumila* (so far not recorded from elsewhere in v.-c. 37).

The Cotswold fringe which lies within v.-c. 37 (SP120369) includes some wooded ground

and small, rocky excavations beside the road up Broadway Hill, the car park at the top of the hill with rocks and scrubby hawthorns and the calcareous grassland around Broadway Tower. The flora here is characteristic of calcareous areas but is not particularly rich in species. However, it is worth further exploration.

River valleys

Along the banks of the Rivers Severn, Teme and Avon, such riverine species as *Hennediella stanfordensis*, *Leskea polycarpa*, *Platyhypnidium riparioides* and *Syntrichia latifolia* are frequently present, as well as *Fontinalis antipyretica* and *Dialytrichia mucronata*. As already mentioned, there are also some specialities to the area. J.B. Duncan found *Fissidens fontanus*, first at Bewdley and later at Stourport, and recently it has been found at Marlcliffe (SP092504) on the Avon. Besides *Cinclidotus fontinaloides*, *C. riparius* occurs along the River Teme, for instance on the concrete at Stanford Bridge, lower down the bank than *C. fontinaloides*. *Epipterygium tozeri* occurs at its only known site in Worcestershire on the bank of the River Severn upstream from Bewdley, and *Fissidens rivularis* at its only known site just downstream of the town, while the sandstone retaining walls by the river in the town itself are home to the tiny *F. exiguus*.

Other wet sites

There are a number of canals running through Worcestershire. Most have not been explored for bryophytes, but the Birmingham–Worcester canal near Tardebigge (SO9868) has proved interesting, since it contains two forms of *Fontinalis antipyretica* close together. The more typical plants are in the lock areas, but a different form without a keel occurs in the overflow areas.

Several wetland areas exist, and efforts to restore wetland at the Gwen Finch Reserve and



Longdon Marsh may make more such sites available. Both the wet fen areas of Feckenham Wylde Moor (SP0160) and Ipsley Alders (SP0767) Nature Reserves have *Drepanocladus aduncus*, a species which is relatively rare in the county. The bryophytes of the two sites are little known and deserve further investigation. Wilden Marsh Reserve (SO8273) is another site which may merit exploration, and has the rare *Tortula amplexa* on the riverbank as well as *Aphanorhagma patens*.

The draw-down of Upper Bittell Reservoir (SP0275), a lake privately owned by Barnt Green Sailing Club, has proved interesting. In particular the nationally rare *Ephemerum cohaerens* was found in 2004 in several places as well as *Weissia rostellata*. Additionally, there was a good range of ephemeral species on the exposed substratum.

Dingle woodland valleys to the west of the county

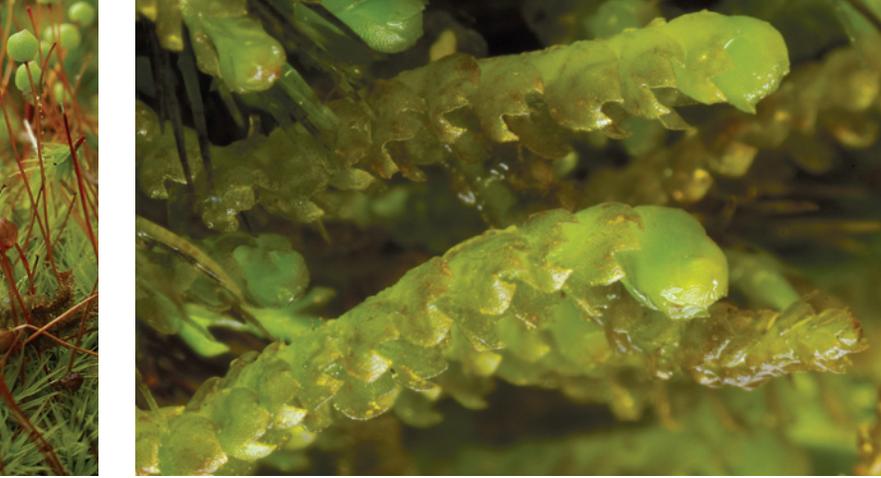
Many small streams feed into the River Teme. These tend to be calcareous, with tufa formations, and with stony or rocky substrata. They frequently run through steeply sloping, wooded valleys, creating a shaded, humid habitat, ideal for bryophytes. Often the trees in the valleys support a good range of epiphytes, including *Metzgeria violacea* and *M. consanguinea* as well as the more common *M. furcata*. All of the valleys which have been visited have proved to have a rich bryophyte flora, often with more than 20 species of liverworts and lush expanses of such mosses as *Palustriella commutata* and *Eucladium verticillatum*.

In Wissetts Wood (SO6772), which has a less steeply banked stream running through it, there are impressive sheets of *Radula complanata*, and *Cololejeunea minutissima* also occurs. Fruiting *Platygyrium repens* and *Trichostomum tenuirostre* were found during the 2004 BBS visit.

Hillwood Farm, again privately owned, has a number of deep tufa valleys, Death's Dingle (SO 668678), Foxholes Coppice (SO660673) and Mill Coppice (SO668673), all with many species of liverwort and luxuriant growth of mosses, particularly of *Palustriella commutata*. Sapey Brook (SO7060), otherwise known as Paradise, is in the ownership of several landowners. It has side rivulets and tufa is present. Again, it is a good, humid habitat for bryophytes but the diversity is less rich than in the Hillwood valleys. To the north, Hanley Dingle [SO6866, Worcestershire Wildlife Trust (WWT), access with permit] has a steeply sided valley, often making for quite difficult terrain. It was visited by the BBS in 1979, and more recently by the Border Bryologists, but deserves further exploration. Further south, Hayley Dingle (SO7553) is a more open but humid valley, with more than 12 species of liverwort, including *Microlejeunea ulicina*, as well as the moss *Zygodon stirtonii*.

Lowland mixed woodlands

WWT's woodland reserves are of varying interest. Most are not outstanding for their bryoflora, but all support a range of common woodland mosses and liverworts. Hunthouse Wood (SO7070), lying as it does on Carboniferous coal measures, and with a stream, damp areas and remnants



◀ *Fissidens dubius* (far left; Robert Goodison), *Bartramia pomiformis* (middle; Graham Motley) and *Barbilophozia attenuata* (this page; Des Callaghan).

of mining, probably has the most diversity, with at least 20 species of liverwort and over 70 mosses. Crews Hill Wood (SO7353) has a range of interesting habitats, including some steep banks. Knapp and Papermill Reserve (SO7451) includes a stretch of the Leigh Brook, wet areas, meadow and orchard, as well as woodland; this variety of habitat leads to reasonable diversity. Chaddesley Woods (SO9173) and nearby Randan Wood (SO9172) both have a wide range of woodland species, the latter having a wet area containing *Sphagnum squarrosum*. Close by, in Nutnells Wood, *Riccia fluitans* occurs. Each of the other woodland reserves, Grafton (SO 9756), Monkwood (SO8060), Ravenshill (SO 7453), Tiddesley (SO9245) and Trench Wood (SO9358) contain a range of typical woodland bryophyte species, but there are no records of unusual species. Similarly, although Piper's Hill Common (SO9564) has many splendid old trees, there are no outstanding bryophyte records but it would be worth further examination, as would many of the other woods in the county.

Rock exposures

There are a number of large rock exposures in Worcestershire and each has proved worth examination, yielding a few unusual species for the county. Osebury Rock (SO7355) on the bank of the River Teme, not far from its confluence with the Severn, has a bryoflora ranging from species such as *Cinclidotus fontinaloides*, *Dialytrichia mucronata*, *Cololejeunea rossettiana*, *Lejeunea lamacerina*, *Neckera complanata* and *Leskea polycarpa* to *Bartramia pomiformis*.

Orthotrichum cupulatum has been found nearby on the asbestos roof of a shed. *Zygodon stirtonii*, *Metzgeria conjugata* and *Fissidens dubius*, *F. pusillus* and *F. viridulus* have all been found here. *Lophozia excisa* occurred on another rock exposure in a nearby field.

Kingsford Country Park (SO8282), near Kinver, has a number of exposed rocks on which the liverworts include the locally rare *Barbilophozia attenuata*. Several *Plagiothecium* species are present in the park.

Devil's Spittleful Reserve (SO8074) has typical heathland species but the rock in the centre has proved most interesting, with *Tritomaria exsectiformis* the outstanding record. *Bartramia pomiformis* has been found along the track leading to the reserve. Nearby Blackstone Rock (SO794740), overlooking the River Severn near Bewdley, is likely to be productive, but has not been explored.

Southstone Rock, Rock Coppice (SO710640) supports the liverwort *Plagiochila britannica* and mosses *Oxyrrhynchium schleicheri*, *Palustriella commutata* and *Tortula marginata*.

Another site with exposed rocks is Habberley Valley, near Kidderminster (SO8078). Liverworts include *Barbilophozia attenuata* and *Plidium ciliare* and among the mosses are *Cynodontium bruntonii* and *Pleurozium schreberi*.

Heathland

In the past Hartlebury Common (SO8270) was considered a good site for bryophytes, but it has declined. In 1980, Richard Fisk recorded about 80 species, including three species of

Sphagnum; recent visits have also yielded three *Sphagnum* species as well as *Hypnum imponens*, and *Racomitrium ericoides* on drier ground. The wet area is reduced and scrub encroachment on parts of the common as well as public use have reduced the typical heathland bryoflora.

The 25 hectares of heath at the Devil's Spittleful and the Rifle Range Reserve (SO8075) show the typical heathland species composition. An added bonus is the existence of species on the shaded rock, including *Tritomaria exsectiformis*.

The extensive areas of heath and acidic grassland on the Clent Hills (SO9279) and the Lickey Hills (SO9975) have been little explored by bryologists. Both regions have a variety of other habitats, including wooded and wet regions.

Brown-field sites and other man-made habitats

There may be many brown-field sites of interest within Worcestershire, only a few of which have been explored. In addition, roadsides and roundabouts have been neglected.

Larford (SO8169) is an area of mixed habitat, including long-established set-aside, industrial debris, bare sandy patches, encroaching bramble, woodland and a small pool, concrete blocks and the bank of the River Severn. Accessibility and

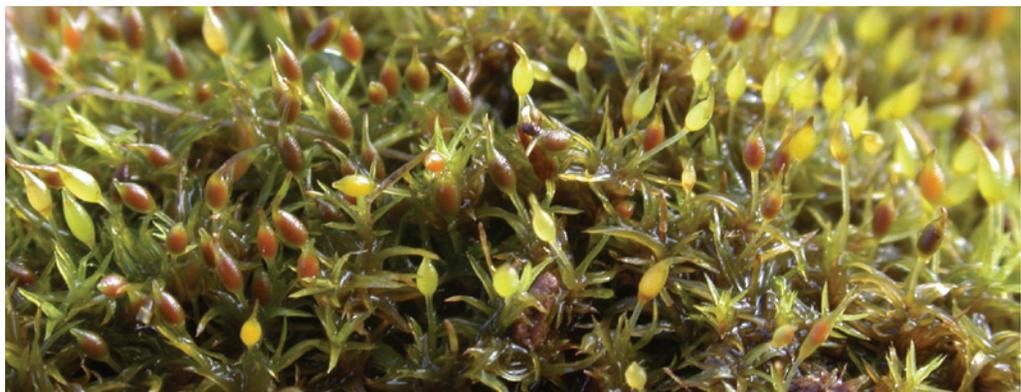
biodiversity of parts of this site may be affected by future management, however. Bryophytes recorded include a range of species of *Bryum*, *Didymodon*, *Orthotrichum*, *Syntrichia* and *Tortula*, as well as *Aloina aloides*, *Drepanocladus aduncus*, *Leskea polycarpa*, *Radula complanata* and *Ulota phyllantha*, a mix which reflects the variety of habitats.

Cherry Orchard (SO8553) beside the Severn in Worcester is another mixed area, with a scrubby nature reserve owned by Worcester City Council and an area of dredgings, with dune-like piles of sand, owned by British Waterways.

Honeybourne Triangle (SP1244), a triangular area of barren land enclosed by junction railway lines, is noteworthy for the variety of small acrocarps, particularly for members of the Pottiales. The most interesting species found on the site is *Tortula protobryoides*.

Among other man-made sites of interest are three damp areas with ponds created by extraction procedures. Beckford Gravel Pit (SO9736 in v.-c. 33) has a mixture of habitats and species, including a bank of *Aloina aloides*. Grimley Brick Pits (SO8460) lies alongside the Severn and the occurrence of such species as *Hennediella stanfordensis* and *Leskea polycarpa* reflect this. The presence of open water, marsh and willow scrub at Broadway Gravel Pit (SP0837) suggests that

▼ *Weissia squarrosa*. Jonathan Sleath



it might have reasonable bryological biodiversity, but the site has not been visited by bryologists.

The Cleeve Prior Community Orchard area (SP0748) is of interest, since it has a combination of old fruit trees and small ponds. *Ulota phyllantha* was found on one of the trees. The former Cleeve Prior Reserve (SP0749) includes a steep slope with scrub down to the River Avon, which is bryologically uninteresting except at the water's edge, where *Leskea polycarpa* and *Platyhypnidium riparioides* have been found.

Other habitats which have been neglected are arable fields. Perhaps one of the most interesting fields examined is on St Catherine's Farm (SO942403), at the foot of the north slope of Bredon, where 21 species of bryophyte have been found, including the rare *Weissia squarrosa*. In the rhubarb fields at Holt Fleet (SO825639) both *Sphaerocarpos texanus* and *S. michelii* have been found recently. In one field, 21 species were recorded, including *Ephemerum serratum*. A nearby sage field yielded only eight species. Some of the fields examined in Worcestershire have contained no more than three species.

Those older churchyards which have been examined (Fladbury, SO9946; Cotheridge, SO786547; Cropthorne, SP000452; and St Kenelm's, Romsley, SO944807 and its associated well) have all contained over 20 species. Old paths and the base of the church buildings are home to a variety of acrocarps. *Didymodon nicholsonii* seems to occur regularly in such churchyards. Possibly, some of the older churchyards may retain species which are now rare in the rest of the county. Newer churches may also include several species and may be one of the main habitats for bryophytes in suburban districts. For example, along the sides of the Spadesbourne Brook in the grounds of All Saints' Church, Bromsgrove (SO965714), there is extensive growth of *Conocephalum conicum*.

There are a number of records from parkland, but there has been no systematic exploration of such sites. A brief visit to the Croome Estate (SO84) proved disappointing, with very little of interest.

An interesting list of species has been obtained from the nursery garden at Potters Park, Chad-desley Corbett. Similar nursery sites may be worth examination. Every private garden has a number of species and although these are mostly very common species, this is not necessarily always the case. After all, *Leptodontium gemmascens* is found on thatched roofs although it has not been recorded in Worcestershire. Incidentally, since another habitat where it is found is in hollows among reeds, searches for this species have been made on Castlemorton Common to no avail.

Probably, many more species occur within Worcestershire than have been recorded. Before the 2004 BBS Spring Meeting, Mark Lawley listed 74 species that were found in v.-c. 37 before 1950 but had not been recorded since, as well as 19 species never found but judged likely to occur on the basis of their distribution nationally. About 16 of these have now been found. The challenge is to keep recording to build up knowledge of the county's bryological diversity and the distribution of species, and to establish more firmly whether or not these species do occur locally.

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