# 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 upliftet 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 aquastic 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 spedies in one place is unique in the Eifel Mountains and makes thsi 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 dicovered 20 years ago by Belgian bryologists but has probably been obverlooked 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 cute 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 Thamnobyrum.

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 relics from former more oceanic climatic periods but go back on recent dispersal events.

## Hyocomium armoricum

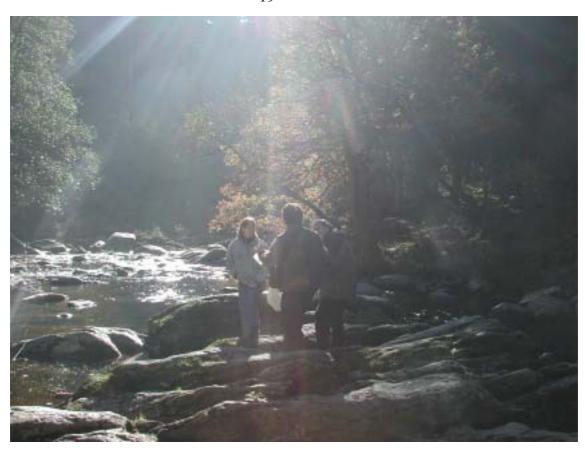
This species has a similar distribution as Isothecium holtii, a closed range in westwern Europe and some disjunct populations in the oceanic mountains in Central Europe. In Germany it is also found in the Black Forest and the Harz but also in the Saarland. In the Eifel there are a few records in the 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 atthe begin of the valley), which clearly shows that it is a separate genotype. The bryoflora of the c ascade 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



Isothecium holtii (above) and Jungermannia exsertifolia ssp. cordifolia (below)





 $Hy ocomium\ armoricum\ (above)\ and\ Platyhypnidium\ lusitanicum\ (below)$ 

