

FURTHER NOTES ON MASS MOVEMENT CAVES IN NORTHERN ENGLAND

by

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ABSTRACT

Further occurrences and possible occurrences of mass movement caves in northern England in addition to those described in Murphy and Cordingley, 2010 are listed and described.

INTRODUCTION

Since the publication of a summary of mass movement cave occurrences north of the Peak District National Park (Murphy and Cordingley, 2010) a number of further such occurrences and possible occurrences have been brought to the author's attention. These are listed below in the same format as Murphy and Cordingley (2010).

CAVES IN CARBONIFEROUS STRATA

Northumberland

High Cove NY 953 958

A reinvestigation of this site which is only very briefly mentioned in Brook *et al.* (1988) and Murphy and Cordingley (2010) has identified eight caves with a total passage length of over 100m including 13 m long and 3 m deep Fools Cave (Scaife, 2015).

Morecambe Bay:

Ravens Cave (Whitbarrow) SD 4573 8510

This is a 5.5 m long rift, high up in the scar south of Whitbarrow. It is "probably a modified slip cave" (Holland, 1967 p57). The description given by Brook *et al.* (1994) p277 "Single high, narrow rift." would fit with a mass movement origin.

White Scar Cave (Whitbarrow) SD 4593 8526

Entrance high up in the scar. "...appears to be a slip cave" (Holland, 1967 p56). The lack of detailed description and dimensions suggests it was not entered by Holland. There is no corresponding entry in Brook *et al.* 1994.

Yorkshire Dales:

Kilmonds Cave NZ 023 135

An 18 m long cave in a disused quarry. “...might be of purely tectonic origin” (Ryder and Harrison, 2015).

Ackrey Gill Cave SD 820 951

A 240 m long rift is a narrow stream cave which runs parallel to the hillside. (Heys, 1967; Harrison and Ryder, 2014). A fractured chert nodule has a gap of 50 mm between opposing faces showing the scale of mechanical opening of the fissure prior to dissolutional enlargement. Perhaps the initial movement was due to stress relief where the outer block of limestone has moved towards the valley. Such a process could be significant in other caves which parallel the valley sides.

Hardraw Force, Hardraw Beck, Wensleydale. SD 868 915

Harrison and Ryder (2014) mention the occurrence of small slip rift caves in the crags adjacent to the waterfall.

Penyghent Side Cave SD 837 743

An 18 m long straight fissure behind face of the scar (Brook, *et al.* 1991). This cave is found in the Main Limestone of the Yoredale Group.

Dowbergill Passage (Wharfedale). Providence Pot SD 992 728, Dow Cave SD 983 743

This passage is a vertical rift, 10-25 m high and rarely more than 1 m wide. Wedged blocks create false floors which make route finding rather difficult. The two dimensional complexity of the passage makes traversing it a physically demanding caving trip in addition to the navigation problems and has caused many rescues over the years (UWFRA, 1998). The passage lies beneath the overlying impermeable Yoredale Group clastic beds. The fracture may have originated as a strike slip fault (Long, 2015) though subsequent modification of the walls by flowing water make recognition of relative displacement difficult and a joint controlled origin was suggested by Waltham *et al.* (1997). An initial opening of the fracture by de-stressing, possibly after glacial retreat has been suggested by Waltham *et al.* (1997) prior to vadose incision. If this is the case then mass movement may also have played an early role in the formation of other joint/fault aligned passages in the area. The rift has captured the drainage of Providence Beck and the base of the passage is now graded to Dow Cave, passing beneath an interfluvium.

Great Close Scar Cave SD 900 668

A fissure cave 15 m long ascends and rounds several bends to end against a blank wall (Brook, *et al.* 1991). It is situated in Great Gully, a feature which splits the crag into two sections. The whole southern buttress of the scar appears to have moved away from the hillside

Saddleworth Moor:

A detailed guide to the caves of the Saddleworth area (Fairy Holes, Twin Shafts, Diggle Wigglepit and Warm Holes) including a comprehensive account of the history of exploration has been published by Halliwell (2016).

CAVES IN TRIASSIC STRATA

Pattering Holes Cave NX 9536 1192

This is a 15 m long cave close to the sea cliffs of St Bees Head (Murphy, 2013).

CAVES IN JURASSIC STRATA

MSG Hole SE 5355 8683

Cave exploration continues in the classic area of the North York Moors and includes the discovery of the 300 m long and 30 m deep Mr Sparkler's Glory Hole (also known as MSG Hole). A detailed account of the discovery and exploration of this extensive and challenging, though unfortunately now sealed off, mass movement cave system, is given in Ewles and Douthwaite (2014) along with accounts of a number of minor mass movement caves.

Xenophobia Hole SE 5826 9848

This 40 m long mass movement cave includes a 6 m long, 5 m wide and 7 m high chamber (Scaife, 2015a).

CONCLUSIONS

The mass movement caves listed here increase both the number and geographic range of such caves known north of the Peak District National Park.

The importance of mass movement processes in the formation of Ackrey Gill Cave and possibly Dowbergill Passage may indicate such processes could be an under-appreciated factor in the early development of other caves in the Yorkshire Dales karst.

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