

GLA 55: Trent Park, Potential LIGS

London Borough of Enfield, TQ 281 969

Ownership: Local Authority. Open access.

Glacial Valleys

Trent Park displays 4 different rock types and so is an excellent location for studying the influence the varied geology has had on the landscape. Areas of high ground are dissected by the Leeing Beech Gutter running through the centre of the park and the Merryhills Brook to the south. Both streams rise from spring lines in the west of the park and flow in an easterly direction towards the River Lea. Spring lines pick up the junctions between the lithologies and the small streams emanating from them have, in places, cut deep ravines. This cannot be the product of normal rainfall and must have happened as the ice sheet retreated at the end of the Anglian glaciation about 400,000 years ago. During subsequent ice ages the glaciers did not reach as far as London but, when frozen ground melted, an immense volume of water would have been released accompanied by much slippage of the surface.

Superficial geology

Other evidence of the Anglian ice sheet can be found in Trent Park as glacial till on top of the ridge that runs from the main car park near the Cockfosters Road to the top of Snakes Lane and also on the more northerly ridge just outside the park area at Ferny Hill Farm. Actual exposures are hard to see unless there have been some temporary excavations, but small pieces of white chalk are sometimes visible amongst newly-ploughed earth in the fields surrounding the farm. As there is no chalk in the immediate area this is an indication that the glacier picked it up as it passed over and it was dumped as glacial till as the ice retreated. Large parts of Hertfordshire and East Anglia are covered by till but it only extended into the London area as fingers. One finger, represented by isolated hill tops in Trent Park, terminated in Finchley as the ice flowed down the 'Finchley depression'. Subsequent erosion has left the till-capped hillocks as high points in the landscape.

Beneath the till lies a horizon of Dollis Hill Gravel that is also restricted to the hilltops but is considerably more extensive than the till. It is approximately 3-5 metres thick and is found at a height of c. 60-80 m above sea level. Typically it is composed of 90% flint pebble (2/3 angular, 1/3 rounded), 7% Lower Greensand chert and 1.8% quartzite (see BGS Special Memoir, pp. 55-57). The height above sea level and the large proportion of rounded 'Tertiary' flints, help to distinguish this gravel from others that pre-dated the ice sheet in the vicinity. Like the Woodford Gravel to the east and the Stanmore Gravel on higher ground, the inclusion of Lower Greensand chert suggests that it was deposited by a river flowing from the Weald of Surrey on the other side of what is now the Thames Valley. At that time the course of the Thames was further north, flowing into the North Sea in the Clacton area and this would have been one of the tributaries.

Solid geology

Underlying the gravel and providing the bed rock of most of the park is the ubiquitous London Clay, formed over 50 million years ago in moderately deep seas into which large rivers discharged a considerable amount of mud. Terrestrial fossil plant fragments found within the clay in the southeast of England suggest a tropical climate with some seasonality. As the sea became shallower, so the clay became sandier and formed the Claygate Beds. These underlie the gravel but are rather more extensive, as the gravel has been eroded in places. The springs mostly arise where water percolating through the gravel meets the less permeable Claygate Beds beneath. A second spring line occurs at the junction of the Claygate Beds and the London Clay.

Access

There is a car park off Cockfosters Road open from 8.30 am until dusk. Bus 298 stops outside this entrance to the park and Cockfosters Underground Station (Piccadilly Line) is about 10 minutes walk away. There are toilets and a café beside the car park. The London Loop runs through the park (<http://www.walklondon.org.uk/section.asp?section=1> (Section 17)). A geotrail is described in GA Guide 68, pp. 57-64.

Exposure of London Clay at the edge of the fish ponds

Source: London's foundations, page 237 (Diana Clements)



Site Map

Source: London's foundations, page 235

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