

Bryology, like life, is full of surprises. In August 2008, while walking along a gritstone wall at Kinder Reservoir in Derbyshire, I noticed two tufts of a moss that struck me as unfamiliar. The moss turned out to be *Dicranoweisia crispula*. Revisiting the site a year later I found three good fertile tufts on the same short stretch of wall. The common British *Dicranoweisia*, *D. cirrata*, occurs occasionally on siliceous walls and rocks, but the tufts of *D. crispula* were larger and less compact, and clearly not the same species. Microscopically, the plants showed the diagnostic papillose-striate cell walls, and plane, unistratose leaf margins.

D. crispula has a distribution pattern shared by many montane bryophytes in Britain, occurring widely (and sometimes at low altitudes) in highland Scotland, but otherwise restricted to North Wales and the Lake District. It has not previously been recorded in the Pennines or the Scottish lowlands. Its presence at a fairly low altitude (290 m) in the Peak District is therefore not easy to explain.

The wall on which it occurs is an old mortared gritstone wall on the periphery of Kinder Reservoir on the western side of Kinder



Dicranoweisia crispula on a Peak District wall

< Fig. 1. Two green tufts of *Dicranoweisia crispula* (foreground) in moist condition on the wall at Kinder Reservoir, with *Racomitrium lanuginosum* in the background. Tom Blockeel

Tales of the unexpected: *Dicranoweisia crispula* on a Peak District wall

Scout. Construction of the reservoir began in 1903 but was beset by geological difficulties and the original plans for a masonry dam were abandoned in favour of a clay-core earth dam. The reservoir was finally inaugurated in 1912 (Brumhead *et al.*, 2008). Stone was obtained from local quarries. Like a number of other mortared gritstone walls by Pennine reservoirs, the wall at Kinder has a rather rich bryophyte flora that includes plentiful *Ptychomitrium polyphyllum* and five species of *Racomitrium* (*R. aciculare*, *R. fasciculare*, *R. lanuginosum*, *R. affine* and *R. sudeticum*, the latter in its only known Derbyshire site). *Grimmia donniana* has also been recorded. Mortar undoubtedly provided some buffering against the excessive air-borne pollution that affected the southern Pennines during the 20th century. At the Kinder site, *D. crispula* is associated with *Racomitrium lanuginosum* and *Ceratodon purpureus* (Fig. 1).

Kinder Scout is the most southerly of the 600 m hills in the Pennines, consisting of a peat-covered plateau bounded in parts by a low escarpment of hard, siliceous Millstone Grit crags. In places there are small boulder fields (Fig. 2).

The exposed crags of Kinder Scout are bryologically poor, a fact that can be attributed

to the hard acidic nature of the rock and the long history of industrial pollution. Even the boulder fields have few bryophytes on their rock surfaces (Fig. 3). A richer former flora is indicated by the presence of *Mylia taylorii* and (very rarely) *Bazzania trilobata* in deep hollows in the boulder fields, and there are old records of *Douinia ovata* and *Campylopus atrovirens*. However, it seems unlikely that the population of *Dicranoweisia crispula* is a relict of a natural population that formerly grew on Kinder Scout, because (a) there is no historical evidence for the occurrence of the

species in any other part of the Pennines, and (b) the present substrate did not exist until the early years of the 20th century. It is more likely that *D. crispula* is a chance colonist from wind-borne spores, and that it has further propagated itself *in situ*. Both emergent and very old empty capsules were present on the tufts observed in August this year.

Although the higher parts of Kinder Scout are species-poor, some richer communities occur in the valleys ('cloughs') that radiate out from the plateau. Two nationally rare species, *Seligeria brevifolia* and *Solenostoma caespiticium*, are recorded from these cloughs. *D. crispula*, albeit in a man-made habitat, is a fascinating addition to the flora of this famous Peak District hill, which has recently been granted National Nature Reserve status.

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Reference

Brumhead, D., Rangeley, J. & Rangeley, K. (2008). *The Kinder Reservoir and Railway*. New Mills Heritage Centre.



< Fig. 2. Crags and boulder field of Millstone Grit on Kinder Scout. Tom Blockeel

> Fig. 3. Boulder field habitat with sparse *Mylia taylorii* and *Bazzania trilobata* in deep hollows, but with the rock faces almost bare of bryophytes. Tom Blockeel

