

A GUIDE TO BRYOLOGICAL HOTSPOTS IN EUROPE

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2. The Rur Valley, Eifel Mountains, Germany

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The Rur valley is situated in the extreme west of Germany in the western part of the Eifel Mountains, close to the Belgian border. The Eifel mountains are in fact the continuation of the Belgian Ardennes to the East. They consist of palaeozoic sediments, mainly devonian schist. At the German-Belgian border, a kambrian saddle consisting of grauwacke rocks has been lifted up. The Rur originates in the Hautes Fagnes in Belgium, a large blanke bog area, and crosses the kambrian massif. Because of the difference in altitude between the uplifted hard kambrian rocks and soft, lower devonian rock, the stream cuts through the edge of the kambrian rock in a deep valley. This gorge was nature preserve and is now part of a LIFE project.

The altitude of the nature preserve is about 450 m. The climate is oceanic.

The valley is situated just south of the medieval town of Monschau along the road no. 258. Soon after the town, the road crosses the Rur. Right hand just before the bridge is access to a parking lot. There are trails on both sides of the stream, and bridges in 2 and 4 km distances from the parking lot. Topographical map 1: 25.000 no. 5403 Monschau.

The Rur valley harbours several interesting, mainly bryopyhtes. Most of the interesting species are aquatic species. Very obvious is the oceanic element, which is represented by species such as *Platyhypnidium lusitanicum*, *Hyocomium amoricum*, and *Isothecium holtii*. Other rare aquatic species include *Jungermannia cordifolia* ssp. *exsertifolia* und *Fontinalis squamosa*. Because of the high pH of the water (around 7), *Nardia compressa* is not found in the Rur but in streams nearby, where also *Fissidens celticus* is growing. The combination of so many rare species in one place is unique in the Eifel Mountains and makes this valley to a real hot spot, similarly to the Warche valley in Belgium.

Jungermannia exsertifolia subsp. *cordifolia*

This species grows abundantly submers on rocks. The abundance is in high contrast to its rarity in Germany. It is one of two known records. The other is in the Black Forest. The species has a closed range in Scandinavia and also in Scotland and must be regarded as boreal. As shown in a distribution map in Müller's *Liverworts of Europe*, it has many scattered isolated records through Central and South Europe. It can be supposed that these are relic populations from the last glaciation. Conspicuous is that here are many suitable habitats for *Jungermannia exsertifolia* in Germany, where the species is not found.

Isothecium holtii

This species has first been discovered 20 years ago by Belgian bryologists but has probably been overlooked in the past, because it resembles much *Thamnobryum alopecurum*, especially in shady places. It grows even together with the latter, slightly higher above the water level. The

species can be distinguished by more acute leaf tips (in the shape of *I. alopecuroides*), whereas *Thamnobryum* has more blunt leaf apices. In sunny places, *I. holtii* has a lustrous shine as opposed to *Thamnobryum*.

Isothecium holtii is distributed in the western part of Europe in England, Scotland, Ireland, southern Norway, the Massif Central and Brittany. It has in addition several disjunct occurrences here in the Eifel (the only place), two valleys in the Harz mountains and several records in the northern Black Forest. Molecular studies revealed, that these disjunct populations are not relicts from former more oceanic climatic periods but go back on recent dispersal events.

Hyocomium armoricum

This species has a similar distribution as *Isothecium holtii*, a closed range in western Europe and some disjunct populations in the oceanic mountains in Central Europe. In Germany it is also found in the Black Forest and the Harz but also in the Saarland. In the Eifel there are a few records in the western Eifel mountains beside the Rur valley.

Hyocomium armoricum is very similar to *Ctenidium molluscum* or dense forms of *Eurhynchium praelongum*. Like the latter, it grows beside streams, very distinctly just above the water level.

Platyhypnidium lusitanicum

Like *Isothecium holtii*, also this species has been discovered only recently in the Rur valley. It has been also found in the Saarland and the Vosges, where it has its easternmost limit. Its main range covers SW-Europe and Britain. It differs from the common *P. riparioides* macroscopically by densely foliate stems. Its taxonomic status has been doubted, however, there are mixed tufts in the Rur (in the cascade under the bridge at the begin of the valley), which clearly shows that it is a separate genotype. The bryoflora of the cascade is very rich, including *Fontinalis squamosa*, *Jungermannia exsertifolia*, and *Brachythecium rivulare* fo. *catarractarum*.

Beside the aquatic bryophytes, the bryoflora of the valley is very rich, including *Hookeria lucens*, *Trichocolea tomentella*, *Andreaea rothii*, *Schistostega osmundacea* and *Amphidium mougeotii*, amongst others. About 130 different species have been found so far.



Rur valley in November



Isoetecium holtii (above) and *Jungermannia exsertifolia* ssp. *cordifolia* (below)





Hyocomium armoricum (above) and *Platyhypnidium lusitanicum* (below)

