



The caves of Giggleswick Scar, North Yorkshire.

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BCRA Field Meeting
The caves of Giggleswick Scar,
North Yorkshire
22 October 2017

On Sunday 22 October 2017, the day following the 28th BCRA Cave Science Symposium at the University of Leeds, 17 members met at a lay-by on the B6480 road, to visit the caves of Giggleswick Scar under the leadership of Trevor Faulkner, with assistance from Tom Lord. The purposes of the trip were to assess the caves as possible products of deglacial speleogenesis, and to report on the archaeological/palaeontological finds. Although it was wet and/or windy throughout the duration of the excursion, there was no shortage of enthusiasm amongst the assembled group.

Giggleswick Scar, together with the adjacent more northerly Common Scars, consists of a ~4km length of the South Craven Fault on the northern side of the B6480 to the north and northwest of the towns of Giggleswick and Settle. These fault-scarp features form a conspicuous cliffed slope, rising to a maximum of 130m above the road, in limestones of the Malham Formation (Dinantian) that here dip southwestwards at ~6°. The scars delimit part of the southern margin of the Askrigg Block, and their prominence is in part a function of repeated episodes of glacial erosion during the Pleistocene. Several relict caves and rock shelters are present along the scars and these are described in detail by Murphy *et al.* (2015). Sediments from some of the sites have yielded archaeological and palaeontological materials that have provided valuable insights into regional Late Glacial and Holocene faunal assemblages and human activities (Lord *et al.*, 2007; Lord and Howard, 2013; O'Connor and Lord, 2013).

First to be visited were some of the rock shelters on Common Scars, each of which bears the name Cave Ha, followed by a number. At the largest of the rock shelters, the highly impressive Cave Ha 1 (Photo 1), Trevor pointed out wall scallops and attributed them to dissolution by aggressive meltwater flowing between the cliff and an adjacent ice margin. Tufa coatings and projecting beds of limestone were also discussed, with the latter being considered as possible evidence of neotectonic movement consequent on glacial unloading. The party also had the good fortune to observe a substantial flow of water falling from the domed roof of Cave Ha 1 – an event that had not previously been witnessed by either Trevor or Tom during their previous site visits.

Tom then explained that Thomas McKenny Hughes had undertaken a major excavation at Cave Ha 1 during the 1870s (Hughes, 1874). Hughes had previously visited Palaeolithic cave sites in the Dordogne with Charles Lyell, and Cave Ha's superficial resemblance to Dordogne rock-shelter sites could have raised Hughes expectations of making similar discoveries at Cave Ha 1. However, despite an extensive and, for the time, thorough investigation, cultural material was sparse; the earliest evidence consisting of possible Neolithic pottery and undiagnostic lithics. An abundant small mammal assemblage in deposits near to the surface was attributed to prey remains from raptor pellets voided by owls sheltering beneath the roof.

The smaller Cave Ha 3 rock-shelter underwent extensive excavations by members of the British Speleological Association in the 1940s and 1950s. Re-analysis of the excavation records and finds has revealed that during the Early Neolithic activities here spanned several centuries with animal bone processing and deposition (Lord and Howard 2013; Keenan, 2014) preceding phases of mortuary activity and deposition (Leach, 2008, 2015). Direct AMS radiocarbon dates on bones of domestic cattle and sheep reveal the presence of these domesticates in the Yorkshire Dales by ~3800 BC.

The party then traversed to Cave Ha 4, a steep-sided ravine occupied by breakdown blocks. A dry wind-gap at its head (Photo 2) was proposed by Trevor as the overflow point from an ice-dammed lake. This jökulhlaup flood was regarded as responsible for cutting the ravine. The bed of the former lake, now a dry valley, was then followed back to the cars.

For the second part of the excursion the cars were moved a short distance to Buckhaw Brow, from where a rising traverse enabled some of the upper caves of Giggleswick Scar to be visited.



Photo 1:
 The Cave Ha 1 rock shelter, photographed on a previous fieldtrip under far better weather conditions.



Photo 2: The wet, bedraggled but enthusiastic group at the wind gap above Cave Ha 4.

At Gully Cave, Trevor accounted for the impressive rising chimney with cupolas above the entrance by invoking dissolutional flow upwards into a moulin when ice covered the site. At Kinsey Cave the phreatic roof with shallow scallops was noted, as was a prominent bedding-plane edge above the entrance. As at Cave Ha, this latter feature was attributed to neotectonic displacement during and/or after deglaciation.

Large-scale excavations at Kinsey Cave during the 1920s and 1930s encountered Late Glacial and Holocene cultural and faunal evidence (Lord *et al.*, 2007). The surviving archive is the subject of ongoing re-analysis (Keenan, 2014 and references therein). The cave is especially significant for evidence of Late Glacial human presence (Lord, 2013), the preservation of ancient DNA in Late Glacial Interstadial brown bear bones (Photo 3) (Edwards *et al.*, 2014) and the youngest AMS radiocarbon-dated lynx bone (~6th century AD) from anywhere in Britain (Hetherington *et al.*, 2006). The results of a recent excavation led by Tim Taylor are so far available only in an unpublished report to English Heritage (Taylor *et al.*, 2006).

The inclement weather dictated that the lunch break be taken in the comfort of the cars and, following this refuelling stop, the third and final part of the excursion began at the entrance to Giggleswick Quarry. The footpath along the eastern side of the quarry was followed to a point that afforded a good view across and into the inactive quarry. Here, Trevor spoke about phreatic cave passageways that, over the years, had been truncated by quarrying. The presence of these

caves, deep within the limestone, could indicate that they are substantially older than the caves and rock shelters visited earlier in the day.

The final caves of the day were Lesser and Greater Kelco, at the southeastern end of the Scar. With a length of 121m the latter cave is the longest of those on Giggleswick Scar and has an impressive tall (9m-high) and narrow (1.5m-wide) entrance, though in part, the dimensions reflect enlargement by excavation.

Poorly documented excavations took place at Greater Kelco during the mid-nineteenth century. The entrance was altered when the landowner added a flight of steps during landscaping the surrounding woodland. During the 1930s further excavations, supported by Dr J Wilfred Jackson of the Manchester Museum, revealed that the surviving deposits were by then greatly disturbed.



Photo 3: Skull of Late Glacial brown bear from Kinsey Cave.



Photo 4: Greater Kelco Cave, Giggleswick Scar.

Fragments of Neolithic pottery were recovered, mixed with a medley of Romano-British artefacts. Recent AMS dating has confirmed the presence of Early Neolithic human skeletal material (Lord and Howard, 2013). Other than an AMS-dated Late Glacial bear canine (Edwards *et al.*, 2014), which may have been redeposited much later, there are no finds indicative of human or animal activity before the Early Neolithic. It is possible that older deposits in the cave were re-worked and even flushed out during flood phases associated with abrupt climatic events in the Early Holocene.

The smaller Lesser Kelco Cave was almost entirely excavated during the 1930s. Photographs show that the investigators used coarse garden sieves to assist in the recovery of small finds; similar sieves were also used during the 1930s work at Greater Kelco Cave. Fragments of Neolithic pottery were recovered but, unlike at Greater Kelco, Romano-British objects were scarce. Recent work by Leach (2008, 2015) suggests that during the Early Neolithic the cave was the focus for the selective deposition of human skulls, in marked contrast to the more complete Early Neolithic human placed in Greater Kelco Cave and the Cave Ha 3 rock shelter. The absence of materials demonstrably older than the Neolithic in Lesser Kelco Cave again raises the possibility of reworking of sediments by Early Holocene flood events.

Before returning to the cars Peter Wilson proposed a vote of thanks to both Trevor and Tom for leading a fascinating field trip that demonstrated that even small caves and their contents within a restricted geographical area have much to offer but are not always easy to explain.

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Peter Wilson and Tom Lord

BCRA Field Meeting
The
Greenhow Hill and Appletreewick area,
Yorkshire
22 October 2017

The Greenhow area to the east of Grassington is positioned on the Craven Fault zone, which forms the southern boundary of the Askrigg Block. It differs from other areas in the Yorkshire Dales in that the area also forms part of the Ribblesdale fold belt, so the limestone has been folded into a series of anticlines. The area is mineralized and has a long history of mining, first for lead and later for fluorite. Limestone quarrying is still active at Coldstones. Despite its fascinating geology the area is commonly overlooked in the literature.

The field trip, which took place the day after the 28th BCRA Cave Science Symposium in Leeds, was led by Phil Murphy. Thirteen field trip participants first visited the Gillfield Level (Photo 1), a drainage level driven during the 1780s through the northern flank of the most easterly of the area's anticlinal folds. The level passes through the overlying shale and sandstone succession before reaching the limestone and the mine workings on Waterhole Vein. The level is maintained by the Greenhow Local History Club, whose hard work in maintaining access to this fascinating piece of the region's history is witnessed by the timber supports passed on the way in. After a thorough exploration and discussion a return to the wild and windy surface was followed by a lunch stop at the Stump Cross Caverns show cave café.



Photo 1: Climbing a fixed ladder in the Waterhole Vein stopes area reached by way of the Gillfield Level.