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QUATERNARY OF THE SEVERN VALLEY IN SHROPSHIRE,  
LED BY  
DAVID PANNETT (SHROPSHIRE GEOLOGICAL SOCIETY).

Approx Words: 790

**Saturday 6 April (Field Meeting): Quaternary of the Severn Valley in Shropshire**, led by David Pannett (Shropshire Geological Society).

Geolo Soc (WMRG) members joined the Black Country Geological Society for the start of their 2019 field meeting season. This field visit was an exploration of the Quaternary glacial development of the Severn Valley, Shropshire between Bicton to the east and Molverley in the west. Conditions were cold and clear when we met Dave Pannett at Lyth Hill car park for 10:30. The views from Lyth Hill northwest hinting at what the day would reveal.

From Lyth Hill summit we travelled in convoy down to Bicton and Dave's house for coffee and an introduction to the day's adventure. A retired teacher, Dave had many helpful handouts and props to illustrate precisely what features we would see and what mechanisms produced them. From Bicton we generally followed the course of the River Severn northwest to Montford Bridge and Shrawardine (and Shrawardine Castle) before ending up at Molverley after lunch.

During the last (Devensian) Ice Age an ice tongue from the North Wales Ice Cap (the Severn Valley Glacier) carved a course to Bicton. During its advance and eventual withdrawal, it left numerous sedimentary features behind hinting at its passing. At Bicton, an elevated roughly north-south curving ridge or terminal moraine, kettle holes and variable clay to sand rich soils define the Glacier's eastern most extent around 20,000 years ago before it began to retreat.



At Montford Bridge we saw evidence of the Glacier's retreat in the form of sandy Glacial Till dropped from the glacier as it melted. Meltwater trapped between the retreating ice and the terminal moraine at Bicton flooded the then exposed

landscape forming a glacial lake. Into this lake, sediments dropped and washed from the retreating glacier accumulated as 'varved clays', or silt and clay with sand and gravel lenses.

We examined these lake deposits in an exposure at Montford Bridge that was topped with red sands. Red iron oxide from the overlying sands leaching down into the older varved clays below. At the exposure base were 'drop stones' that had fallen into the lake sediments from melting ice. The red sands originated from later fluvial erosion of the local landscape feeding into the glacial lake where deposition took place.



Heading for Shrawardine we made a couple of brief stops to take in a second curving roughly north-south trending ridge. Evident from topographic maps this second ridge that extends from Nesscliff, in the north, to Shrawardine, in the south, represented a second moraine (the Shrawardine-Nesscliff Moraine). Easily visible whilst driving along the A5 the ridge hints at a brief pause in the Glaciers' retreat.

Stopping for lunch at Shrawardine Castle it was very noticeable how the landscape looking west was low-lying and flat. The Breidden and Berwyn Hills rising up in the distance like a gateway into Wales with the flattened - Severn Valley landscape - between. Dave pointed out where the glacial ice would have sat as it retreated. During the glaciers' advance, it carved out the local landscape to approximately 50m below sea level. As the glacier retreated, the resulting depression became filled with glacially derived clay rich sediment and flooded with meltwater to form another vast lake between the retreating ice and the Nesscliff-Shrawardine Moraine. Today this former lake is seen as a relatively flat plain elevated to approximately 60m Above Ordnance Datum (AOD).

We finished at Meverley Church where Dave pointed out various interesting features about the local surrounding landscape. Meverley Village sits on a third roughly north-south trending curved ridge – the Meverley Moraine, which represents a second brief pause of the retreating glacial ice before it disappeared back into Wales. Following the glacier's departure, rivers such as the Severn and Vyrnwy carved their way through the low-lying post glacial landscape exposing the sediments deposited within the earlier lakes.



Moraines typically comprise sands and gravels making them relatively harder wearing than the varved lake deposits seen in the lower lying surrounding landscape. This makes them ideal for sitting local villages on. In particular Meverley. When the River Severn floods, the local landscape becomes a reminder of the glacial lake that once covered the area as the ice retreated.

Dave showed us LiDar imagery and borehole data that have added to the Glacier's advancing and retreating story. Modern flood defence bunds and medieval farming practices are just some examples of landscape features revealed from Lidar imagery. Farming having flourished from the nutrient rich soils left behind from times of flooding. Borehole data providing information about the depth of the lake sediments and their nature.

The day finished around 16:00 with a look at the flood plain southeast of Meverley and was an interesting lesson on how much we can learn from reading the landscape.

I would like to thank David for his time and look forward to our next outing.

Andy Harrison