

Penny Farm Gill Formation

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Penny Farm Gill Formation (**PFD**), Carboniferous, Northern England Province

Penny Farm Gill Formation is part of the [Ravenstonedale Group](#)

Name

The name is derived from Penny Farm Gill, Askrigg Block. The original name 'Penny Farm Gill Dolomite Formation' was proposed by Burgess (1986, p. 6^[1]).

Lithology

The Penny Farm Gill Formation comprises interbedded limestone, dolostone, sandstone and siltstone, commonly rhythmically bedded.

Genetic interpretation

The strata were deposited within a shallow marine, intertidal and supratidal environment, marginal to the more open marine conditions in the Stainmore Trough at the time.

Stratotype

Partial type sections include the lowest 17 m of the formation seen in Nor Gill (SD 698 933) in a sequence that comprises mainly sandstones, silty limestones and siltstones; and the succeeding 35 m of beds, which are well seen in the inlier at Penny Farm Gill (SD 698 932), where the sequence comprises sandy and micritic dolostones, siltstone with dolostone beds (not exposed, but suggested by debris), and sandy limestones with interbedded dolostones (Burgess, 1986, pp. 6-7^[1]; see also Dunham and Wilson, 1985, p. 26^[2]). The formation also occurs in the Raydale Borehole (BGS Registration Number SD98SW/1) (SD 9026 8474) from about 350 to 406 m depth (see Dunham and Wilson, 1985, and references therein^[2]).

Lower and upper boundaries

The formation overlies contiguously the conglomeratic Marsett Formation.

The top of the Penny Farm Gill Formation is marked locally by a nodular dolostone bed with rhizoliths that is indicative of emergence (Burgess, 1986^[1]). The biosparites of the Tom Croft Limestone Formation (Great Scar Limestone Group) disconformably overlie the formation (Figure.9, Column 17; Figure 15, Column 3).

Thickness

According to Dunham and Wilson (1985)^[2] the formation is 50.6 m thick in the Penny Farm Gill inlier, and about 56 m thick in the Raydale Borehole (see above).

Distribution and regional correlation

Askrigg Block.

Age and biostratigraphical characterisation

The formation has a limited fauna of bivalves, gastropods, the brachiopod *Rhynchonella fawcettensis*, and ostracods. However, a miospore assemblage from the formation has been assigned to the (Chadian to Arundian) Pu Zone, although the presence of *Knoxisporites stephanephorus* suggests an Arundian to early Holkerian age TS Zone (Burgess, 1986^[1])

References

- ↑ ^[1.0 1.1 1.2 1.3] Burgess, I C.1986.Lower Carboniferous sections in the Sedbergh district, Cumbria.*Transactions of the Leeds Geological Association*, Vol. 11, 1-23
- ↑ ^[2.0 2.1 2.2] Dunham, K C, and Wilson, A A.1985.Geology of the Northern Pennine Orefield: Volume 2, Stainmore to Craven.*Economic Memoir of the British Geological Survey*, Sheets 40, 41 and 50, parts 31, 32, 51, 60 and 61(England and Wales)

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