Otley Chevin

Chevin Forest Park

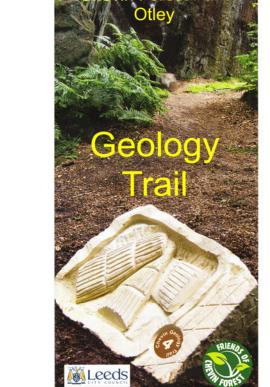
The Story of a Landscape

You are standing on the Chevin looking out over Wharfedale. Skipton is below the left horizon and York is on the right – on a clear, sunny day you can see York Minster! The origin and evolution of the Chevin and the scenery before you are part of geological history. Here with the help of the Leeds Geological Association and the West Yorkshire Geology Trust we have picked out some of the main elements of the story of the landscape and invite you to look for some evidence yourself.

Chevin Forest Park is a Local Nature Reserve and is managed by Leeds City Council for your enjoyment.



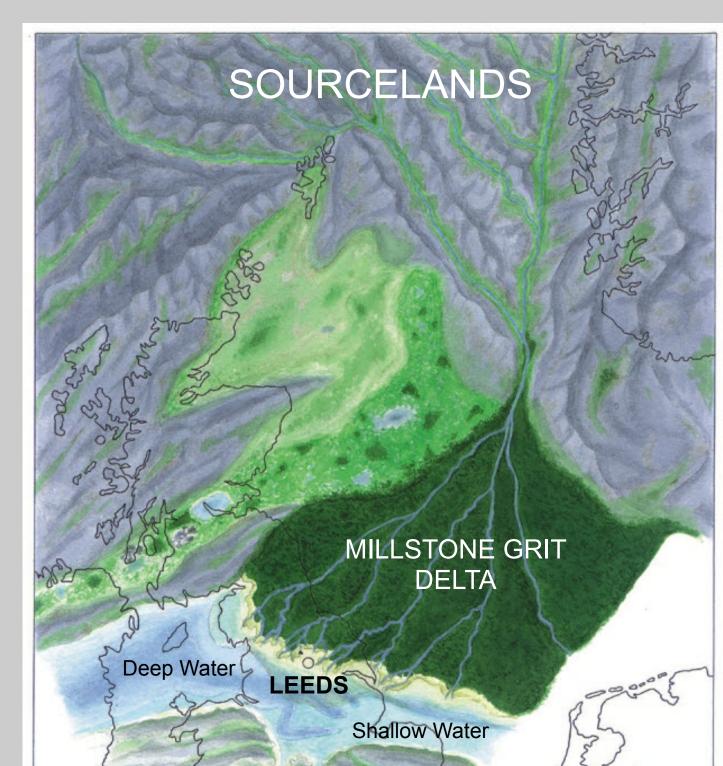
Walk the Geology Trail



White House Café (see notice board for opening times) and Otley

The walk starts at East Chevin Quarry car park and is about 3 km

315 MILLION YEARS AGO (100 MILLION YEARS BEFORE THE DINOSAURS)



Above: Over a period of 10 million years in mid-Carboniferous times, rivers flowing out

of mountainous lands north of Britain (the

Atlantic didn't exist then) deposited layers

of sand and mud over a wide delta region.

Right: The rivers which deposited the sand and mud layers preserved in the

in tropical Queensland. Successive

sheets of sediment are deposited, and

the Chevin rocks is 'Millstone Grit' but

Chevin may have looked very like this river

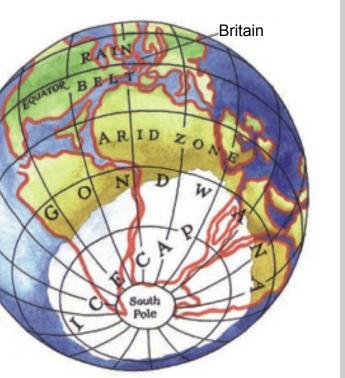
then eroded and re-deposited, building up layers which when buried deeply will

harden into rock. The traditional name for

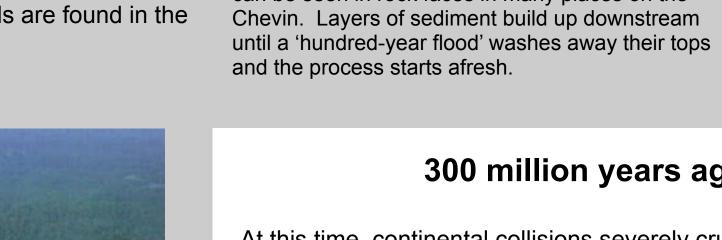
geologists today class them as 'Namurian'

The continent of Gondwana 315





Carboniferous period. An ice cap at the South Pole periodically melted; sea level rose and low-lying coastal layers with marine fossils are laid down. Such fossils are found in the

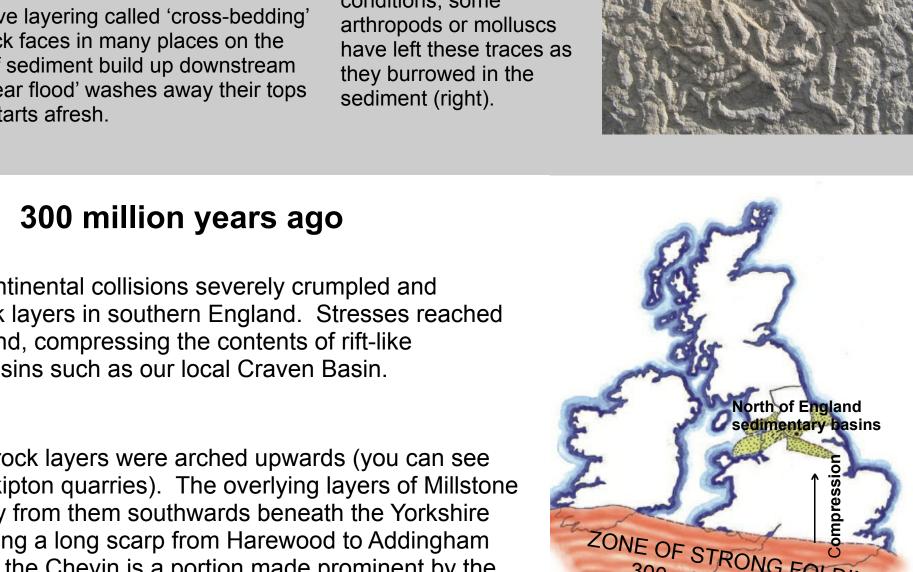




At this time, continental collisions severely crumpled and stacked up rock layers in southern England. Stresses reached northern England, compressing the contents of rift-like sedimentary basins such as our local Craven Basin.

Above: A distinctive layering called 'cross-bedding' can be seen in rock faces in many places on the

Older, deeper rock layers were arched upwards (you can see this is in the Skipton quarries). The overlying layers of Millstone Grit slope away from them southwards beneath the Yorkshire Coalfield, forming a long scarp from Harewood to Addingham Edge, of which the Chevin is a portion made prominent by the Guiseley Gap.

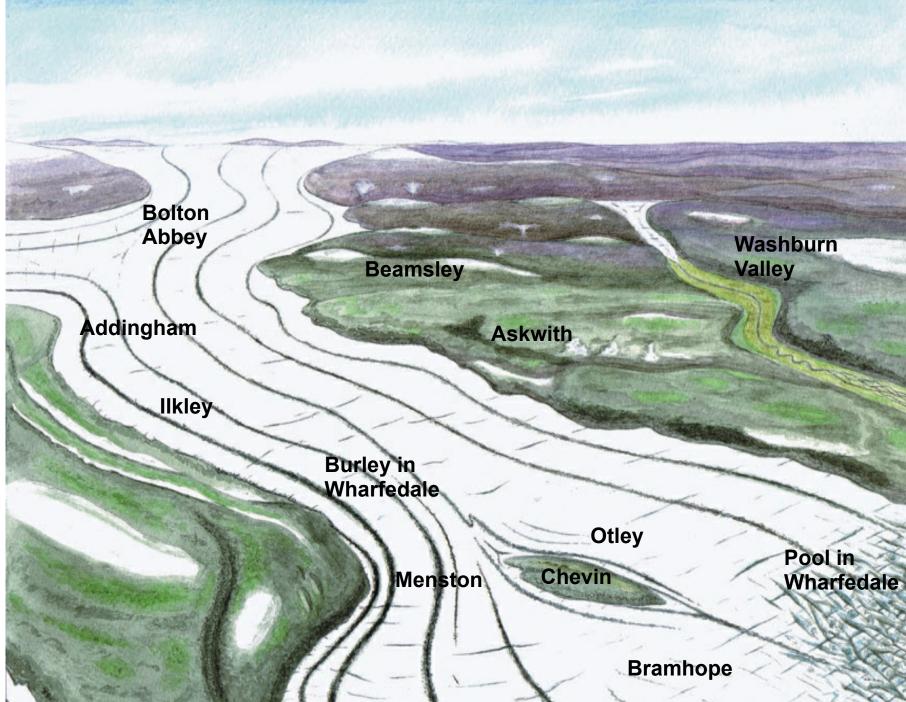


18,000 YEARS AGO: THE WHARFEDALE GLACIER

leaving debris in the form of moraine, and boulder of

moulded into oval-shaped mounds known as drumlins,

What preceded the glaciers? The Dales existed



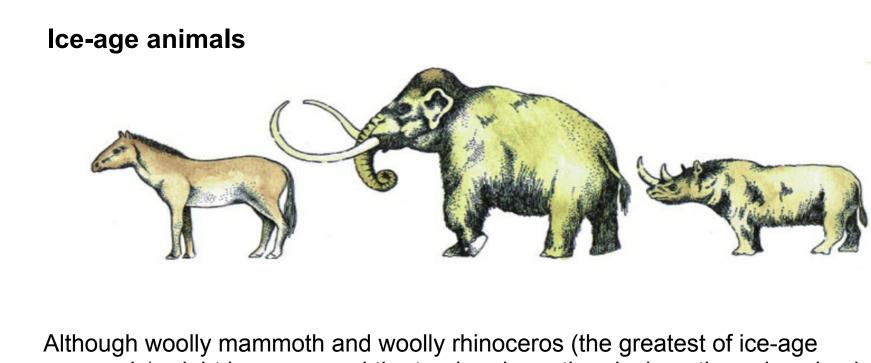
May 18,000 years ago: the warm Gulf Stream flowed east

to Lisbon, while

Britain lay in the

average annual

as river valleys before the Ice Age, though the moving ice must have widened and deepened them. The rivers probably flowed eastwards as now, cutting down through kilometres-thick layers of Jurassic and Cretaceous rock like those in East Yorkshire before carving into the Dales rocks. These layers have been stripped away by uplift and erosion in the past 60 million years.



south-west of Menston.

mammals) might have roamed the tundra above the glaciers, the only animal remains found in Wharfedale and Airedale are those of wild horse, red deer, giant ox and wild pig which grazed pastures on post-glacial and river deposits. They were hunted by small bands of nomadic Palaeolithic hunter-gatherers armed with spears and bows and arrows.



The Lanshaw Delves moraine

This strip of hummocky ground with trees at Reva above Menston consists of debris deposited at the edge of the Wharfedale glacier, which must have surmounted Reva Hill. It contains limestone blocks from the Dales which farmers have dug out for lime.



Almscliff Crag

Almscliff Crag is a conspicuous upstanding mass of Millstone Grit, the result of an underwater landslip when the grit was being deposited, providing double the normal thickness with a structure different from th in the adjacent gritstone layers.

BEDROCK OF THE CHEVIN TODAY

The Chevin in section looking towards Ilkley Moor. Grit and mudstone formations of the Carboniferous Millstone Grit Group dip down beneath Guiseley. Bands of mudstone with marine fossils give place upwards to sandy delta deposits with plant remains, reflecting the periodic rise and fall of sea level. Note the post-glacial landslips still active today.

G=Guiseley Grit, EC=East Carlton Grit, DSS=Doubler Stones Sandstone, AE=Addingham Edge Grit



Slices through Wharfedale: the Millstone Grit layers are draped over a more compressed core of older rocks below Wharfedale which comes to the surface around Skipton. The compression dates from 300 million years ago.

AE=Addingham Edge Grit

