

THE GEOLOGY OF NEWICK PARISH



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Geological maps show that the underlying strata in Newick parish is 'Tunbridge Wells Sand', lying above the older, earlier rock layers.

The Tunbridge Wells Sand was laid down about 136 million years ago, when the area that is now Sussex was part of an extensive basin (or syncline) with waters and sediments washing down from uplands, particularly those to the north where London now lies. The 1965 geology book *British Regional Geology -The Wealden District* by the British Geological Survey referred to the area as a shallow 'lake'. A useful coloured illustration, plate 4, was included in the book suggesting the appearance of the shores of this Wealden 'lake' and stating that '*Dinosaurian reptiles were the dominant vertebrates whilst conifers, cycads, ferns and rushes made up most of the plant life*'. However, a 1981 geology book, *The Weald* by geologist Wes Gibbons, suggested (page 14) that the environment in which the sandy Wealden formations were formed was more comparable to a floodplain, similar to the present day braided floodplains of the Brahmaputra River in northern India.

The 1999 book *An Historical Atlas of Sussex* edited by K Leslie and B Short includes a short section on geology by Rendell Williams, also stating that the Tunbridge Wells sand formations '*...appear to be dominantly flood plain deposits, laid down by rivers and are not, as was once believed, the infill of a fresh-water lake*'. This comment had regard to the information in the 1996 publication *Early Cretaceous Environments of the Weald* by the Geologists Association (Guide 55).

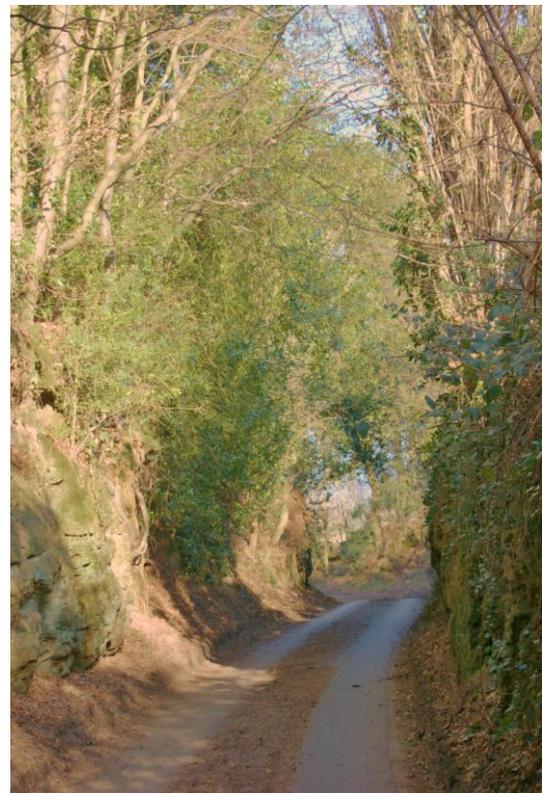
More up-to-date comment is in the book *The Kent and Sussex Weald* by Peter Brandon 2003 where he provides a more encompassing description of how this Wealden area may once have looked ...'*The full story is still far from realisation but a clearer picture of alluvial plains, mud swamps, levees, lagoons, sand and gravel banks, bars of sand, shoals, lakes, deltaic fans and estuaries is*

emerging...the Wealden water lying on the surface was so shallow that the iguanodon and its relatives could have paddled 30 miles across it with ease'.

Further sediments were laid down above the Tunbridge Wells sand over millions of years to become layers of weald clay, lower greensand, gault, and chalk. This was not only while the area comprised flood plain deposits from rivers but also when it was under the sea. Huge geological changes then occurred involving these layers of the Wealden basin or syncline being folded upwards into a massive, uplifted dome known as the 'Wealden Anticline' between 25 and 30 million years ago. Above what is now Newick, all of that weald clay, lower greensand, gault, and chalk layers, over half a mile thick, have been eroded away over geological time leaving the Tunbridge Wells sand layer that we have below us now.

Ardingly sandstone

There are places in the parish where, within the Tunbridge Wells Sand strata, another strata is exposed termed 'Ardingly Sandstone'. Outcrops occur at Newick Park, Founthill, Tilehouse Lane, etc. The two photographs below show the Ardingly sandstone at Founthill.



Sandstone at Founthill, Newick

The Ardingly sandstone is referred to in the *Geology of the Country around Lewes* by the British Geological Survey 1987, with plate 3 on page 19 showing part of the outcrop at Founthill. Below is a modern photograph of the same spot.



Ardingly sandstone at Founthill 2010

The 2017 photograph below shows part of the sandstone outcrop at Tilehouse Lane, Newick illustrating the bedding planes.



Sandstone outcrop at Tilehouse Lane, Newick

Grinstead Clay

Also, within the Tunbridge Wells sand strata, 'Grinstead Clay' appears in the Broomly Wood area on the Sutton Hall estate and in Newick Park. In Broomly Wood (photograph below) wide deep pits have been dug in the past, probably to use the dug clay for distribution onto the sandy soils of the surrounding farmland for improving the condition of the fields. A pit at Reedens Meadows on the eastern edge of the village (in Chailey Parish) was probably dug to extract the Grinstead Clay for similar purposes. The pit there was later used as a decorative pond in the parkland landscape.



Deep pits with bluebells in Grinstead Clay at Broomly Wood 2010

Wadhurst Clay

There is a small amount of this older type of clay at Beechland Mill Wood where pits have been dug in the past. Were these pits dug to use the clay agriculturally on the farmland or were the excavators looking for iron ore in pre-nineteenth century times? There is evidence of bloomery iron furnace workings nearby.

Lignite 'coal'

Gideon Mantell in his 1822 book *Fossils of the South Downs* refers on page 34 to finding fibrous coal 'of the Bovey kind' at Newick Park. He described it as having the character of jet, velvet black, with a resinous lustre, very brittle and that it burnt with a bright flame. This was lignite, formed from wood and other vegetable matter that once floated in the shallow waters millions of years ago.

Fault line

Geological maps show east/west fault lines across the parish. A particularly impressive one creates steep slopes at Sharps Hanger and near Tilehouse Farm.



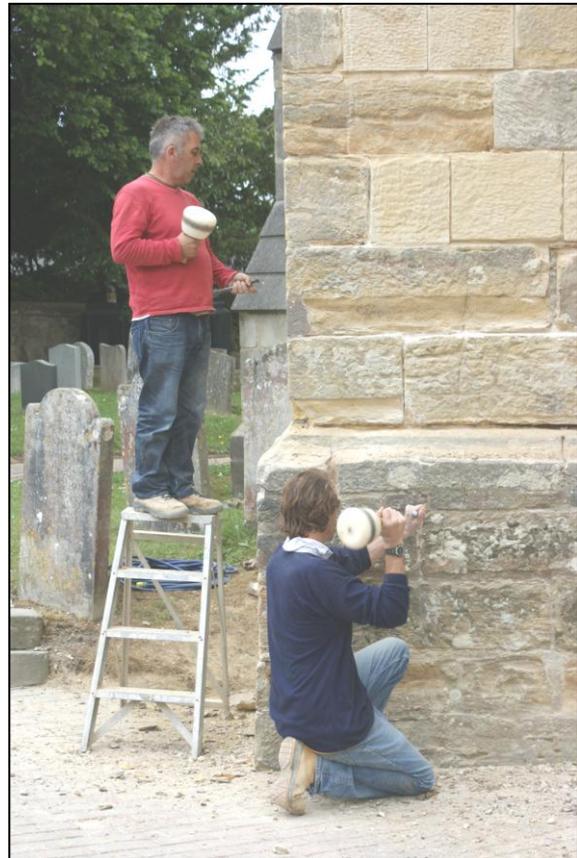
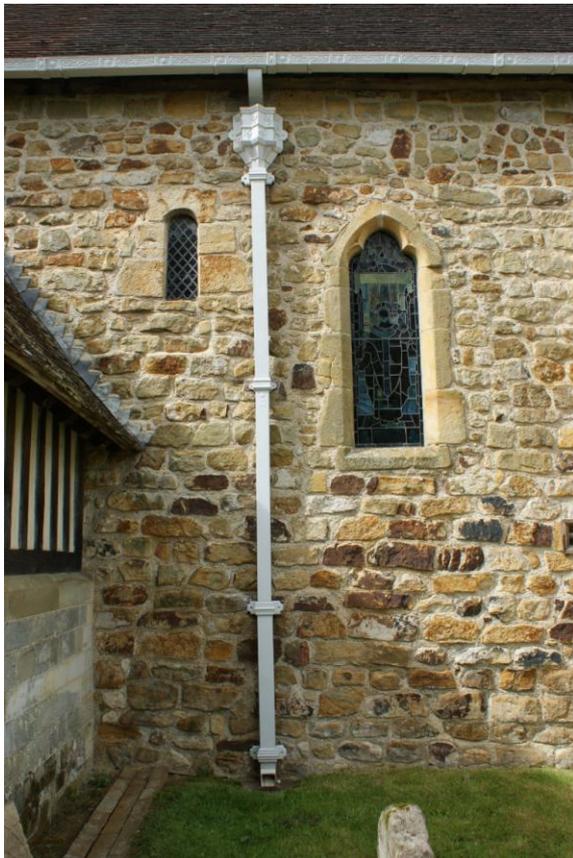
Fault line slopes at Sharps Hanger above the river Ouse near Sharpsbridge and near Tilehouse Farm off Tilehouse Lane

Fossils

Fossils of simple plants and molluscs can be found in sandstone strata.

Newick Parish Church

The oldest parts of the parish church are from Norman times, with one wall remaining, constructed in sandstone as shown in the first photograph below. This sandstone would presumably have been hewn from local outcrops. After being hewn, fresh sandstone hardens on exposure to the weather and becomes more durable. In 2011, the 15th century church tower was re-pointed and some deteriorated stones were replaced (see second photograph below). Some of those new stones were of grey colour but they are now weathering into the more typical golden brown sandstone colour.



Part of the church wall of the Norman period (including the small Norman window) and stonemasons renovating the 15th century church tower in 2011

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Information sources (in date order):

Geological map of Solid and Drift, Lewes Sheet 319 British Geological Survey 1978

The Weald by Wes Gibbons 1981

The Landforms of Sussex by RBG Williams and D A Robinson, in 'Sussex: Environment, Landscape and Society' 1983

The Geology of Sussex by R N Mortimore, in 'Sussex: Environment, Landscape and Society' 1983

Geology of the Country around Lewes by the British Geological Survey 1987

British Regional Geology - The Wealden District by the British Geological Survey 1992

Geology by Rendell Williams in *An Historical Atlas of Sussex* edited by K Leslie and B Short 1999

The Geology of Britain -An Introduction Peter Toghill 2000

The Kent and Sussex Weald by Peter Brandon 2003

Photographs by author