

The Mosses and Liverworts of Mid-West Wales

Jeffrey Bates

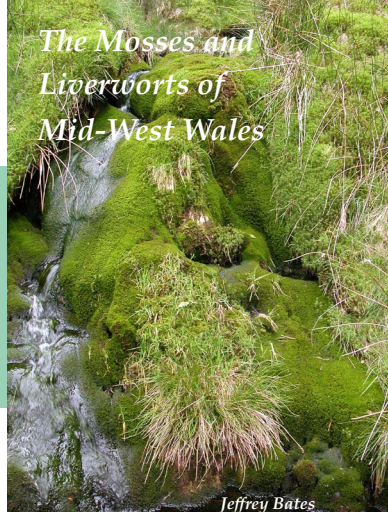
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This splendid new local flora provides the full works with all the trimmings. And what a lot of trimmings there are!

There are chapters on physical environment; impacts of man; vegetation and bryophyte habitats; diversity, phytogeography and change; important sites for bryophytes; and history of bryological exploration. These make up 118 pages of trimmings. Then there are 400 pages of flora and 24 pages with references, index and abbreviations. These, together with 10 pages at the beginning, bring the book to 552 pages. It weighs 1.7 kg.

The flora is based on a rectangle (partly sea) spanning 70 km from east to west and 60 km from north to south. At the centre is the mountain massif of Pumlimon Fawr (752 m), source of the rivers Severn and Wye. Jeff and his family used to stay nearby in the lead-mining village of Dylife, where Alan Morton (of DMAP fame) and his wife Gerti had a holiday cottage. Systematic recording of bryophyte occurrence in quadrants (5 km squares) started in April 1983 and continued to the end of 2012. A few subsequent records (e.g. of *Tortula wilsonii*) were added while the flora was being written. Essentially, then, this was a 30-year project. During this time, processes for recording greatly improved, beginning with master cards for quadrants, from which records were laboriously transcribed to species cards, and ending with a Microsoft Access database from 2010. The project flagged during 2001-2003. Then it revived in 2004 when Sam Bosanquet and Arthur Chater began to make interesting new records. Indeed, Sam nearly became a co-author but was lured away by the national atlas,



published in 2014.

Mid-West Wales as defined here overlaps the area of several other local floras, notably North Wales (Hill, 1988), Radnorshire (Woods, 1993) and Brecknock (Woods, 2006). It is not far away from Carmarthenshire (Bosanquet, Graham & Motley, 2005) and Pembrokeshire (Bosanquet, 2010). Wales has been well recorded. Mid-West Wales is remarkably uniform in its geology, all but the extreme northwest being underlain by sedimentary mudrocks of Silurian and Ordovician age. In the extreme northwest is Cadair Idris (893 m), which contains the only large outcrops of calcareous rock—pillow lavas and dolerite—in the region. There is no limestone, and most of the mudrocks are very low in calcium, with the consequence that calcicolous bryophytes are remarkably rare. Many are confined to masonry, especially in the numerous old mines that are scattered across the region. *Gyroweisia tenuis* is confined to mortar of a disused lime kiln. *Anomodon viticulosus* was found twice in the 1970s and has not been seen since.

The species accounts are very full. Most of them start with notes on how to recognize their subject. The notes make no allowance for the novice's lack of vocabulary, and include words such as arcuate, fusiform, micronemata, perigynium and vaginula. Sometimes they are unnecessary, as for example with *Aloina rigida*, extinct for more than a century. Most, however, are very accessible, and will be helpful to beginners and improvers. Each species has

a map, showing occurrence in quadrants, with three date-classes: 1726-1949, 1950-1979, 1980-2014. All records of rarer species are listed, often several from a site over the years. Then the habitats are analysed, with commentaries on drought tolerance, calcium requirements and associated plants. Finally there are altitudinal limits, the first localized record, quadrant counts, hectad counts and a list of vice-counties.

Each of the Welsh local floras reflects the character and recording preferences of its author or authors. Jeff Bates tells us more about his inspiration and personality than the others. His enthusiasm shines through almost everywhere. Towns and villages, however, were relatively neglected. 'With so much attractive countryside available, little effort was made to record urban bryophytes.' This reflects his non-resident status, and the fact Dylife is up in the hills. His great enthusiasm is for bryophyte ecology, expounded in wonderful detail and with much insight. Habitat preferences for commoner species are given as a proportion of records. Thus 51% of records of *Racomitrium ericoides* are from made-up tracks, with just 12% from natural strips of shingle by rivers and lakes. By contrast, *Sphagnum papillosum* is a marker for the wilderness areas of Mid-West Wales. *Metzgeria consanguinea* and *M. violacea* were both recorded mainly from willow bark, but the next most popular trees were oak and birch (*M. consanguinea*) and elder and ash (*M. violacea*), reflecting the more calcicolous nature of the latter.

Records of sporophytes were less methodically kept than habitat details, at least for the commoner species. Thus there are only four records of capsules for *Frullania dilatata* and six for *Kindbergia praelonga*. Perianths and perichaetial leaves were never noted in *Chiloscyphus pallescens*. On the other hand, the process of capsule maturation in *Bryum capillare*

is described in some detail, and in *Entosthodon obtusus* capsules were noted in 10 out of 13 recent records.

The overall standard of production is good. A few of the 86 colour photographs of landscape and species have come out too dark. The text has a few minor misprints, and Jeff has invented a new word 'fragiliferous' to describe the leaves of a form of *Trichostomum brachydontium*. I was initially puzzled by *Drepanocladus hutchinsiae* (p. 105, a search-and-replace error for *D. aduncus*) and by *Cinclidium stygium* (p. 407, a Freudian slip for *Pseudobryum cinclidioides*). It was also frustrating not to know how many monitoring plots had been recorded by Des Callaghan on Cors Fochno, so that the presence of *Sphagnum tenellum* in 27 plots could not be converted to a frequency. These are minor blemishes in so large a work.

In summary, we have here a comprehensive guide to the bryophytes of Mid-West Wales, with a magisterial account of the habitats, climate and topography of the region. If you are visiting or living in the area, then it is essential reading. Even if you have little chance of getting there, you will find much to interest you, especially the notes on ecology and habitats.

References

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