
Lud's Church, North Staffordshire

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Introduction

Lud's Church is a vertical fissure in Roaches Grit (Namurian R₂b; C.M. Jones, 1980). It lies on a north-facing slope in Back Forest, overlooking the River Dane, in the Staffordshire moorlands 10 km to the north of Leek (Figure 5.23).

Description

The Lud's Church fissure is remarkable for its size: it measures about 165 m from end to end, and including all its side passages its length totals 220 m. For much of its length it is 4–5 m wide, and up to 18 m deep (Figure 5.23) and (Figure 5.24).

Associated with the fissure are hillside trenches and their associated intervening ridges ('ridge-and-trough' features) and a curious tor known as 'Castle Cliff Rocks'. This is sited 70 m from the fissure, and at a similar position about halfway down the slope. It rises 4 m above the surrounding soil surface. Its location on the slope is unusual in the Pennines (Palmer and Radley, 1961) and probably relates to its position on the surface of a slipped mass. There is a short steeper section upslope from Lud's Church, which could be interpreted as the degraded upper part of a landslip scar, but there is no trace of a toe farther downslope. These factors suggest that the slip which opened the Lud's Church fissure may be of some antiquity, perhaps immediately post-glacial. The toe may coincide with the river bed or bank, and material pushed forward may have been washed away by the stream, or may have diverted the stream northwards into its present northward-arc course (Figure 5.23).

Interpretation

Lud's Church was described by Hull and Green (1866), who noted that 'it gives the idea that the front of the hill has parted bodily from the main mass, and slipped a little forward, leaving this fissure along the line of fracture', (if this is correct the fissure is a tension crack or 'gull' marking the backscar of a landslide). More recently Millward and Robinson (1975) ascribed its origins to post-glacial incision of the River Dane. Lud's Church appears to have been formed as a result of the detachment of a large sliding mass as it began to move valley-ward over a possibly irregularly shaped slip-plane. The possible backface scar on the slope profile suggests that the Lud's Church fissure may be within the slipped mass, both of its walls having moved with the main slipped mass, followed or accompanied by a more surficial movement (at least 18 m thick) as the fissure opened. Cooper *et al.* (1977) noted the presence within it of fissures that are roofed-over by fallen boulders, forming covered tunnels up to 12 m deep.

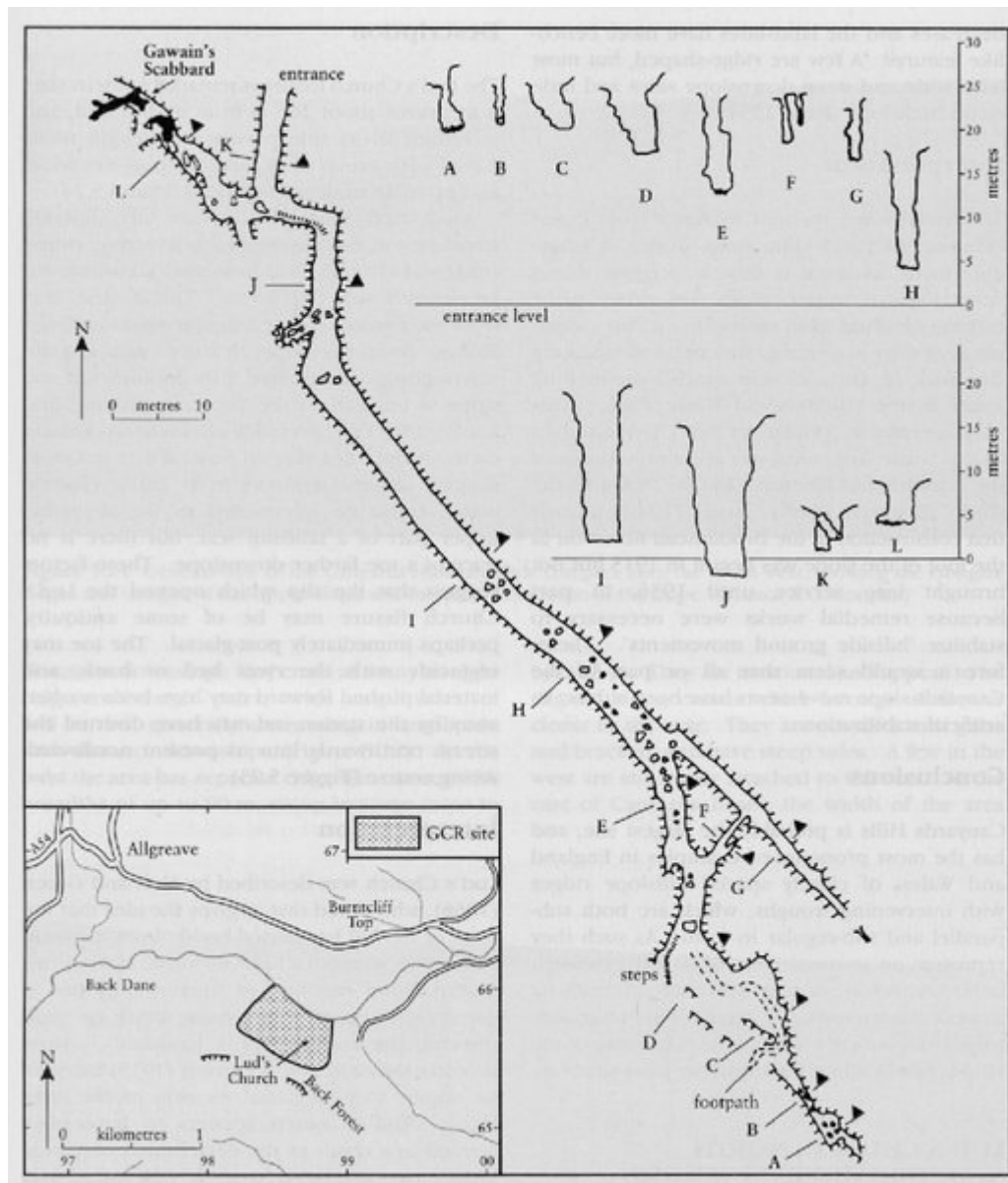
Aitkenhead *et al.* (1985) describe it as 'a spectacular example in sandstone, of bedding-plane slip, which is common in major sandstone units and in mudstone-with-sandstone sequences.' However, there is no feature lower down the same slope corresponding to the lower end of the mass which has slipped on the bedding plane. While Aitkenhead *et al.* (1985) seem to describe an essentially translational movement, it is uncertain whether the main movement, which opened the Lud's Church fissure, was translational, or whether material within a rotationally upper mass involving the whole of the slope from crest to stream, underwent a small translational movement equal to the width of Lud's Church.

Elliott's (1977) meticulous identification of Lud's Church with the 'Green Chapel' of the medieval alliterative poem *Sir Gawain and the Green Knight* (Tolkien and Gordon, 1967; Stone, 1974) may provide some indication concerning its age. The unknown *Gawain-poet* wrote in a north Midlands dialect which has been identified as late 14th century. It may be concluded, tentatively, that the Lud's Church fissure was both open, and wide enough to allow axe-swinging men to fight in, more than six hundred years ago.

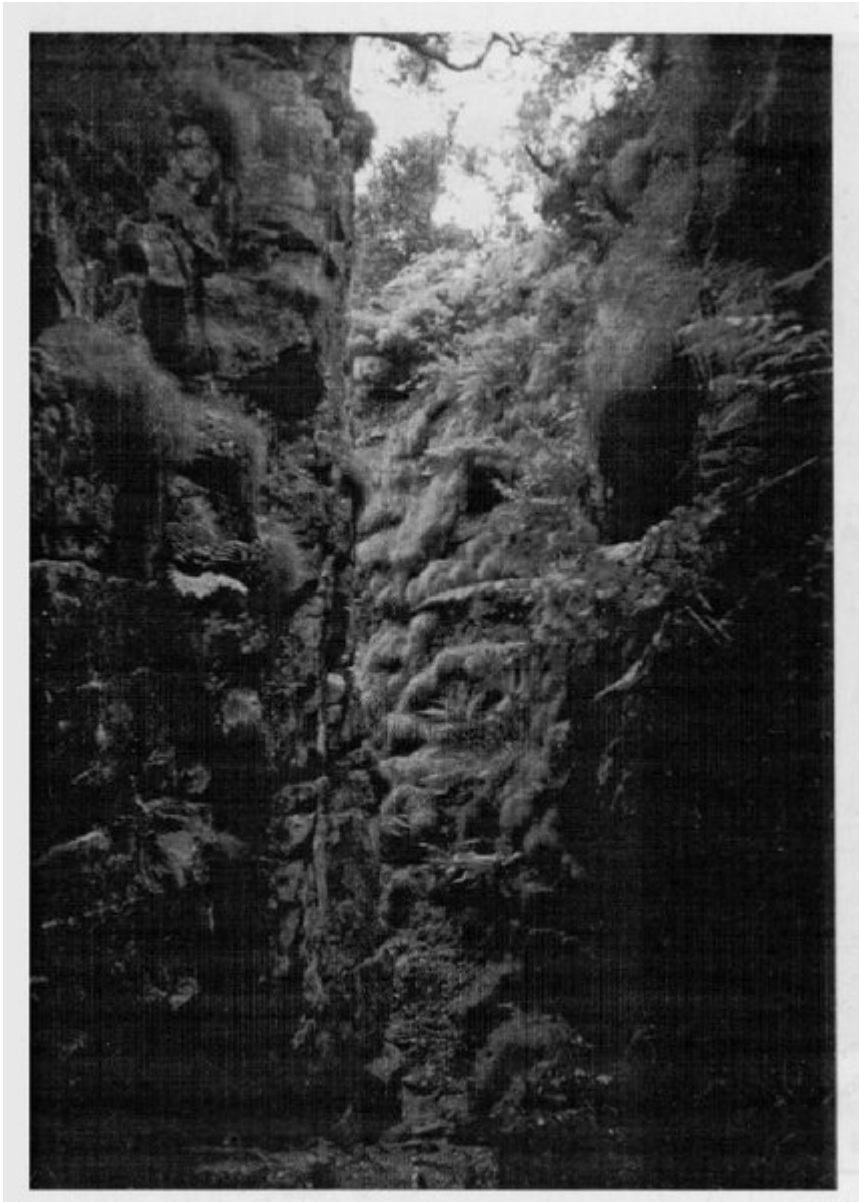
Conclusions

Lud's Church is of educational importance because of the unique opportunity it provides to walk on a reasonably easy footpath through the interior of a large-scale 'detaching' landslide, and examine it from within. It is by far the largest such fissure within a landslipped mass in Great Britain, and may be the best example of a 'rock labyrinth' or 'lattice' structure formed by unloading.

References



(Figure 5.23) The location and general morphology of Lud's Church, Staffordshire.



(Figure 5.24) View along the 'labyrinth' of the Lud's Church fissure. (Photo: R.G. Cooper.)