

Field Meeting Report: Carboniferous Limestone of Clwyd, led by Robin C. Bathurst 12th April 1987

Sue Gibson¹

GIBSON, S. (1988). Field Meeting Report: Carboniferous Limestone of Clwyd, led by Robin C. Bathurst 12th April 1987. *Proceedings of the Shropshire Geological Society*, 7, 6–7. The purpose of the field meeting was to visit the Carboniferous Limestone exposures of Clwyd and to relate their sedimentary structures to their formation.

¹affiliation: Member of the Shropshire Geological Society

INTRODUCTION

The object of the day was to compare several outcrops of the Carboniferous Limestone and to relate their structures to their formation.

ITINERARY

LOCALITY 1: Little Ormes Head

The main part of the morning was spent on and around Little Ormes Head on the North Wales coast.

At Grid SH 819 825 a small bioherm was exposed. The limestone was originally deposited as a mud mound in a shelf sea area. The bioherm was unstratified and contains numerous fossils including giant 'Productids'. The lack of stratification indicates the growth of this feature was in a very still, shallow sea where fine calcareous muds could be trapped by the growth of algae and corals.

Immediately around the bioherm bedding planes were clearly visible, suggesting that currents operated in the area of formation at a later date. These beds appeared to be draped over the bioherm. Small bivalves with geopetal structures suggested that these beds had formed in this position. Also found in these beds were some stylolites - pressure solution structures in limestones.

A nearby quarry showed very clear bedding planes, and some interesting breccias. The latter were formed of chert but had been recemented, virtually without any movement at all. There is a problem regarding the origin of these beds and their relationships.

LOCALITY 2: Holywell

The second part of the day was spent to the south of Holywell (Figure 1).

At 792125 [*sic.* – the grid reference is probably SJ 192 725; Ed.] roadside exposures of well bedded limestones had enormous numbers of crinoid stems in them, many up to a centimetre across. In places it was possible to see some orientation of the stems by currents, indicating a death assemblage of these fossils. Again these beds must have been formed in shelf seas where active deposition and sorting was taking place.

Nearby, at 789131 [*sic.* – the grid reference is probably SJ 189 731; Ed.] was the final stop of the day, in a large quarry. Here the limestone was more massive, but crinoids were fairly common. In some layers these crinoid stems were flattened and oval in cross-section, unlike any of those at the previous site. On very close inspection these flattened stems seemed to be associated with bedding planes. Robin Bathurst had some microphotographs of some similar 'bedding planes' in Jurassic limestones and from these it became evident that they were more realistically areas in the limestones where compaction of the limestones had taken place before cementation.

Crinoid stems are fragile, open structures and for them to have been preserved so well in some beds, cementation must have been almost immediate upon deposition. In the so-called 'bedding planes' this had evidently not occurred, not only were crinoid stems flattened, but shell fragments were aligned. Just what triggers this solidification is at present under study.

In another part of the quarry were found horizons of *Gigantoproductids* and the party

obtained excellent specimens. Large slabs of limestones showed bioturbation.

ACKNOWLEDGEMENTS

The Shropshire Geological Society was very grateful to Dr Robin Bathurst of Liverpool University for leading the group. Although the whole day was spent looking at limestones of a similar age, the excellence of the exposures and the knowledge and enthusiasm of Dr Bathurst made it one of the best field days the writer had enjoyed for some time and she knew other members felt the same way.

Disclaimer - The information contained in this account has been prepared from notes taken during the field meeting. Its sole aim is to provide a record of what was seen and provide an insight into the diversity of Carboniferous geology exposed across Clwyd. It should not be used for any other purpose or construed as permission or an invitation to visit the sites or localities mentioned.

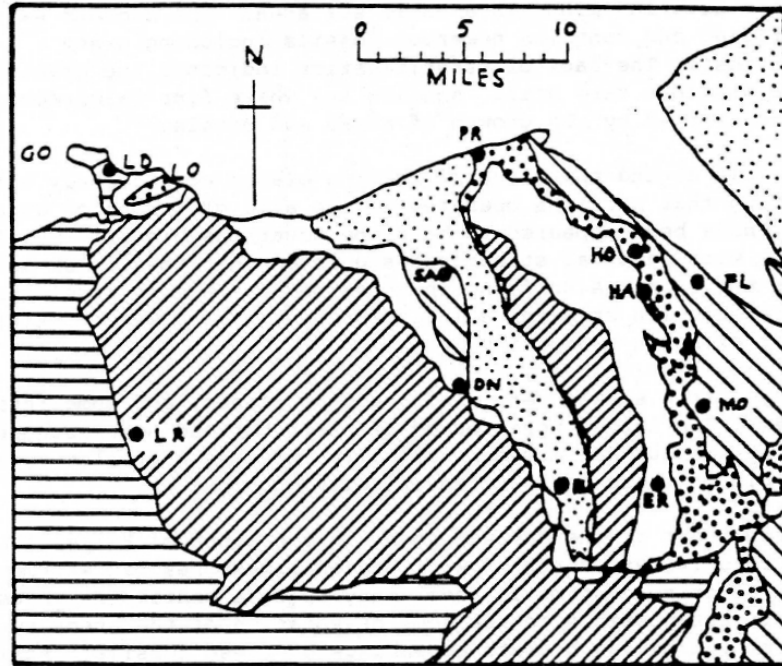
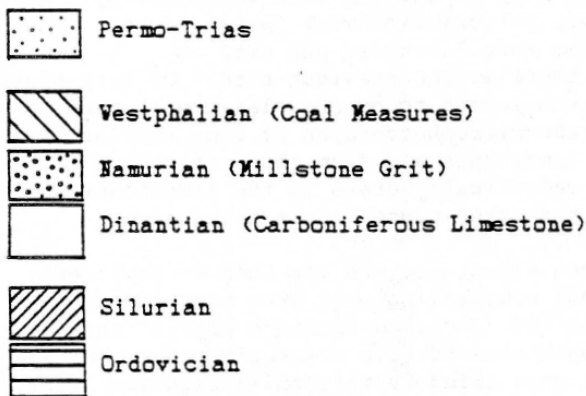


Fig. 1. Geological map of part of North Wales.



GO Great Orme	PR Prestatyn	HO Holywell	FL Flint
LD Llandudno	SA St. Asaph	HA Halkyn	MO Mold
LO Little Orme	DN Denbigh	RU Ruthin	ER Eryrys
LR Llanrwst			

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