

Malham Formation

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Malham Formation (**MALM**), Carboniferous, Northern England Province

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

Name

See Arthurton et al. (1988^[1]) and Mundy and Arthurton (1980^[2]). Malham Cove (SD 8975 6411) occurs in Yorkshire near the village of Malham, east of Settle.

Lithology

The formation includes massive- to weakly bedded, pale grey to very pale grey, medium- to coarse-grained calcarenite packstones and grainstones, and well bedded, thick- to very thick-bedded, mid-pale to very pale grey, calcarenite packstones, wackestones and subordinate grainstones.

Genetic interpretation

Limestone deposition on a rimmed marine shelf. The Cove Limestone Member in shallow water well within fair-weather wave-base, and the Goredale Limestone Member in cyclical shallow water with emergent episodes (see Cossey and Adams, fig. 5.21 in Cossey et al., 2004^[3]).

Stratotype

Partial type sections occur at Malham Cove (SD 8975 6411), North Yorkshire, where 72 m of the upper part of the Cove Limestone Member, including the top, is present, and at Gordale Scar (SD 913 640) where the complete thickness (94 m) of the Gordale Limestone Member, including its top and base, is seen. See Arthurton et al. (1988^[1]).

Lower and upper boundaries

The lower boundary of the formation is drawn at the base of the pale grey limestone of the Cove Limestone Member where it rests conformably (but gradationally and slightly diachronously) on the mid-dark grey limestone of the Scaleber Quarry Limestone Member, Kilnsey Formation (Figure 15, Column 6), or locally, unconformably on Lower Palaeozoic strata.

The conformable upper boundary of the formation is drawn at the upward passage from pale grey limestone of the Gordale Limestone Member to darker grey limestone of the Lower Hawes Limestone at the base of the Alston Formation, Yoredale Group. However, in the Cominco S11 Borehole (BGS Registration Number SD86SE/5) (SD 8590 6340) the upper boundary of what is probably the Malham Formation is unconformable beneath the Bowland Shale Formation, Craven Group.

Thickness

The thickness of the formation ranges from about 220 m south of the Middle Craven Fault, to about 140 m north of the North Craven Fault.

Distribution

Southern part of the Askrigg Block, north of Settle (SD 77 to 97).

Age

Holkerian to Asbian

Formal subdivisions

See also Appendix 1. Members of the Malham Formation in ascending stratigraphical order include:

[Cove Limestone Member](#)

[Gordale Limestone Member](#)

References

1. ↑ ¹⁰ ¹¹ Arthurton, R S, Johnson, E W, and Mundy, D J C.1988.Geology of the Country around Settle.*Memoir of the British Geological Survey*, Sheet 60 (England and Wales).
2. ↑ Mundy, D J C, and Arthurton, R S.1980.Field meetings: Settle and Flasby.*Proceedings of the Yorkshire Geological Society*, Vol. 43, 32-36.
3. ↑ Cossey, P J, Adams, A E, Purnell, M A, Whiteley, M J, Whyte, M A, and Wright, V P.2004.British Lower Carboniferous stratigraphy.*Geological Conservation Review Series*, No 29. (Peterborough: Joint Nature Conservation Committee.)

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