
Cilgwyn-Ydw Valley

[SN 748 298]–[SN 748 299], [SN 7534 3086], [SN 757 309], [SN 762 308]

Introduction

In his pioneer mapping of the southern part of the Llandovery area, Jones (1925) established a set of informal lithostratigraphical divisions, using letters and numbers: A₁–A₄ for the Lower Llandovery, B₁–B₃ for the Middle Llandovery and C₁–C₆ for the Upper Llandovery. These terms subsequently became used in various ways, with some authors employing them essentially as chronostratigraphical units, so Cocks *et al.* (1970) set out to resolve this ambiguity by defining formal stage names within the Llandovery Series. The stratotype localities for the lower boundary of each stage, with the exception of the lowest, were selected from exposures in the central portion of the southern Llandovery area. The four names introduced by Cocks *et al.* (1970) were: Rhuddanian (initially regarded as equivalent to A₁–A₄), Idwian (equivalent to B₁–B₃), Fronian (equivalent to C₁–C₃) and Telychian (equivalent to C₄–C₆).

This set of related discrete localities in the Ydw Valley includes the sites used to define the bases of the (now defunct) Idwian and Fronian stages of the Llandovery Series.' The base of the Idwian Stage was defined at the locality at [SN 757 309], a site that had also been described by Jones (1925, p. 363) as '80 yards south' of the (now non-existent) farm Glogoed-fach. The basal outcrop of the Fronian was identified in a series of crags [SN 762 308] near the lane leading from Myrtle Hill to Pont Pwll-defaid.

As part of their revision of the stratigraphy of the type Llandovery area, Cocks *et al.* (1984) recognized that the 'basal Llandovery sandstones' (A₁) of Jones (1925) were late Ordovician in age, so should be excluded from the Rhuddanian.

They also noted that the Idwian and Fronian stages appeared to represent shorter intervals than the Rhuddanian and Telychian stages, and that the Subcommittee on Silurian Stratigraphy had accepted that there should be three stages for the Llandovery Series, rather than four. They therefore proposed a new tripartite stage system, with new stage boundaries defined within continuously exposed fossiliferous sections, rather than in isolated outcrops of the kind originally used for the bases of the Idwian and Fronian stages. The Rhuddanian and Telychian stages were retained, with the base of the latter slightly redefined, and a new stage name, the Aeronian, introduced to replace the Idwian and Fronian. The basal stratotype for the Aeronian Stage was defined at the Trefawr Track site (Cocks *et al.*, 1984). The localities at [SN 757 309] and [SN 762 308], therefore, no longer have international relevance as stratotype sections, but are of historical importance in the development of the reference stratigraphical scheme for the lowest series of the Silurian System.

The stratigraphical revisions introduced by Cocks *et al.* (1984) also included the introduction of new formation names. The Goleugoed Formation, which encompasses divisions A₂–A₄ and B₁–B₃ of Jones (1925), is displayed in a number of natural exposures, quarry sections and trackside around the farm of Goleugoed in the Ydw Valley (Figure 3.24). The suite of localities described here has been selected to illustrate the lithological characteristics and fauna of this unit.

Description

The four localities that make up this GCR site span the Goleugoed Formation, with the lower beds apparent at [SN 748 298]. This locality is within transect b2 of Cocks *et al.* (1984) and displays unlaminate silty greenish mudstones typical of the lower Goleugoed Formation; higher in the transect, beyond the locality, there is an increase in frequency of sandy mudstones and sandstones. Clearance work on the nearby track section at [SN 748 299] has exposed a continuous section through the underlying Scrâch Formation, which here comprises two thick sandstone units separated by alternating thin sandstones and shales (J. Davies pers. comm.); the junction with the Goleugoed Formation is not exposed.

The old quarry at Allt Cwar-mawr [SN 7534 3086] is probably that mentioned by Murchison (1839) as 'Goleугоed' (discussed by Jones, 1925, and Temple, 1987), and from that time has held a reputation as a source of Llandovery fossils. It has also been referred to as Cwar Goleугоed and Cwar-mawr Cilgwyn. The quarry is in mudstones and thin sandstones, occasionally calcareous enough to weather as 'rottenstones', dipping 28° to the north-east. They have yielded a fauna dominated by brachiopods, especially *Eoplectodonta duplicata*, *Leangella scissa*, *Cryptothyrella crassa* and *Stricklandia lens* (Jones, 1925; Temple, 1987; Siveter *et al.*, 1989). Trilobites, orthocones, corals and bryozoans also occur. The quarry at Allt Cwar-mawr is the type locality for the brachiopods *Giraldiella protensa protensa* (J. de C. Sowerby, 1839) and *Plectatrypa tripartita tripartita* (J. de C. Sowerby, 1839).

The natural exposures at [SN 757 309], SSW of Pont Pwll-defaid, comprise light sandstones separated by some 16 m that lack exposure from massive dark mudstones with abundant brachiopods referable to the *Pentamerus* community (Cocks *et al.*, 1970); the latter were defined as the basal deposits of the Idwian Stage. These exposures are all within the Goleугоed Formation.

A set of natural and old quarry exposures around [SN 762 308] were used by Cocks *et al.* (1970) to delimit the base of the Fronian Stage, which is coincident with the base of the Rhydings Formation (Cocks *et al.*, 1984). An old quarry at [SN 7606 3090] exposes mudstones of the uppermost Goleугоed Formation, which contain brachiopods of the *Clorinda* Community. The basal outcrop of the Rhydings Formation comprises poorly fossiliferous sandstone exposed in crags in a field to the south of the lane at [SN 7615 3089]. More fossiliferous beds are displayed in a disused quarry some 100 m away [SN 7625 3090]; these contain brachiopods of the *Pentamerus* Community.

Interpretation

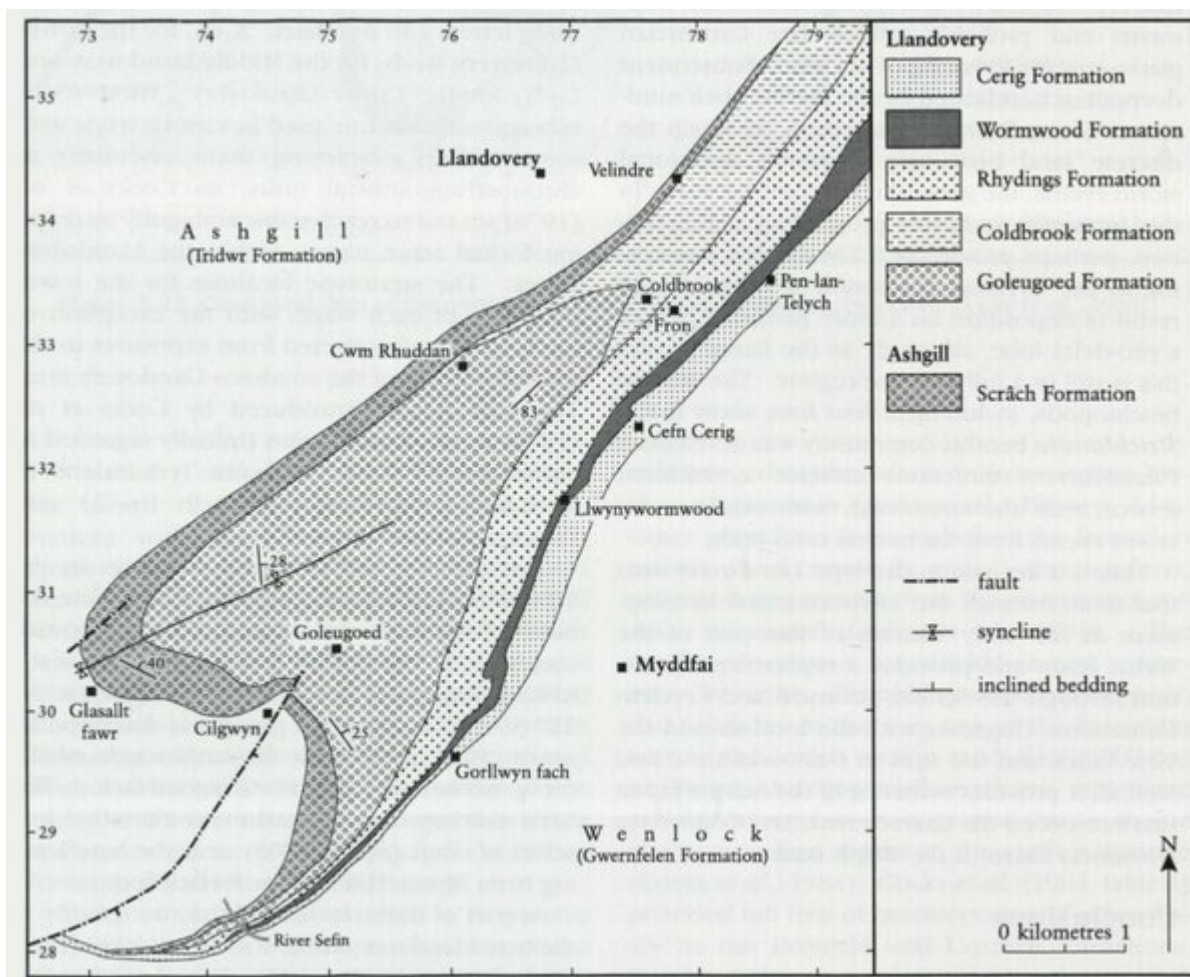
Cocks *et al.* (1984) interpreted the strata of the Goleугоed Formation as representing shallow marine sedimentation, with coarsening-upward sequences suggesting a pro-deltaic setting. These beds record the deepening of the early Llandovery sea in this part of the Welsh Basin, following the late Ordovician glacio-eustatic regression. Variations in depth are broadly indicated by the changing benthic communities, with the *Stricklandia* Community developed at Allt Cwar-mawr, the *Pentamerus* Community near Pont Pwll-defaid, and the *Clorinda* Community in the uppermost beds.

The localities in the Ydw Valley are among a number of scattered local exposures in the Goleугоed Formation. Those selected for the GCR display the basal and uppermost beds of the unit and constrain its boundaries with the Scrâch Formation below and the Rhydings Formation above. The quarry at Allt Cwar-mawr is important as a classic fossil site, and the network of localities that comprise the Cilgwyn–Ydw valley GCR site includes the historical exposures used to delimit the bases of the now superseded Idwian and Fronian stages. This network links with the site at Scrâch Track in the northern Llandovery area to display the development of early Llandovery transgressive deposits in the type area. Together with the sites at Gasworks Lane and Meifod, it also serves to illustrate the nature of the Rhuddanian and early Aeronian fauna of the Welsh Basin.

Conclusions

This is an important set of exposures spanning the Goleугоed Formation in the Llandovery type area. There is a long history of study of these sections, dating back to Murchison (1839) in *The Silurian System*, and two of them were used to define the bases of the Idwian and Fronian stages in the first attempt to provide a formal chronostratigraphical framework for the type Llandovery Series (Cocks *et al.*, 1970). These sites, therefore, have considerable historical significance, and are also of value in demonstrating the development of early Silurian sedimentation and faunas in the southern part of the type Llandovery region.

[References](#)



(Figure 3.24) Geological map of the southern part of the type Llandovery area (after Cocks et al., 1984).