

“Field-trip to Herbstlabyrinth-Adventhöhle showcave”

By Simon Mischel¹

During the fieldtrip we will visit the showcave part of the Herbstlabyrinth-Adventhöhle cavesystem. The cave system lies in a small limestone area (3 km²) in Central Germany in the middle of the rhenish Slate Mountains (Fig. 1). The entrance of the cave is located at 435 m asl and the cave is 7 km long spread on three vertical levels (Fig. 2). The showcave was opened for the public in 2009 (Fig. 4) and it was the first European showcave with LED-lights (Dorsten 2010).

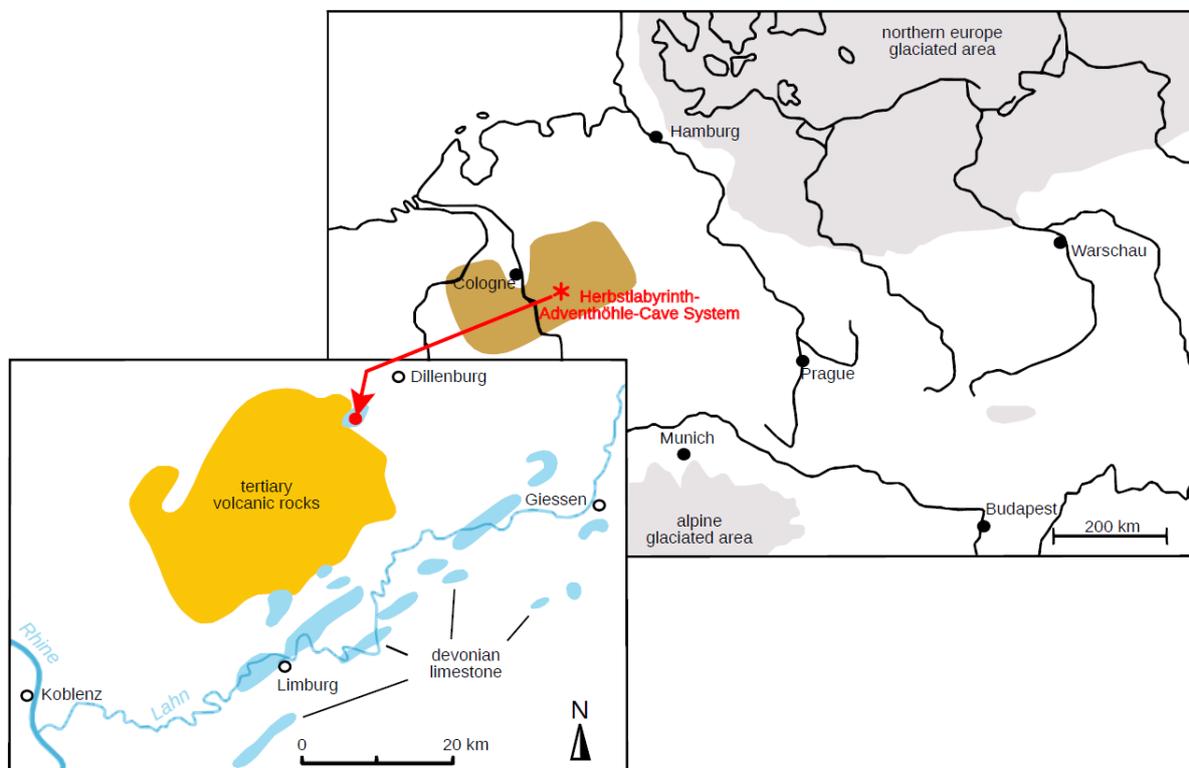


Figure 1: The location of the cave (Richter et al. 2011).

In the framework of a PhD an extensive, high-resolution cave monitoring program was installed 2010 by the Speleothem Research Group of the University of Mainz. Different geochemical parameters such as pH, EC, cations, anions and stable isotopes of the dripwaters are measured with a monthly. Furthermore, different automatic loggers measure relevant climate parameters such as precipitation, temperature and pCO₂ of the cave air. There are also 2 Holocene stalagmites sampled and analysed for trace element concentrations and stable isotope composition.

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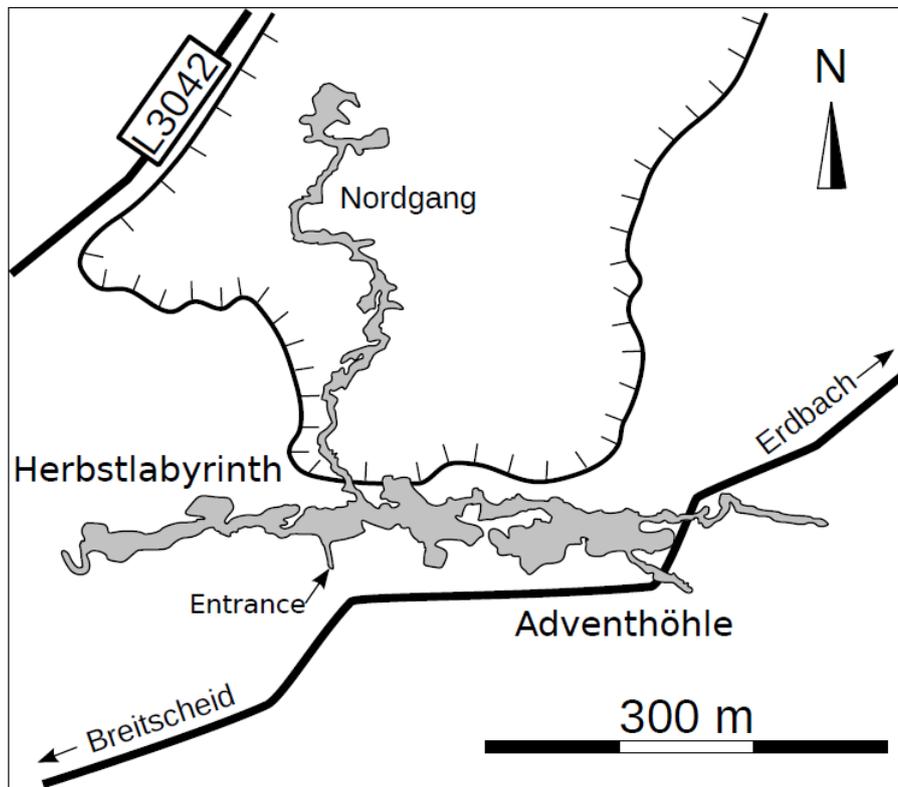


Figure 2: An overview map of the cave (Richter et al. 2011).

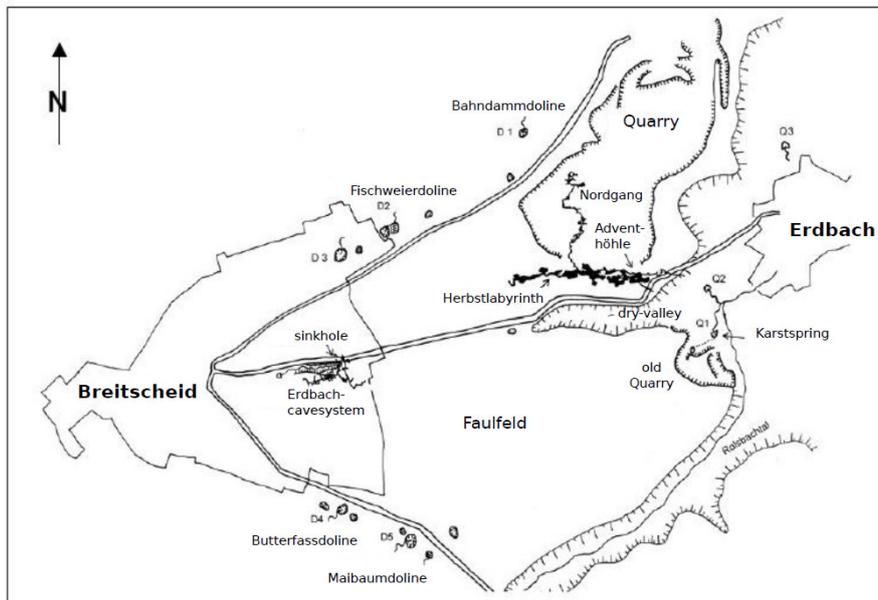


Figure 3: An overview map of the limestone area (Dorsten, unpubl.).



Figure 4: Inside the show cave, picture from www.zeitspruenge.de

Additionally to the visit of the cave, different karst formations of the limestone area can be visited, for example a sinkhole, which is near to the cave. Furthermore, many active dolines have formed where the volcanic rocks overlie the limestone (Fig. 3).

References

- Dorsten (2010): Wegebau und Lichttechnik - die hessische Schauhöhle Herbstlabyrinth setzt Maßstäbe - Mitteilungen des Verbandes der deutschen Höhlen- und Karstforscher e.V. 56(1), 13 - 18.
- Richter, D. K. et al. (2011): Zerbrochene Höhlensinter und Kryocalcite als Indikatoren für eiszeitlichen Permafrost im Herbstlabyrinth-Adventhöhle- System bei Breitscheid-Erdbach (N-Hessen). - Die Höhle 62/1-4.