Lammermuir Deans

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Route: (Map 19)

Introduction

This excursion looks at the Lower Old Red Sandstone conglomerates which fill a large pre-Devonian valley cut across the Lower Palaeozoic greywackes and shales of the Lammermuir Hills, south from Dunbar. Known as the Great Conglomerates they were thought to be Upper Old Red Sandstone in age (Clough el al. 1910) but are now believed to be equivalent to the many conglomerates of Lower Old Red Sandstone age found in other parts of the Midland Valley. As well as looking at some of the best exposures in the conglomerates, several unusual weathering phenomena can be seen in the two adjacent deans or narrow valleys. The excursion involves 3 km of rough walking and takes at least 3 hours. It could complement a visit to Siccar Point. The area is a nature reserve managed by the Scottish Wildlife Trust to preserve an unusual calcicolous (lime-loving) flora. The excursion starts at Wester Aikengall [NT 709 708], reached by minor roads from Innerwick or Oldhamstocks. There is reasonable roadside parking.

1. Wester Aikengall: glacial channel, corrom

The cottage is set by a large glacial channel, cut by meltwater flowing from the north and continuing eastwards along the dry valley round Cocklaw Hill to the sea. The Aikengall Water, emerging from a side valley, has built an alluvial fan (called a corrom) which forms a watershed across the glacial channel.

2 and 3. Sheeppath Dean: conglomerate gorge

Follow the Aikengall Water westwards where it flows out of the gorge of Sheeppath Dean (2). Gentler slopes of till cap the steep-sided gorge cut in red conglomerate with mostly greywacke cobbles up to 30 cm across. The clasts are largely matrix-supported and commonly show imbrication and parallel orientation, features which suggest they are torrential or flash flood deposits derived from nearby alluvial fans. The sandy matrix contains lime as evidenced by the unusual lime-loving flora, mainly mosses and ferns, which has established itself on the dripping walls of the gorge.

Upstream the gorge narrows to a spectacular slit only a metre or two wide, but over 20 m high, where the stream has eroded along a straight joint. Although the way can be barred by deep pools and branches, at times it is possible to negotiate the slit gorge. This section is not advised for individuals or large parties. Continue up the gorge past a 1.2 m wide vertical basalt dyke oblique to the gorge, to the point below the wood where the valley opens up sufficiently to climb up the south bank by a sheep track (3). Alternatively, it is necessary to return downstream before bypassing the slit gorge high up on the south side of the valley. In this case it is worth going down for another look at the gorge upstream at (3). For the next localities proceed south across the ridge keeping to the west side of the wood.

4 and 5. Fairy Castle Dean: conglomerate, erosion reatures

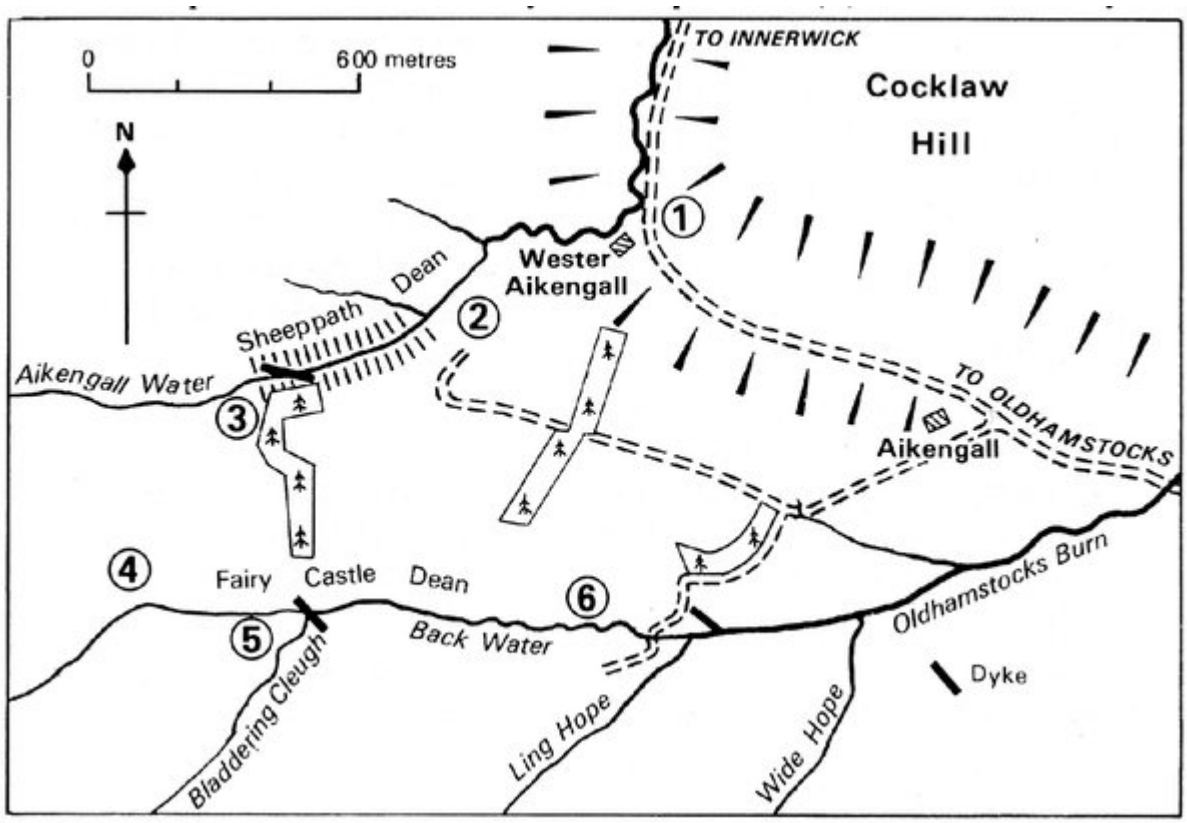
In contrast to the green pastured till of the Lammermuir ridges, the bare arid red conglomerate valley appears like a canyon from the American West, complete with rock pillars. The valley can be best appreciated by walking along the edge to the viewpoint (4) where the E–W valley turns to the south-west. On descending into the valley the conglomerate is seen to consist of coarse and fine beds with a sandy matrix, and dipping gently to the east-north-east. The cobbles are sub-angular to sub-rounded, generally 5 to 30 cm in size and mostly of Silurian greywackes. Examples can also be found

of cobbles derived from felsic dykes, quartz veins. Chert, jasper and other lithologies associated with the Silurian greywackes. Fan-shaped screes of cobbles, weathered out from the conglomerate, have formed along the base of the valley sides, mimicking the conditions under which the conglomerate originally formed in alluvial fans at the foot of rugged mountains. Near Fairy Castle (5), at the confluence with Bladdering Cleugh, a vertical basalt dyke, almost a metre wide and trending NW–SE, has been intruded into and baked the conglomerate. Note the jointing on the dyke and the manner in which the baked conglomerate stands up, resistant to erosion.

6. Back Water: alluvium

Continue downstream along the usually dried up alluvial flat of the Back Water, a headstream of the Oldhamstocks Burn. The alluvium is a gravel formed of cobbles from the conglomerate, the cobbles becoming more rounded from each successive cycle of erosion. Return by the track to Easter Aikengall Farm, and by the road back to the starting point.

References



(Map 19) Lammermuir Deans.