
Newton St Loe

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Highlights

Newton St Loe provides the last surviving example of fossiliferous gravels among the low terraces of the Avon. It is a key site for establishing the stratigraphy and history of the Avon terraces and has wider stratigraphic significance in helping to establish a relative timescale for the ancient glaciation of the Avon coastlands and Bath area.

Introduction

The Avon Valley was famous in the nineteenth century for its fossiliferous Pleistocene gravels. Newton St Loe is the last surviving fossiliferous gravel site; all others downstream from Bath have been built over and lost. At Newton St Loe, thin trough cross-bedded gravels of the Bathampton Member have been exposed in road and railway cuttings.

Owen (1846), Dawkins (1866) and Moore (1870) recorded bones of mammoth and horse from thin gravels here. The site was also mentioned by Woodward (1876) and Winwood (1889), but no modern work was done until the site was revisited during the compilation of the GCR.

Description

A terrace surface approximately 10 m above the Avon can be seen at Newton St Loe. Thin decalcified gravels are exposed in shallow roadside exposures at [ST 715 664], near the northern edge of the deposit. North of the A4, at [ST 7130 6555], the following section was recorded from a temporary exposure made by road workers (maximum bed thicknesses in parentheses).

3. Dark brown, pebbly loam soil. (0.2 m)
2. Strong brown, matrix-supported, silty clayey fine gravel, with many vertical stones. The clasts are all of insoluble lithologies, including Greensand chert, flint, Carboniferous chert, quartzite and brown sandstone. (0.6 m)
1. Strong brown, clast- and matrix-supported clayey gravel. The gravel is decalcified but shows some traces of trough cross-bedding. Only insoluble lithologies such as flint, Greensand and Carboniferous chert, quartzite, ironstone and brown and yellow sandstone are present. The matrix was probably once sandy, but is now very clay-rich. The bedding appears to be disrupted locally by involutions. The gravels rest on a gently undulating surface cut in Mercia Mudstones. (0.3 m)

Interpretation

The trough cross-bedding seen in bed 1 is consistent with the gravels having been laid down by a braided river, a fluvial style usually associated in the British Isles with cold-stage sedimentation (Briggs and Gilbertson, 1980). The gravels were subsequently weathered and decalcified, probably during episodes of temperate climate, and cryoturbated, most probably under stadial conditions. The altitudinal relationships of the gravels suggest attribution to the Bathampton Member, which probably accumulated during Oxygen Isotope Stage 6 (this chapter). The fossil remains found at Newton St Loe during the last century must, at face value, reflect a relatively open but not stadial environment, probably one with herbaceous rather than forest vegetation. There is, however, a reasonable probability that the bones are derived and therefore do not reflect conditions during the aggradation of the gravels.

Conclusion

At Newton St the, terrace gravels of a low terrace of the river Avon are exposed in road and railway cuttings. The gravels yielded a restricted mammal fauna of elephant and horse in the nineteenth century. Such fossils might be taken as indicative of an open but not necessarily cold environment, perhaps characterized by a herbaceous flora. However, it is quite likely that the bones were derived from older deposits and that they do not reflect environmental conditions at the time of gravel deposition. The exposures show typical features associated with cold-stage fluvial deposition and have been deeply weathered. Newton St Loe forms a key element in a network of sites which can be used to reconstruct the protracted history of the Bath Avon.

[References](#)