Blair Farm

[NS 3248 0233]

Introduction

The area between Blair and Knockgardner, Kyle and Carrick (Figure 3.79), lying to the west of the other Girvan localities, displays the highest part of the Silurian succession in the Girvan district. Throughout the Blair area the strata are vertical or overturned, dipping to SSE but younging northwards. The fourfold stratigraphical division for the local Silurian shown in (Figure 3.79) was introduced by Lapworth (1882) and followed by Cocks and Toghill (1973).

The section in the gully 70 m SSE of Blair Farm provides the type section for the Blair Formation and also displays the base of the overlying Knockgardner Formation. The Blair Formation is 84 m thick in total (Cocks and Toghill, 1973) and at Blair Farm has yielded a well-preserved graptolite fauna of the upper Telychian *crenulata* Biozone. It also holds high potential for palynological studies.

Description

Cocks and Toghill (1973) described the exposures of the Blair Formation in the gully as comprising 27 m of inverted beds dipping 75° in a direction of 145°. The rocks are soft, thin-bedded yellowish-brown sandstones and shales, in which three graptolitic horizons have been identified. Cocks and Toghill (1973, p. 233) gave the complete graptolite fauna as *Monoclimacis crenulata, Monoclimacis vomerina vomerina, Monoclimacis* sp. nov., *Monograptus tullbergi spiraloides, Monograptus priodon, Monograptus* aff. *spinulosus, Oktavites spiralis* and *Retiolites geinitizianus angustidens;* they assigned this assemblage to the uppermost Telychian *crenulata* Biozone. Spiral graptolites are particularly abundant in the middle horizon, while the lower and upper horizons contain abundant three-dimensionally preserved vomerinids.

The boundary with the overlying Knockgardner Formation is transitional. Three metres are exposed in the gully at Blair Farm, and contain a sparse brachiopod fauna. The brachiopods found locally in the Knockgardner Formation are referred to the *Howellella–Protochonetes* benthic association, which is of Wenlock aspect (Cocks and Toghill, 1973). Hence, the Llandovery–Wenlock boundary approximates to the junction between the Blair and Knockgardner formations.

The thermal maturation of the rocks is low, and they have yielded a well-preserved, but undescribed, acritarch microflora (Dorning, pers. comm.). There is thus clear potential for important palynological research.

Interpretation

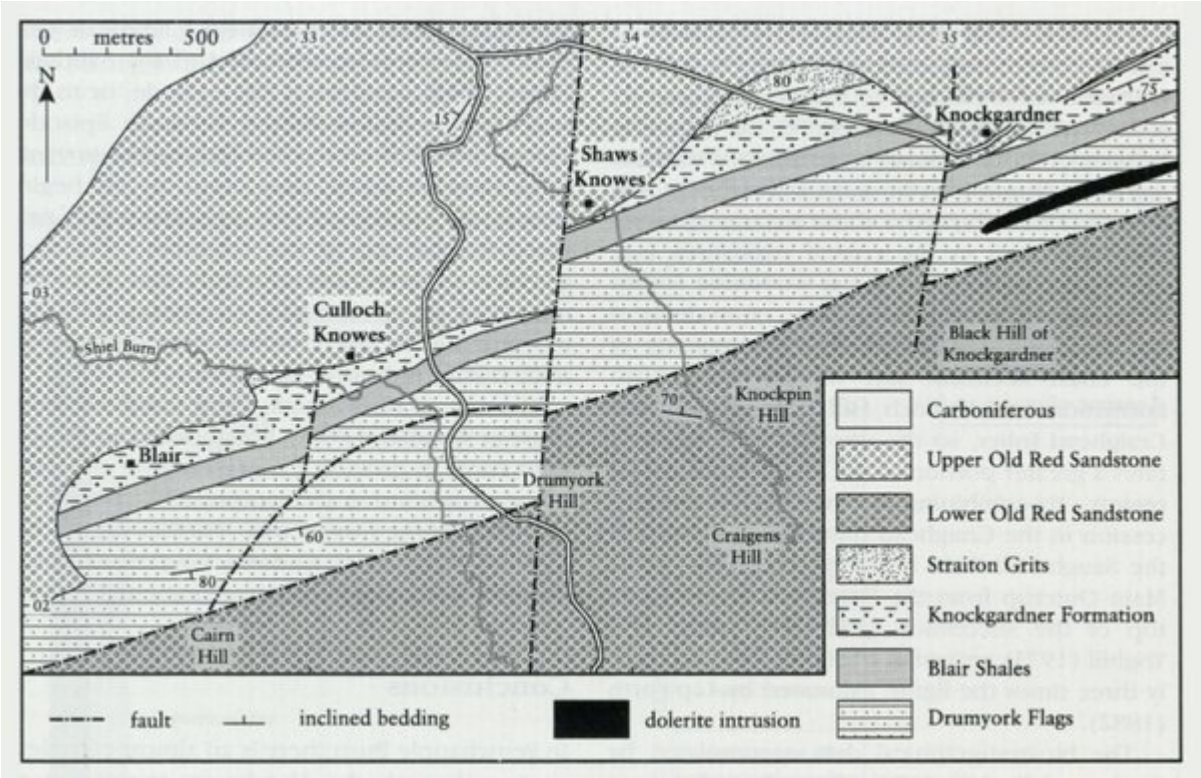
The Girvan area lies in the Midland Valley, where marine and non-marine sediments accumulated during the early Silurian (see Bluck, 1983, and Chapter 1 for regional setting). The recognition of a *crenulata* Biozone graptolite fauna in the Blair Formation shows that most of the Silurian succession of the Girvan area is of Llandovery age, with only the highest two formations (the Knockgardner Formation and the Straiton Grits) being assignable to the Wenlock. The presence of a *Howellella–Protochonetes* assemblage in the Knockgardner Formation suggests deposition under fairly shallow water (Cocks and Toghill, 1973), although the shells have clearly been transported, and much of the formation has been interpreted as turbiditic. The Drumyork Flags, which underlie the Blair Formation, were also interpreted by Cocks and Toghill (1973) as turbidites, which would indicate a relatively offshore setting for the whole of the Telychian sequence in this area.

Conclusions

The site at Blair Farm combines with others in the Girvan area (Woodland Point, Roughneck Quarry Penwhapple Burn) to provide a network of sites representative of the Silurian succession and to enable interpretation of the depositional

history. The strata of the Blair Formation contain a well-preserved assemblage of uppermost Llandovery graptolites, and the succeeding Knockgardner Formation, of which the basal 3 m are exposed at this locality, is probably all of Wenlock age. These are, therefore, the highest Llandovery strata in the Girvan area. The locality holds important potential for future palaeontological research, particularly on the graptolites and acritarchs.

References



(Figure 3.79) Geological map of the Blair–Knockgardner district, Girvan area (after Cocks and Toghill, 1973).