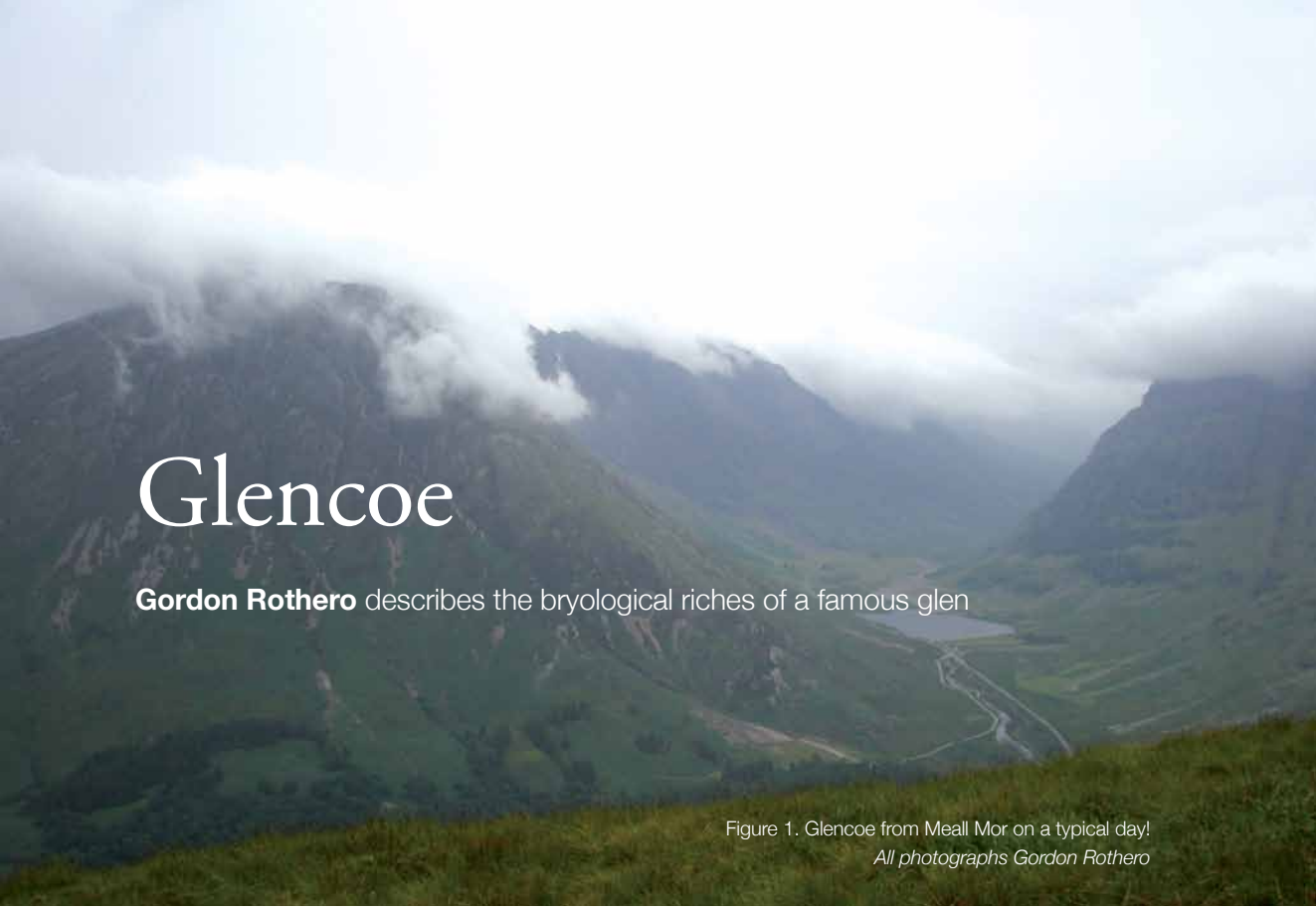


Glencoe

Gordon Rothero describes the bryological riches of a famous glen

Figure 1. Glencoe from Meall Mor on a typical day!
All photographs Gordon Rothero

In comparison to the mountains in my earlier accounts, Glencoe is very accessible as the A82 runs down the middle and all sites are within a reasonably comfortable day visit. This account covers all the hills bordering the glen on the south, from Buachaille Etive Mor in the east to Meall Mor in the west, and includes the big hills Stob Coire Sgreamhach, Bidean nam Bian, Stob Coire nan Lochan, Stob Coire nam Beith and, tucked away, Creag Bhan, plus the Three Sisters, Beinn Fhada, Gearr Aonach and Aonach Dubh. The north side of the glen has the hills along the Aonach Eagach from Am Bodach to Clachaig Gully, but these are only given a brief mention here, for good reasons! Almost all of the ground covered here is owned and managed by the National Trust for Scotland, the exception being Creag Bhan and the north side of the Aonach Eagach, and all of the sites are on OS Explorer Map 384.

Glencoe (Fig. 1) has a remarkable bryophyte flora with some 390 plus taxa recorded, nearly 40% of the Scottish total, with 11 nationally rare and 81 nationally scarce species. The physical reasons for this internationally important flora are not hard to find, but the impact of relatively easy access for bryologists should not be underestimated! The site goes from near sea level by the River Coe by the visitor centre to the summit of Bidean nam Bian at 1150 m, plus a number of other high hills. Recent glaciation means that there is a lot of exposed rock (Fig. 2), both in the form of extensive areas of scree and many crags at low and high altitude, and in the numerous, incised watercourses. The underlying rock on the bulk of the site is the Glencoe Volcanic Formation, igneous rocks with a variety of rhyolites, andesites and tuffs, some of which are at least moderately base-rich, though most are acidic, and some are very unproductive. All have a rough texture which provides a good substrate for bryophytes. On Meall Mor and Creag Bhan there are large areas of metamorphosed limestone, obviously strongly calcareous, and these provide

△ Figure 2. Church Door Buttress with the summit of Bidean nam Bian up on the left.

a radically different substrate for the bryophytes.

These physical features give a variety of habitat for bryophytes, all within the context of a strongly oceanic climate – you have been warned. There are patches of broadleaved woodland (Fig. 3), fragments of the Scottish Rainforest, scattered along the glen, particularly on the northern ramparts of the Three Sisters and in the Lost Valley, and these give a good oceanic bryophyte flora. There are vast areas of crags and scree with chasmophytic communities of both acid and calcareous rocks and, in the higher, north-facing coires, good areas of bryophyte-dominated vegetation dependent on late-lying snow. There is also important flush vegetation of two types, cool montane springs often associated with areas of late-lying snow, and more extensive calcareous flushes on the limestone of Meall Mor and Creag Bhan. But it should also be remembered, as ever, that very large areas of these hills are bryologically rather dull!

◁ Figure 3. Very steep rocky woodland on Gear Aonach.

Lagangarbh Coire

As you reach the highest point of Rannoch Moor from the south, the first thing to catch the eye is the rocky pyramid of Buachaille Etive Mor, the 'big shepherd' standing guard over the entrance to Glencoe and a strong contender for 'the most photographed mountain in the world' award. The big Buachaille is a climber's mountain, with dozens of climbs on the face overlooking

Rannoch Moor (try the scramble of Curved Ridge if you don't mind taking your hands out of your pockets), but the hard, solid rhyolite, so good for climbing, seems very unproductive but is fairly typical of the montane flora on these western hills. Probably the best area is in Coire na Tulaich, usually called Lagangarbh Coire, where snow lies late over very rocky terrain. In the prominent gully at the base of the coire, bryophytes are locally plentiful but not very diverse, think *Diplophyllum albicans* and *Marsupella emarginata*, and are typical of wet acidic coires in the west. Where there is some flushing a few more demanding species occur with *Amphidium mougeotii, Anoectangium aestivum, Blindia acuta, Bryum alpinum, B. pseudotriquetrum, Ditrichum zonatum, Fissidens adianthoides, Molendoa warburgii, Gymnomitrion concinnatum, Metzgeria conjugata* and *Tritomaria quinquedentata*; *Grimmia donniana* occurs on drier rocks. Above this and away from the vague path, the more stable screes above the gully on the east side have small stands of oceanic-montane liverwort heath with *Anastrophyllum donnianum, Bazzania pearsonii, Herbertus hutchinsiae, Plagiochila carringtonii, Scapania nimbosa* and *S. ornithopoides*, along with the more common *Anastrepta orcadensis, Bazzania tricrenata, Mylia taylorii, Pleurozia purpurea, Scapania gracilis* and the abundant *Racomitrium lanuginosum* and *Diplophyllum albicans*.

Higher up, where the snow lies late there is patchy snowbed vegetation and the ground is steep, very loose and unstable, but it does have *Kiaeria falcata* (Fig. 4) and *K. starkei*. Broken crags have *Andreaea hookeri, A. mutabilis, Arctoa fulvella* and *Marsupella stableri*, and flushed rocks have *Dichodontium palustre, Philonotis fontana, Scapania uliginosa* and a little *Pohlia wahlenbergii* var. *glacialis*. Escaping from the coire, the ridge leads away west to Stob na Doire, a great walk, and then to Coire Altruim. The ridge along the way is rather dull but, if you stray onto the north side, there are patches of snow bed vegetation with *Ditrichum zonatum, Kiaeria falcata, Anthelia juratzkana, Barbilophozia sudetica, Gymnomitrion concinnatum, Marsupella stableri* and *Schistochilopsis opacifolia*, and some ablation areas with finer gravel and stands of *Conostomum tetragonum* and *Gymnomitrion*

△ Figure 4. *Kiaeria falcata* on crags at the head of Lagangarbh Coire.

△ Figure 5. *Anoectangium aestivum* on the Coire Altruim crag.

brevissimum. The impressive crag above Coire Altruim is disappointing, with interest limited to a few stands of *Amphidium mougeotii, Anoectangium aestivum* (Fig. 5), *Grimmia torquata, Isopterygiopsis pulchella* and, where there is some flushing, *Chionoloma hibernicum* and *Molendoa warburgii*.

Coir'Eilde

The next hill west is Buachaille Etive Beag, but I have only been on this in the snow and there appear to be very few records, so it offers a chance for someone to explore. Westward again leads to Stob Coire Sgreamhach, approached up the Lairig Eilde from the large car park just as the glen narrows. The target here is Coir'Eilde, gained either by a long slog up the slopes to the north of the Allt Coir'Eilde or a shorter but scrambly route to the south of the burn. The burn itself has a spectacular ravine running up into the coire which looks very worthy of exploration, but access might be challenging. In the coire there are scattered crags and much ground to cover of which I have only explored the southern part: the crags under Sron na Lairig (another enjoyable scramble). Here, one gully (Fig. 6) has some base-rich ground heralded by stands of *Orthothecium rufescens*, with *Anoectangium aestivum, Blindia acuta, Ctenidium molluscum, Dichodontium palustre, Kiaeria falcata, Palustriella commutata, P. falcata, Aneura pinguis, Harpanthus flotovianus, Jungermannia eucordifolia, Riccardia multifida* and *Schistochilopsis opacifolia*. However, pride of place here must go to a large and unexpected stand of *Bryoerythrophyllum caledonicum* (Fig. 7) on wet slabs on the right-hand side of the gully. Other crags in the coire have some base-rich ground, with stands of *Amphidium lapponicum, Grimmia torquata* and *Tortella tortuosa*, and on one crag *Moerckia blyttii* occurs very close to *Bryum riparium*, an odd but pleasing juxtaposition. All of the more common oceanic-montane liverworts occur here although *Plagiochila carringtonii* is sparse.

The Lost Valley

The next glen west is Coire Gabhail, usually known as the Lost Valley (Fig. 8), which,

▽ Figure 6. Coir'Eilde and Sron na Lairig crags, with the 'good' gully top right.

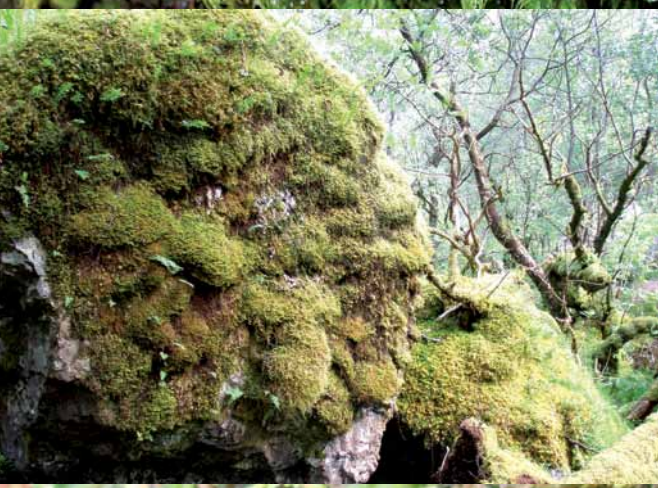
▽ Figure 7. *Bryoerythrophyllum caledonicum* on wet slabs in Coir'Eilde, with *Dichodontium palustre* and *Fissidens osmundoides*.

△ Figure 8. Looking down on the Lost Valley, with the wooded rockfall in the distance.

because it is both accessible and interesting, has had a lot of bryological attention. It is a fine geomorphological feature where a huge, post-glacial rockfall has blocked the glen leaving an alluvial flat above – the Lost Valley – followed by a wooded jumble of boulders from which a burn emerges dropping into a steep ravine. Access is from a large car park and a well-made path, crossing the River Coe by a spectacular bridge and then on and up into the wooded defile. The walk is very popular and it can be difficult to park unless you get there early. There is a good oceanic flora in the ravine near the bridge, but access is tricky unless you like getting wet, and it is best to press on up through the exclosure, passing a large boulder, the type locality for *Andreaea megistospora*, and follow the path into the ravine. The initial part of the valley has good patches of *Sphenolobopsis pearsonii* on steep, damp rocks by the path and frequent *Leptoscyphus cuneifolius* on the trees (Fig. 9) plus some big cushions of *Dicranodontium uncinatum* on crags by the burn (Fig. 10). Just recently David Long found *Platyhypnum duriusculum* on rocks in the burn here, adding another element to the interest.

Above where the angle eases and where the main path crosses the burn is the wooded rockfall where the sheer abundance and luxuriance of the bryophytes on the house-sized boulders is a visual delight. *Plagiochila punctata* and *P. spinulosa* (Fig. 11) are common but it is the occurrence of the large oceanic-montane liverworts in a woodland setting that is unusual. *Herbertus hutchinsiae* is quite frequent as is *Pleurozia purpurea*, but

▷ Figure 9. Clare Rickerby inspecting *Leptoscyphus cuneifolius*.



Mastigophora woodsii, Plagiochila carringtonii and *Scapania ornithopoides* (Fig. 12) are more local. It is rare to find these species in this woodland habitat in Britain, the only similar site in this area is the hanging woodland by Steall Falls in Glen Nevis, but it is similar to the habitat for this community in the Himalaya. Another oceanic moss, *Glyphomitrium daviesii*, occurs in the more open block scree above the woodland, one of its few Argyll sites, sometimes confused with another oceanic species, *Racomitrium ellipticum*, which is frequent here. From the Lost Valley path below the rockfall, another narrow path leads round towards the face of Gearr Aonach heading for the Zig-zags, an easy but exciting route up onto the ridge. Ignoring this route and staying at the same level and heading further west takes you to the hanging woodland on the face of Gearr Aonach which has some of the same species as the Lost Valley but is precipitous and needs care.

The good path up from the Lost Valley leads up to Bealach Dearg on the main ridge and to a set of crags that climbers call the Lost Valley Buttress (Fig. 13). The areas of scree in the coire have good stands of oceanic-montane hepatics: *Anastrophyllum donnianum* is frequent with patches of *Scapania nimbosa, S. ornithopoides* and a little *Bazzania pearsonii* and the typical mats of *Hylocomiastrum umbratum* (Fig. 14), *Stereodon callichrous* and *Orthocaulis floerkei*, and very locally the crevices in the scree have small patches of *Herzogiella striatella*. The broken ground under Bealach Dearg and in all of the upper gullies holds snow into the summer and has a typical flora with lots of *Kiaeria falcata* and *K. starkei*, plus

◁ Top Figure 10. *Dicranodontium uncinatum* in the Lost Valley.
Middle Figure 11. *Plagiochila spinulosa* in abundance on wooded boulders in the Lost Valley rockfall.
Bottom Figure 12. *Scapania ornithopoides* in the wooded block scree in the Lost Valley.

Arctoa fulvella, Ditrichum zonatum, Oligotrichum hercynicum, Pohlia ludwigii, Polytrichastrum alpinum, Barbilophozia sudetica, Cephalozia bicuspidata, Marsupella sphacelata, M. stableri, Nardia scalaris, Schistochilopsis opacifolia and some *Andreaea nivalis* and *Kiaeria glacialis*.

On the south side of the path up to Bealach Dearg the wet, broken crags are moderately base-rich and have *Amphidium mougeotii, Anoectangium aestivum, Bryoerythrophyllum ferruginascens, Drepanocladus trifarius, Fissidens osmundoides, Gymnostomum aeruginosum, Hymenoloma crispulum, Aneura pinguis, Eremonotus myriocarpus, Gymnomitrion obtusum, Herbertus stramineus, Plagiochila carringtonii, Radula lindenbergiana* and *Riccardia multifida*. Around Lost Valley Buttress the crags tend to be more acidic, but there are very local base-rich facies with a little *Amphidium lapponicum, Anoectangium aestivum, Grimmia torquata, Isopterygiopsis muelleriana* (Fig. 15), *Orthothecium rufescens* and *Scapania aequiloba*. Wetter, broken rocks have *Andreaea nivalis, Bryum zieri, Chionoloma hibernicum* (Fig. 16), *C. recurvifolium, Ditrichum zonatum, Racomitrium macounii* subsp. *alpinum, Tortella tortuosa* and *Gymnomitrion concinnatum*.

Coire nan Lochan

The next coire to the north is Coire nan Lochan, again approached from either of the two big car parks on the main road, taking a path across the River Coe and climbing steeply up into the coire and the lochans below the semi-circle of crags, a very popular venue for winter climbing. This is a large and complex area to explore, but there seems to be very little base-rich ground here and the general bryophyte flora is similar

▷ Top Figure 13. Lost Valley Buttress area.
Middle Figure 14. *Hylocomiastrum umbratum* in scree.
Bottom Figure 15. *Isopterygiopsis muelleriana*.

to the head of Coire Gabhail. The scree areas in the base of the coire have a patchy development of the oceanic-montane liverwort heath, with *Anastrophyllum donnianum* fairly frequent and patches of *Scapania nimbosa* and *S. ornithopoides* readily found, but *Bazzania pearsonii* is distinctly sparse here. Below the crags some vegetated areas with scattered boulders have flushes running down the slope from the crags (Fig. 17), with typical species including *Dichodontium palustre, Hygrohypnella ochracea, Philonotis fontana, Plagiothecium platyphyllum, Rhizomnium punctatum, Scorpidium revolvens, Chiloscyphus polyanthos, Jungermannia eucordifolia, Scapania uliginosa, S. undulata,* and some stands of *Bryum weigelii, Philonotis seriata* and *Rhizomnium magnifolium* (Fig. 18). Dense patches of *Harpanthus flotovianus* are less common but occur in several places at the edges of the flushes. Down by the lochans *Lescuraea patens* occurs on flushed rocks and there is a lot more ground worth exploring here.

Higher up and in the gullies, and involving a lot of up and down, the influence of late lying snow is again apparent, with good stands of *Kiaeria falcata, K. starkei, Oligotrichum hercynicum, Pohlia ludwigii, Anthelia julacea, Schistochilopsis opacifolia, Marsupella stableri*, sparse patches of *Conostomum tetragonum, Diplophyllum taxifolium, Moerckia blyttii* and, at the base of Forked Gully, a large population of *Andreaea nivalis*.

Stob Coire nam Beith

From the car park at the west end of Loch Achtriochtan, a short walk down the road leads

◁ Top Figure 16. *Chionoloma hibernicum* on a wet crag below Lost Valley Buttress.
Middle Figure 17. A flush in Coire nan Lochan, with Dan Watson, NTS Ecologist, and his dog Riddle.
Bottom Figure 18. *Rhizomnium magnifolium.*

to a stile over the wall by the bridge and the start of the path up into Coire nam Beithach. This path soon becomes very steep and continues in much the same way, right up the burn. The main path heads up to Bealach an t'Sron, but you need to head south-east across the slope at some point to pick up the glen that comes down from Bidean nam Bian and a path that is vague at best. This eventually leads up into the very rocky coire below Church Door Buttress (Fig. 2) and the hallowed ground described in Raven & Walters' New Naturalist book *Mountain Flowers* as the site for *Saxifraga cernua*. The saxifrage is scattered about in the coire, but, more important for us, there are also excellent bryophytes as some of the rock here is strongly base-rich. There is a lot of ground to explore here, so I will concentrate on the open gully that runs up to the ridge below Stob Coire nam Beith (Fig. 19), with a craggy retaining wall on the left which has, some way up, an obvious fissure that narrows in the middle: Hourglass Gully.

At the base of the coire are flushes with good populations of *Bryum weigelii, Philonotis seriata, Rhizomnium magnifolium, Harpanthus flotovianus* and, very locally, *Saccobasis polita*, along with more common plants such as *Hygrohypnella ochracea*, *Pohlia wahlenbergii* var. *glacialis* and *Scapania uliginosa*. The lower screes in this area have good stands of oceanic-montane liverwort heath, with large populations of *Anastrophyllum donnianum, Scapania nimbosa* and smaller amounts of *S. ornithopoides*. Higher up, the screes are increasingly affected by longer-lying snow; initially this gives large populations of *Hylocomiastrum umbratum, Plagiothecium denticulatum* var. *obtusifolium, Stereodon callichrous, Anastrophyllum donnianum* and *Orthocaulis floerkei*, and rarely small amounts of *Sciuro-hypnum glaciale* and *S. reflexum* in a community picked out by stands of the ferns *Athyrium distentifolium* and *Cryptogramma crispa*.

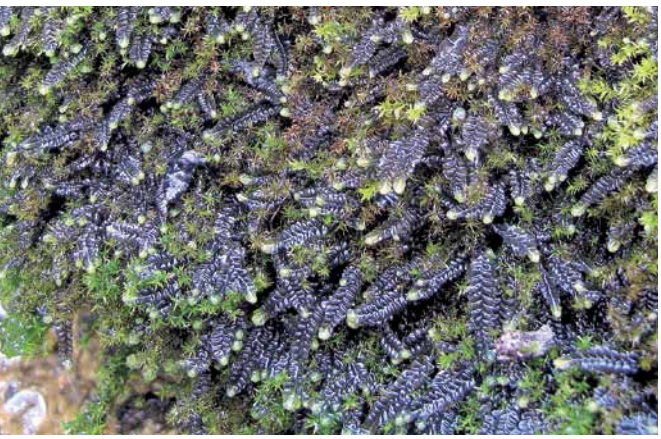
△ Top Figure 19. The broad gully below Stob Coire nam Beith.

The buttress at the base of the gully on the left has some damp crevices, with a little *Lescuraea patens* and also a small stand of *Bryoerythrophyllum caledonicum*, but the best ground is further up towards the base of Hourglass Gully. Here there are better patches of *B. caledonicum*, along with other montane calcicoles such as *B. ferruginascens, Chionoloma recurvifolium, Distichium capillaceum, Mnium thomsonii, Orthothecium rufescens, Barbilophozia lycopodioides, Harpanthus flotovianus* and *Mesoptychia heterocolpos*. In one place the flushed turf near the base of the crags has a small population of *Brachythecium cirrosum* and scattered stems of *Aulacomnium turgidum*. The scree at the base of Hourglass Gully is a bit loose, but does have a good population of both *Lescuraea patens* and *Sciuro-hypnum glaciale*, along with some *Hylocomiastrum pyrenaicum*. Further on again, near a small cave, wet rocks have *Andreaea nivalis, Gymnomitrion adustum, Marsupella stableri* and rarely *M. boeckii*. Across the slope there is a buttress which splits the broad gully and at the base of this there is a hollow with *Timmia norvegica* along with scattered stems of *Saxifraga cernua*. On the crags and in the scree below there are patches of *Brachytheciastrum*

△ Figure 20. *Syntrichia norvegica* is very sparse on the Stob Coire nam Beith crags; this photo is from the Ariège Pyrenees.

trachypodium, often camouflaged by frequent *Sciuro-hypnum glaciale*, and there are further patches of *Lescuraea patens*. Finally, on the other side of the open gully, on south-east facing crags under the summit of Stob Coire nam Beith, a prominent overhang has more *Brachytheciastrum trachypodium* and a little *Syntrichia norvegica* (Fig. 20), with *Antitrichia curtipendula, Lescuraea patens, Mnium thomsonii, Sciuro-hypnum cf. glaciale, S. reflexum* and *Metzgeria pubescens*.

▽ Figure 21. *Mesoptychia bantriensis*, with *Hymenostylium recurvirostrum*.



Meall Mor

The lumpish hill that sits at the bottom of Glencoe is Meall Mor. The bright green colour of the slopes that face the main road attests to the limestone bedrock, and this large area of limestone means that there are a number of interesting bryophytes which have their only Glencoe sites here. Above the initial slopes the ground is very steep but with care it is possible to explore most of the hillside and it is a good option when the bigger hills are clagged in. However, getting around takes up a lot of time and it is not always easy to get to features that are obvious from below. One attraction of the wet crags here is the abundance of the beautiful red wefts of *Orthothecium rufescens* (see front cover), here often associated with dark, calcium-encrusted cushions of the rare variety of *Hymenostylium recurvirostrum*, var. *insigne*. Some ledges on the crags have patches of *Chionoloma hibernicum*, dense cushions of the tiny stems of *Eremonotus myriocarpus*, bright green patches of *Gymnostomum calcareum* and delicate turfs of *Didymodon ferrugineus* and at least one stand of *Bryum dixonii*. Drier crags have *Grimmia funalis, G. torquata, Schistidium strictum*, and on the higher crags *Stereodon hamulosus* and rarely *Campylium bambergeri*.

There are flushes spread over the slopes, more particularly on the north-east aspect where the slope is a little less steep, and these have an excellent flora, although a number of the species are quite hard to spot without diligent searching. On more open wet rock and soil there are occasional small patches of *Jungermannia borealis* and *Solenostoma confertissimum*, and larger cushions of *Mesoptychia fitzgeraldiae. Mesoptychia gillmanii* can be difficult to pick out from the frequent *M. bantriensis* (Fig. 21) and usually needs microscopic confirmation, and *Drepanocladus trifarius, Meesia uliginosa,*

Barbilophozia quadriloba, Scapania degenii and *Saccobasis polita* are all widespread but sparse. Species recorded here in the past are *Catoscopium nigritum, Cinclidium stygium* and *Moerckia flotoviana*, so there is a challenge. Also, seen only once, in 1967, is *Scapania parvifolia*, a difficult and possibly overlooked species with no British records for over 30 years.

Parking at the big bend as the road swings past Meall Mor and following the track up the Allt na Muidhe past the farm eventually brings you to Creag Bhan and its broken calcareous crags visited by the BBS in 1953. I have only had one quick visit here and it deserves a lot more attention, as does Sgurr na h-Udlaidh further up the glen, but even a quick visit produced 150 species in a scramble up the crags and onto the flushes on the northern slopes. Species of interest on the crags include *Chionoloma recurvifolium, Plagiopus oederianus, Stereodon hamulosus, Thuidium recognitum, Plagiochila carringtonii*, and in the flushes *Cinclidium stygium* (Fig. 22), *Odontoschisma elongatum* and *Saccobasis polita*.

The north side of the glen

Finally, a brief word about the north side of the glen; the hills from Am Bodach to Clachaig Gully form the Aonach Eagach which gives the best ridge scramble outside of the Skye Cuillins. The slopes above the main road are very steep and not very inviting and are precipitous above and I have only looked at the lower parts of gullies on Am Bodach and this involves some scrambling – good fun but quite serious. The rock in the lower gully is moderately base-rich and has some nice things like *Amphidium lapponicum, Fissidens osmundoides, Grimmia torquata, Molendoa warburgii, Pohlia cruda, Racomitrium ellipticum, Schistidium apocarpum, S. strictum, Tortella tortuosa, Marchantia quadrata* and *Mesoptychia bantriensis*. Further up where the gully divides, there are in addition stands of *Bryoerythrophyllum ferruginascens, Eremonotus myriocarpus, Herbertus stramineus, Jungermannia borealis, Metzgeria conjugata* and *Plagiochila bifaria*. The lonely coires on the north side of the Aonach Eagach are largely unknown territory, but there are some good vascular plant records and, on the main ridge itself, I noted *Oedipodium griffithianum* on the Pinnacles.

△ Figure 21. *Cinclidium stygium* on Creag Bhan.

Despite being a relatively well-bryologised area there are large areas to explore, even in the most popular coires, and the geology seems to produce small areas of base-rich rock in unexpected places. The north side of the Aonach Eagach is almost virgin territory and even the vascular plant flora here is not well known, but it takes a bit of effort to get to. Finally, a question and a challenge: given that there is a reasonable amount of snowbed vegetation on the Glencoe hills, why is there no *Polytrichastrum sexangulare* here – or elsewhere in vc 98?

Gordon Rothero
e gprothero@aol.com