

## Geological debate resolved

The hard sill rock is "endosed" in softer rock known as shale. The age of the shale was at the centre of an important geological debate during mid-Victorian times.

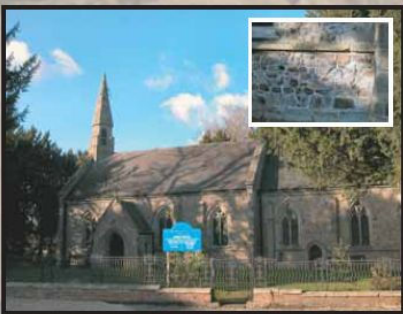


Their age was thought to be **Carboniferous**, before Professor Charles Lapworth of Birmingham University discovered fossil trilobites in the shales which finally dated the rocks as **Cambrian**. We now know these shales, found along the Nuneaton Ridge, form part of the most complete sequence of **Cambrian** rocks in Britain.



This is one of the rarer trilobites found in Purley quarry known as an "Agnostid". They had no eyes as they lived in the mud on the sea floor.

Caldicote Church is made of a mix of **Cambrian** rocks from the Nuneaton Ridge. Some may have come from Purley Quarry.



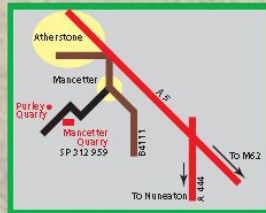
## Site restoration

The unusual nature of the local geology will allow the site restoration plans to include the creation of locally rare, lowland acidic grassland. This will increase the biodiversity of the quarry and encourage the survival of the "Dingy Skipper", an endangered butterfly that is still found locally. The bare rock faces will also provide specialised habitats for a range of insects and lichens, that are becoming increasingly rare as quarries are land-filled.

The Warwickshire Geological Conservation Group (WGCG) has been awarded a grant by Natural England from the Aggregates Levy Sustainability Fund to preserve some geological exposures within the quarry, to produce interpretation panels, and this leaflet. None of this would have been possible without the unstinting support of the site owners, Tarmac PLC, who have generously modified their site restoration plans to preserve the geology, and the invaluable help of many local volunteers.

This quarry has been designated a Regionally Important Geological Site (RIGS) to enable the long term future of the site.

The site is not currently open to the public but group visits can be arranged. Please contact WGCG to express a wish to visit this site.



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Our thanks to the following for making this project possible :



## Shattering Discoveries at Mancetter's Purley Quarry



Aerial view of Purley Quarry

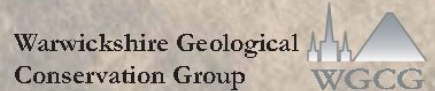
Purley Quarry provides a rare window into some of the oldest rocks in the English Midlands. It lies at the northern end of the "Nuneaton Ridge", an outcrop of hard, rocks that have withstood the effects of erosion for more than 500 million years.



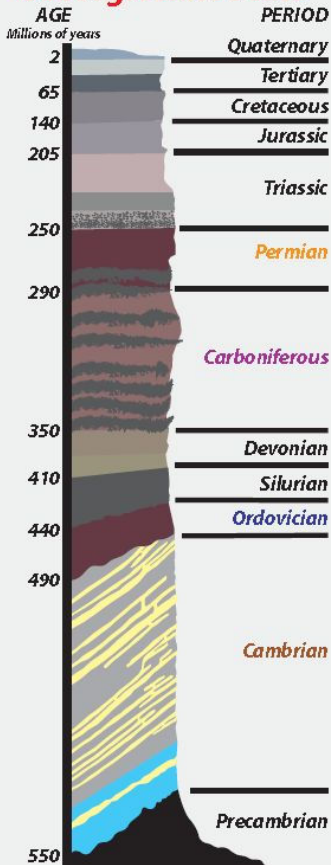
The "Nuneaton Ridge"

The ridge is composed of hard **Cambrian** rock standing out above the flat farmland lying on soft Triassic rock.

Its exploitation has influenced the landscape, environment and economic development of the area for thousands of years, ever since man first discovered a use for the rock.



## Geologic time scale



## Sills

Molten rock, injected under great pressure, forced its way along planes of weakness in the near-horizontal shale strata during late **Ordovician** times, roughly 430 million years ago. It eventually cooled to form the dark, hard rock called lamprophyre in a series of sheets called sills.

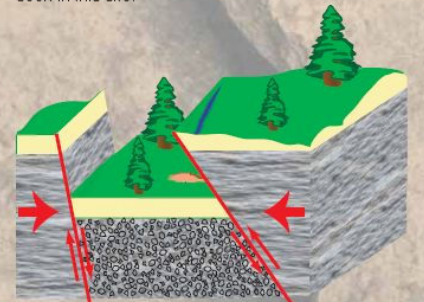
It was first used in the "New Stone Age" (Neolithic) for making axe-hammers and by medieval times it was being used to construct buildings. Today the stone is quarried, crushed and used with asphalt for road surfacing.



Sill formation

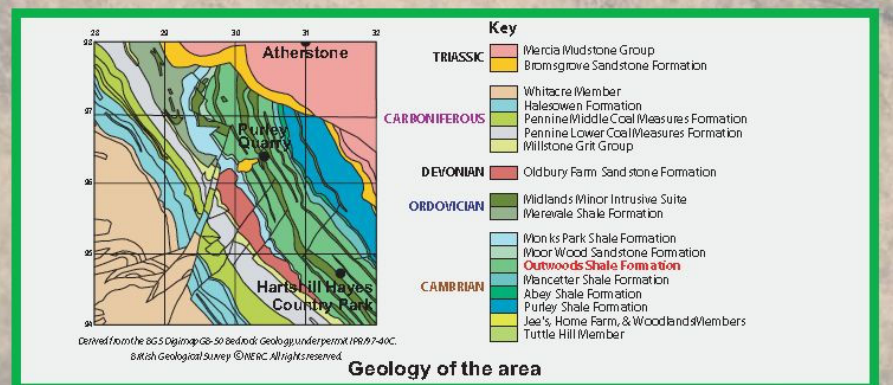
## Faults

The rocks were tilted to the angle seen today by major earth movements during the **Carboniferous** or **Permian** Period which also cracked them, moving giant blocks up, down and past each other. This movement is called faulting and examples can be seen in this site.



Fault plane 1 Fault plane 2

A double fault



Geology of the area