Bryum andicola and *Neckera scabridens*, but this is for another story.

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Tortula freibergii along the Bridgewater Canal

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Tortula freibergii is listed as Low Risk (Near-threatened) in Britain (Church *et al.* 2001) and as Vulnerable in Europe (ECCB 1995). It was discovered in Britain in 1966, from two East Sussex (v.-c. 14) localities: (i) Fairylight Glen in Hastings; and (ii) at Upper Maze Hill, St Leonards-on-Sea (Crundwell & Nyholm 1972). Later, Blockeel & Rumsey (1990) reported the moss from the bank of the Bridgewater Canal in Timperley (Cheshire, v.-c. 58), while Rumsey (1992) discovered a further location at Hayburn Wyke, situated on the coast in North-east Yorkshire (v.-c. 62). I decided to document its distribution along the Bridgewater Canal (Figure 1), particularly as information was required for the forthcoming bryophyte flora of South Lancashire (v.-c. 59).

The River Mersey forms the boundary of v.-c. 59 in the south (Figure 1) so the search started from access points to the canal in the area of Stretford

(SJ89B), including at Hawthorn Lane, Edge Lane and Longford Bridge. First efforts found only small samples of the moss, which was searched for on the vertical and horizontal sandstone edgings of the canal. Further searches were conducted along the canal from Stretford to Worsley (SK70K) and along the Trafford Park to Manchester arm. Lengths of the canal edging have been replaced with concrete from Worsley westwards and through Trafford Park, and it is only on the sandstone that *Tortula freibergii* is found. Waters Meeting, in Stretford, where the two canal arms diverge, had bridges and the sandstone copings had fairly big patches of the moss. Most of the canal edges were overgrown with grasses or other bryophytes. One small sample was found near Throstles Nest Lane bridge (now Pomona Way) but none further into the centre of Manchester, where at Castlefield there are extensive well-worn sandstone edges.

There are also two natural sandstone outcrops close to the canal at Castlefield. One is dry and bare, while the other, adjacent to the adjoining Rochdale Canal, is rich in bryophytes and vascular plants. However, on neither was *Tortula freibergii* found. The Bridgewater Canal begins at Duke's Wharf, Worsley, where the Duke of Bridgewater's coal mines were situated. Here there is a huge red sandstone outcrop, part of the quarry which provided local building stone, but it is accessible only by boat and has not been surveyed. At Duke's Wharf there is also a sandstone wall about five metres high abutting a sandstone outcrop. A visit to the site in March 2003 yielded only a small scrap of *T. freibergii* on the wall, but a visit in March 2007 revealed an extensive patch about 30 cm wide and 2-3 meters high in the corner section of the wall. No *T. freibergii* was found on the sandstone outcrop and so far this moss has still not been found on naturally occurring sandstone in NW England.

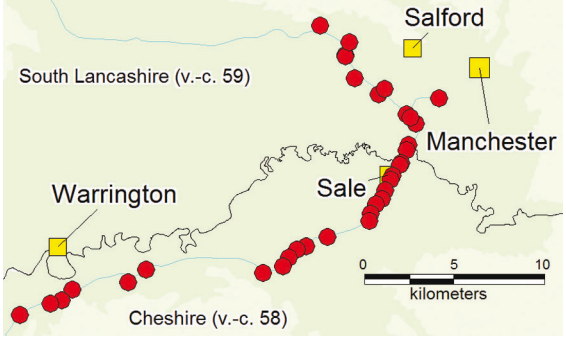

Figure 1. Locations of *Tortula freibergii* documented during the present study along the Bridgewater Canal.

South of the Mersey on the Cheshire section of the canal, between the Dane Road to Marsland Road bridges, extensive patches of *Tortula freibergii* were found. Not only are there bridge access points to the canal in this area (SJ79V and SJ79W), but there are also several roads that lead onto the canal bank, a university boat club at Dane Road, Trafford Rowing Club near Marsland Road and many numbered fishing stations. It seemed that access points result in wear of the turf and exposure of the sandstone edges, providing larger areas of substrate suitable for the moss. The best patches occurred on the red coloured sandstone, identified by Dr F. Broadhurst as a Triassic Sherwood Sandstone of the Helsby level (Blockeel & Rumsey 1990).

Further searches were made in Cheshire on 5th February and 3rd March 2005 as far as Walton and Moore (SJ58X) and again at access points the moss was found, though in small patches only. From 2nd April 2005 I noted prolific fruiting at all sites visited in v.-c. 58 and v.-c. 59; previously only two capsules had been seen. In the winter of 2005 extensive patches of the moss were visible but a very cold spell in March 2006 turned the velvety green patches to black. By September very small samples were found in the hollows and fissures of the red sandstone, which appears to be favoured over the yellow coloured stone. Regen-

eration of big patches was noted in January 2007 followed by fertile material and then extensive fruiting in April but the capsules appeared to be aborted, possibly because of lack of rain in the previous four weeks.

Since there is a lack of records of *Tortula freibergii* from natural sandstone in the north-west of England, the Cheshire sandstone ridges and outcrops should be searched, preferably during December to April. Within the present study area, the long-term prospects for *T. freibergii* depend on weather and canal use. The widening of the M60 motorway and the construction of a new marina, both at Stretford, do not seem to have caused any detrimental effect on the species. While access sites cause turf wear which appears to be an advantage, the increased use of long boats is adding to water pollution and oil in particular may have a detrimental effect on the moss. In summary, *T. freibergii* is sporadic along the areas of the Bridgewater Canal that were searched, but seems to be stable.

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Barcoding Britain's liverworts and hornworts: a new project and request for material

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Background

DNA barcoding is an exciting and actively developing field of natural history science. The long-term goal is to develop a universal genetic system to help with the identification of samples of known species, and also to contribute towards the discovery of new species. The principle of the approach is to choose a standard short region of DNA and produce an open-access centralised database of sequences ('barcodes') which can be used as a reference library against which unknown samples can be compared.

In animals, DNA barcoding has already proved very useful. It aims to provide an identification tool in many groups, and has already contributed towards the discovery of new species. The key