

# Melmerby Scar Limestone Formation

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## Melmerby Scar Limestone Formation ([LSBU](#)), Carboniferous, Northern England Province

Melmerby Scar Limestone Formation is part of the [Great Scar Limestone Group](#)

### Name

The name is derived from the Melmerby Scar on the Alston Block.

### Lithology

See Dunham (1990)<sup>[1]</sup>. The formation comprises distinctive lower and upper parts. The lower part, the Melmerby Scar Limestone, comprises grey, thick bedded limestone with generally thin calcareous mudstone partings. These apparently pass northward into two or three rhythmic units including clastics as well as limestone in the Brampton district and Northumberland Trough. The upper part of the formation comprises the Robinson Limestone, which consists of alternations of shale, sandstone and limestone.

### Genetic interpretation

Marine platform

### Stratotype

The type area is the Pennine escarpment above Melmerby. Natural sections in the formation occur along the Melmerby Scar escarpment at, for example, Longfell, Scoredale, Dufton Fell and Blencarn Beck (see Dunham, 1990)<sup>[1]</sup>, and also in boreholes as at Roddymoor and Emma Pit (BGS Registration Number NZ13NE/146) (NZ 1513 3635) and Rookhope (BGS Registration Number NY94SW/1) (NY

9375 4278), the depth range in the latter being from about 344 to 379 m.

## Lower and upper boundaries

The base of the formation is unconformable on the conglomerates of the Marsett Formation, Ravenstonedale Group (Figure 9, Column 15; Figure 15, Column 1).

At the top of the formation there is evidence of penecontemporaneous erosion and pot-holing at the top of the Robinson Limestone (RNL). This surface is overlain unconformably by siltstone or sandstone of the Tyne Limestone Formation, Yoredale Group.

## Thickness

The Melmerby Scar Limestone ranges in thickness from 35–107 m. The Robinson Limestone is normally 4–6 m thick, but in Augill Beck (approaching the Stainmore Trough) it is 25 m thick.

## Distribution and regional correlation

Alston Block.

## Age and biostratigraphical characterisation

Asbian. The equivalent of Garwood's (1913)<sup>[2]</sup> 'Bryozoa Band', encountered in the Garsdale Limestone Formation of the Askrigg Block, also occurs near the base of the Melmerby Scar Limestone Formation (Turner, 1927). The late Asbian Cf6δ Subzone foraminifers *Bradyina rotula* and *Endothyranopsis crassa*, and alga *Ungdarella uralica*, are examples of those recovered from the Melmerby Scar Limestone Formation in the Rookhope Borehole (see above) (Cozar and Somerville, 2004).

## References

- <sup>[1]</sup> Dunham, K C. 1990. Geology of The Northern Pennine Orefield: Volume 1, Tyne to Stainmore (2nd edition). *Economic Memoir of the British Geological Survey*, Sheets 19 and 25, parts 13, 24, 26, 31 and 32 (England and Wales).
- <sup>[2]</sup> Garwood, E J. 1913. The Lower Carboniferous succession in the north-west of England. *Quarterly Journal of the Geological Society*, Vol. 68, 449–596.

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