

## Evening Excursion to White Cart and Linn Park

Leader Simon Cuthbert

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A very pleasant summer's evening walk along the White Cart in Linn Park was well attended by a large group of society members.



The park takes its name from the 'linn' where the White Cart tumbles over a hard band of rock, a dolerite sill, producing a waterfall. The chilled margins seen at the top and bottom of the band confirm that this is an intrusion (permian) into the surrounding middle carboniferous rocks. This sort of sill can form a distinctive part of the landscape and Cathcart Castle was built on a different part of the same sill further down the river.

The White Cart flows down from Cource Hill to the south and through what was originally an estate owned by a sugar magnate, who left it to the public to be used as a park after his death. Apart from the dolerite sill the surrounding rocks are middle and lower carboniferous mudstones with some organic carbon deposits. Coal beds would have been above the current level of the park with the index limestone at the level of the park. These form part of a series of Clackmannan cyclotherms where limestone would form in shallow waters which would then be inundated by mud brought down by rivers which would then give way to forests which would in turn be drowned by sea rise and then fall down to produce a layer of what would later become coal. This cycle would be repeated a number of times giving rise to the different layers of rock.

The industrial past of the park can be seen in the lime pit and lime kiln near the park office. The river was also used to drive hammers used at the print and dye works, a far cry from the now tranquil surroundings.



Following the path along the river the next stop was at a gravel bar in a bend of the river elow the linn. Here the gravel had been deposited on the inner bend of the river where the flow rate slowed down allowing the river to deposit it's load. Standing on the gravel bar and looking across to the other side of the river, where the cliff was being eroded by the faster flowing water on the outside of the bend, it could be seen that the rock had been deposited as sand bars and gravel beds (all be it much older than the one we were standing on). In the cliffs the layers of sandstone and shale showed crossbedding and lens shaped layers indicating that the depositional environment had been sand and gravel bars possibly in a delta or across the mouth of a river. The vertical jointing in the rock is what had facilitated the formation of a cliff face on that side of the river.

As the bedding could be seen to dip to the south our walk following the river (northward) was a trip back in time.