

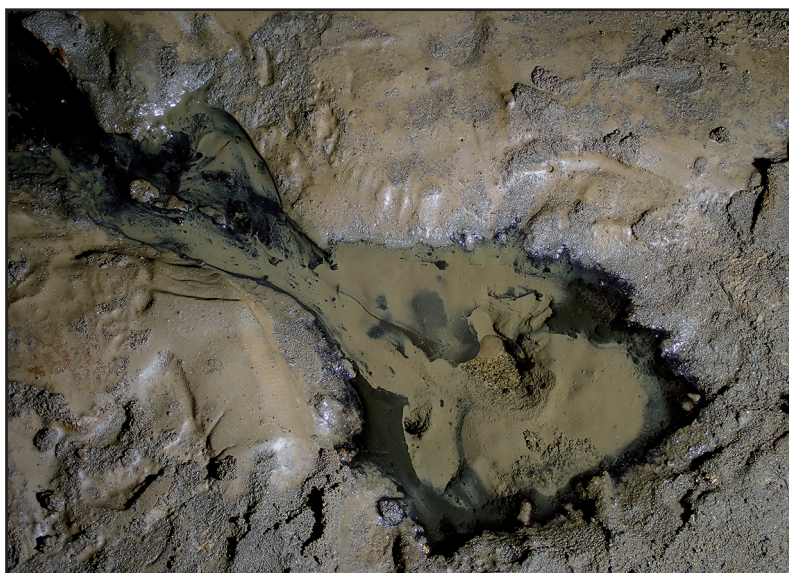
Photo Feature

A strange ‘spring’ and associated biofilm, Block Hall, Speedwell Cavern, Derbyshire, UK

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Photograph 1.



Photograph 2.



Photograph 3.

Block Hall in Speedwell Cavern, Castleton, is best known as a 95m-high vein cavity (e.g. Ford, 2000, p.9), with a low passage near its top that provides access to the White River Series in Peak Cavern. When ascending towards, or descending from, the connecting passage, many cavers walk across a bank of sediment that forms the floor of the vein cavity. While doing so, most of them are unaware that the sediment bank contains the only feature yet described within the entirety of the Peak–Speedwell cavern system that is unique in the strictest sense of that term – i.e., it is the *only example of its kind yet observed*.

Photo 1 shows the sediment mound, with the caver in the left foreground sampling water that emerges under pressure at the top of the pile. The flow is sufficiently strong to maintain the pool and to agitate, but not transport, grains of sand-grade sediment, as shown in greater detail in Photo 2. The source of the water is unclear, because there are no higher-elevation flows into the sediment mound. Watt Passage crosses above the sediment pile but is around 90m higher and separated from it by solid limestone. Accumulated percolation water flows down the western wall of Block Hall but joins the flow at its downstream end, behind the caver on the right of Photo 1. The flow from the centre of the sediment mound has formed a well-defined channel (left of the caver on Photo 1) that trends down a gentle slope towards the southern wall of the vein-cavity, ignoring the steeper gradient to the right of the caver. Within the channel there is a black biofilm and at the bottom of the mud bank the water forms a pool, within which an orange, jelly-like, biofilm is found growing in large quantities (Photos 3 and 4). As yet it is unclear why the biofilms are found in this particular spot, and why no biofilms of similar type have been noted anywhere else in the Peak–Speedwell system to date.

Currently the biofilms are being studied by Jo White, as part of her PhD research at the University of Huddersfield. Results will be reported in a future issue of CaKS.

Reference

Ford, T D, 2000. Vein cavities: an early stage in the evolution of the Castleton Caves, Derbyshire, UK. *Cave and Karst Science*, Vol.27(1), 5–14.



Photograph 4: the lower part of the Block Hall vein cavity, with orange-biofilm on the floor (see also photos 1 and 3).