

# EXCAVATION OF THE MILLRACE AT DUXBURY MILL, CHORLEY

*Chris Howard-Davis*

## INTRODUCTION

Between September and October 2006, Oxford Archaeology North, on behalf of Lancashire County Council, excavated two sections across a millrace associated with Duxbury Mill, in the Red Bank area of Chorley. The work was in advance of the construction of a new road bridge for the Eaves Green Link Road, linking the A6 Bolton Road to Lower Burgh Way, across the River Yarrow (Fig 1). Bridge construction would impact on and destroy any surviving remains of the former millrace in two main places: beneath the footprint of the new bridge (SD 5918 1592); and between two run-off lagoons linked by an engineering channel (SD 5910 1587).

The study area today lies on the southern edge of Chorley's urban fringe, although it will have had a largely rural aspect until the early twentieth century, when Red Bank was subject to mixed residential and industrial development. However, even today, the landscape is dominated by the heavily wooded valley of the River Yarrow, which has provided a source of power for various mills since at least the fourteenth century (Farrer and Brownbill 1911).

From the low-lying riverbanks, the land rises to the west and north-west, towards Red Bank and Weld Bank respectively. The underlying solid geology comprises scree and bare rock belonging to the Belmont Association (Hall and Folland 1970, 44-7), overlain by compact glacio-fluvial drift deposits of sands belonging to the Newport 1 Association (Lawes Agricultural Trust 1983) and the soils deriving from them.

## HISTORICAL BACKGROUND

A mill was first mentioned at Duxbury in 1354, although its origins were probably somewhat earlier (Farrer and Brownbill 1911, 208). There are no further references to a mill at Duxbury, however, until 1727, when a corn mill was supplying Duxbury and Heath Charnock under the supervision of John Brown, an Ecclestone man. Brown operated the mill and maintained it in good order by arrangement with its owner, Sir Thomas Standish, and in return, Standish agreed to build a new bridge and look after the millrace (Farrer and Brownbill 1911). William Pilkington took over the lease of the mill in 1742, and was required to 'keep up the banks and scour (*sic*) the Fleam Ditch between the weir above Yarrow Bridge and the said mill' (quoted in Heyes 1994, 26).

An estate map of 1757 records Duxbury Mill, along with the accompanying house and garden, as being leased to a John Threlfall (LRO DDRf 11/1). This is the earliest map to show the millrace, separated from the River Yarrow by a sluice-gate on the west bank of the weir. This mill is presumably the one marked on Yates' 1786 map of Lancashire.

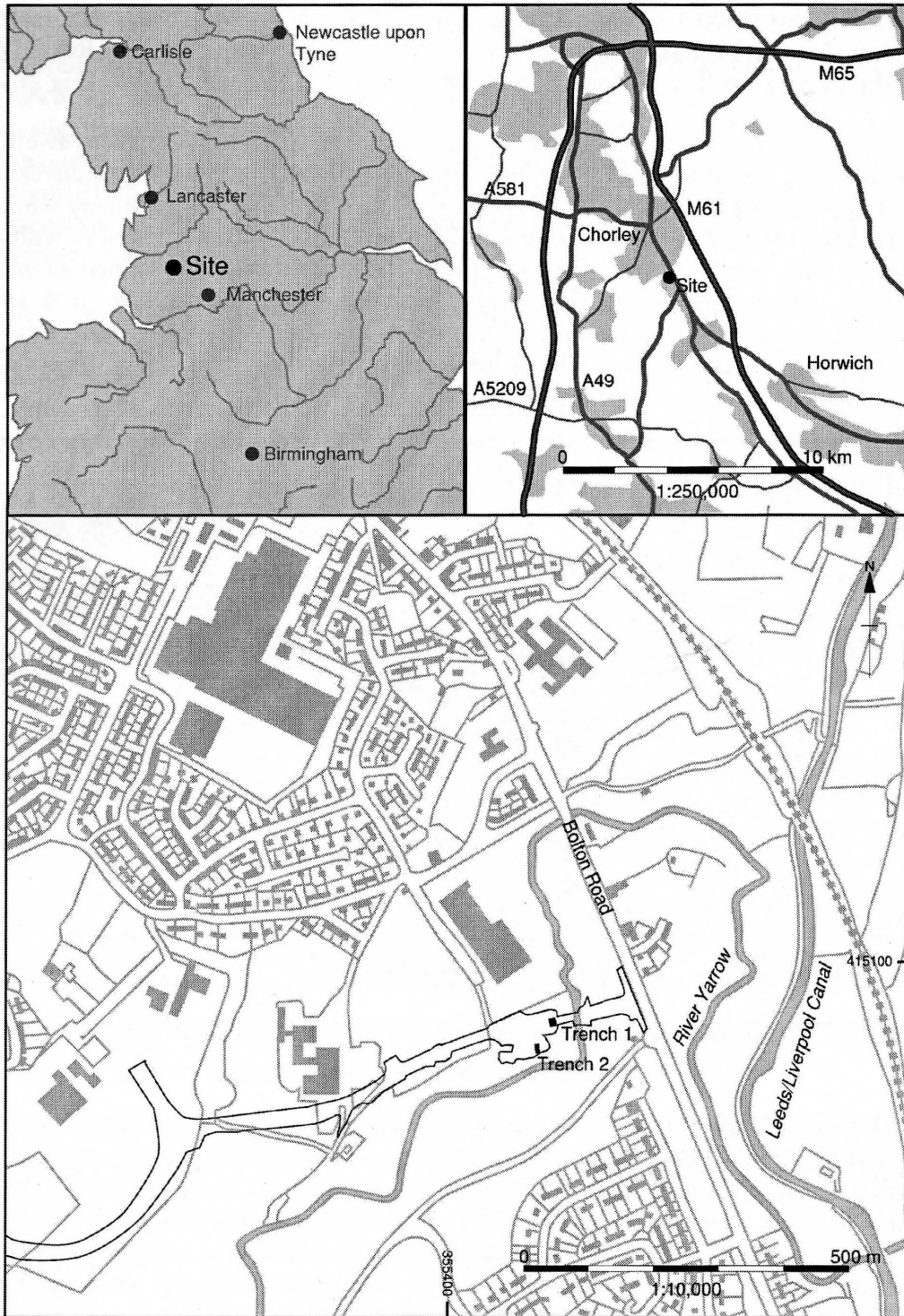


Figure 1: The location of the excavation within the road improvement scheme

A tithe map of 1842, providing a large-scale plan of the mill and its ancillary structures, shows the millrace leaving the River Yarrow at a weir south of Yarrow Bridge, and continuing to a large millpond some 500m to the south-west, from which a supply of water was furnished to the wheelhouse attached to the western side of the mill (LRO DRB/1/68). According to the tithe schedule, the mill, together with the adjacent cottage and orchard, were still owned by the Standish family, being leased to

one John Ford (LRO PR3134/3/4). The layout of the site shown on the tithe map is replicated on a large-scale plan of the Duxbury Estate, dated 1846 (LRO DDRf 11/51), and also on the Ordnance Survey 1st Edition 1:10,560 map of 1849 (Fig 2).

In May 1846, the corn mill was advertised for let, together with ‘an excellent dwelling house, stable, cow house and other buildings’. Surprisingly little specific information about the mill is provided in the advertisement, other than that the machinery worked seven pairs of stones (*Preston Guardian* 23 May 1846). The mill, together with 40 acres of land, was advertised for let again in 1867, when it was described as water powered, and equipped with nine stones, suggesting some remodelling since 1846 (*Preston Guardian* 16 November 1867). It seems that the lease may have been taken at this date by Joseph Sumner, who is named as the tenant of the mill in a valuation of the Standish estates, compiled in 1878 (LRO DDRf 11/11).

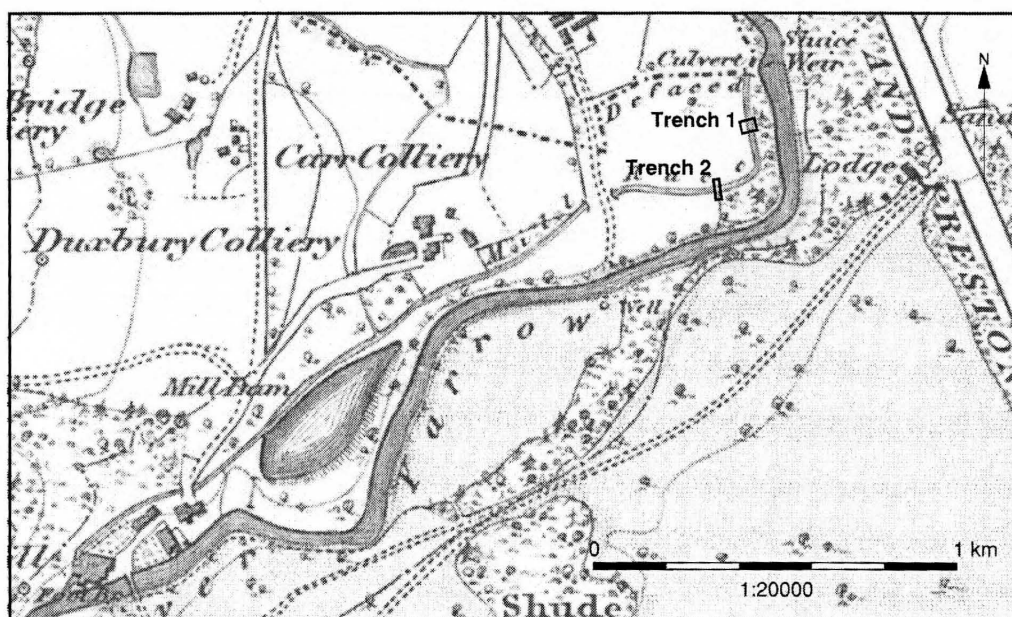


Figure 2: Excavation trenches superimposed on 1st Edition Ordnance Survey map of 1849

In 1891, the Duxbury Hall Estate, comprising approximately 1500 statute acres, was advertised for sale by auction (*Preston Guardian* 27 June 1891). The auction was held in September 1891, and included the corn mill (LRO DDRf 11/72). The outcome of this auction is not clear in the available historical records, although a twentieth-century photograph, reproduced by Birtill (1968, 118), shows the mill as a four-storey brick structure supported on stone foundations. The date at which this photograph was taken is uncertain, although the mill is marked ‘disused’ on the Ordnance Survey 2nd Edition map of 1894, at a scale of 25 inches to the mile, and is thought to have been demolished during the 1920s (Earthworks Archaeological Services 2000, 30). The sluice-gate and the far northern end of the millrace were modified slightly in 2005, during a programme of work by the Environment Agency to construct a system of fish passes along the River Yarrow and, when examined in 2006, the mill complex was completely overgrown (Environment Agency 2006, 12).

## THE EXCAVATIONS

Two trenches were excavated in 2006 (Fig 2), examining the head-race from the weir (Trench 1), and where it turned westwards towards Duxbury Mill (Trench 2). Investigation concentrated on gathering information on the structure, use, and subsequent disuse of the head-race. Three successive phases of activity were recognized and, although none of them can be dated with precision, these provide information on its post-medieval construction through to its disuse in the early twentieth century.

Phase 1 can be dated to around the later seventeenth to early eighteenth century, when the extant head-race channel (Fig 3, 103/208) was probably constructed. In Trench 1 it was aligned approximately north-west/south-east, with an approximate width of 6.25m and an approximate depth of 2.03m. In Trench 2, the channel was on an approximate east/west alignment. The excavated feature was narrower and not as deep

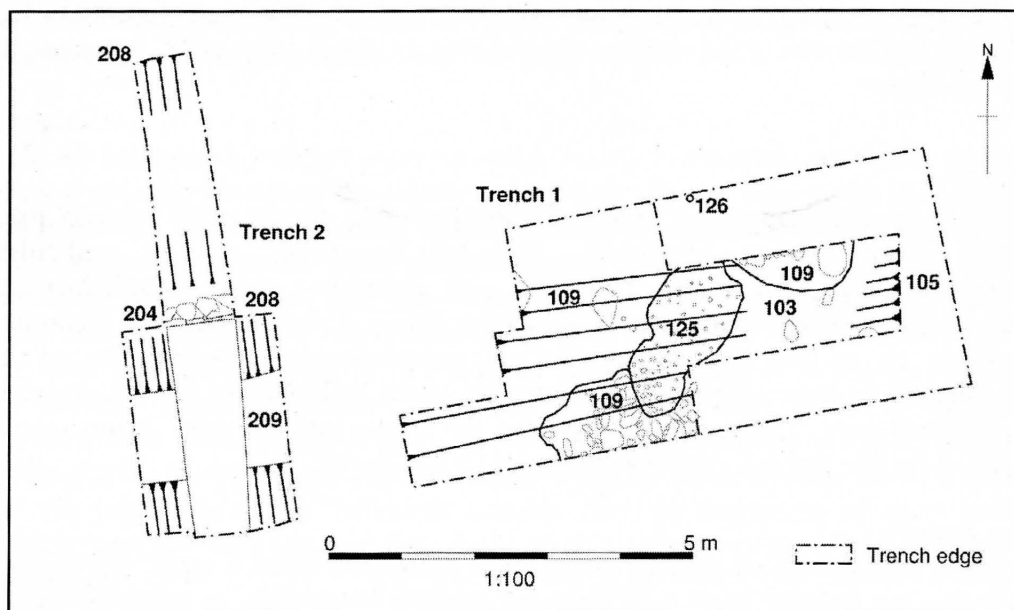


Figure 3: Detailed plans of the excavations

as that excavated in Trench 1, being approximately 3.4m wide and approximately 0.21m deep. There was little evidence for any formal structure, although a spread of unworked sandstone and pebbles (Fig 3, 109 and 125) across the base of the channel probably formed a rudimentary lining. A single wooden post (Fig 3, 126) was found on the western side of the channel, although its purpose remains uncertain. No datable artefacts were associated with this phase. However, a few fragments of later seventeenth-century pottery and a clay tobacco pipe bowl, dated to 1600-40, all clearly residual in Phase 3, make it clear that some activity took place in the seventeenth century. A thick deposit of waterlain silt on the base of the channel provided evidence of a damp wooded local environment at the time, including alder, as would be expected. Palaeoenvironmental evidence also suggested some arable farming and waste ground slightly further afield, with evidence of corn fields, and wayside verges or waste ground from waterlogged seeds, including corn cockle and corn marigold. Evidence of weld was also found, which is sometimes used as a dye, but is also common on disturbed ground (Hall and Huntley 2007). A single cherry

stone and an abundance of blackberry seeds are most likely to reflect the flora of the riverbanks, local hedgerows, and field margins.

Phase 2 (*c* 1750-1900) is marked by an unbonded, rough stone revetment on the southern side of the millrace (Fig 3, 204). Around the same time, an earthen bank (Fig 3, 105 and 209) was created on the side of the channel closest to the River Yarrow. The small amount of pottery from the five successive deposits forming the bank suggests a later nineteenth-century date for completion, and it is not impossible that the bank was created over a protracted period, perhaps associated with episodes of flooding or periodic clearance of the race, as stipulated in the lease of 1742 (Heyes 1994). Towards the end of this phase, however, it is clear that the millrace was no longer being maintained, and the channel was allowed to silt up.

During Phase 3, from *c* 1900 to the present day, the millrace was left to silt completely, a process accelerated by the dumping of domestic and other rubbish, and the collapse or slump of the bank into the channel. A possible drain appears to have been cut into the side of the millrace channel (Fig 3, 103) at some point, hastening this process further.

## **FINDS**

The excavations produced a range of finds including pottery, clay tobacco pipes, vessel glass, modern metalwork, and an interesting, if not particularly archaeologically significant, collection of probably early twentieth-century leatherwork, dumped into the millrace during Phase 3. In addition, the excavation provided an unusual opportunity for palaeoenvironmental investigation of late deposits. Only those classes of finds relevant to the dating of the site are, however, summarised here. The remainder, and the full palaeoenvironmental report, can be found in the site archive, deposited at Astley Hall, Chorley.

### **The Pottery**

A small assemblage of pottery sherds was recovered from a range of deposits, including the millrace bank, and many of the later nineteenth- or twentieth-century silts or dumped material. In general terms, it comprises a single, relatively homogeneous group of nineteenth- and twentieth-century kitchen- and tablewares, with only a few sherds pre-dating this period. The earliest vessel, though, from the millrace bank, is part of the narrow base of a beaker or relatively small jar of Roman date, possibly of the second or third century AD. Its stratigraphic position within Phase 2 means that it is not only residual, but could well have been brought to the site from elsewhere, although Roman pottery outside the known Roman sites is sufficiently rare in Lancashire for this to be intriguing.

The remainder of the pottery is post-medieval, with the earliest being a small fragment of a late seventeenth- to early eighteenth-century Blackware drinking vessel from Phase 3 of a silt/dump deposit associated with the millrace bank. There were also very small and abraded fragments of other typically eighteenth-century fabric, including tin-glazed ware, slip-decorated ware, white salt-glazed stoneware, manganese-speckled ware, and creamware. Later fabrics were dominated by plain white-glazed earthenware (introduced in the early nineteenth century and still widely produced) along with blue and white transfer-printed earthenwares, again most likely to date to the nineteenth century or later, which together accounted for approximately

60% of the assemblage. Other fabrics were restricted to a narrow range of contemporary kitchenwares, predominantly black-glazed redware vessels, which are difficult to date with precision.

### **Clay Tobacco Pipe**

In total, 27 fragments of clay tobacco pipe were recovered, of which 15 were datable bowls, the remainder being undiagnostic stem fragments. The earliest bowl was dated to 1600-40, but came from a late deposit (Phase 2) and was clearly residual. Its dating is, however, close to that of the earliest fragment of Blackware from the site, and might point to some activity in the vicinity at this date. A secondary fill within the millrace, produced later nineteenth-century bowls, the latest of which was a plain pipe without a spur, probably dating to *c* 1880-1900. A primary deposit of bank 105 (Fig 3) produced eighteenth- and nineteenth-century bowl forms, again suggesting a mixed deposit, presumably brought in when the bank was under construction, and thus pointing to a nineteenth-century date for its origin. A single bowl from the latest in the sequence of deposits forming bank 105 (Fig 3) can be dated to 1810-40, and possibly represents the approximate date of its completion.

### **Leather**

In all, 89 fragments of leather were recorded, mostly in excellent condition. Perhaps the most notable element of the leather assemblage was the large group of strap and loop fragments, but it also included shoe soles and shoe uppers. The shoe uppers were of thinner leather than the soles, possibly tanned using a different process, and so were less well preserved. All the straps were substantially made, with several thicknesses of leather or a single layer up to 5mm thick. The short lengths of strap were often joined by looping or had rows of centrally placed holes, suggesting that they had been joined by buckles. Their thickness, far in excess of that normal for a belt, led to their identification as probably belonging to the harness of a draught horse, and the pottery from the same contexts suggests that the material dates from no earlier than the beginning of the twentieth century. The 26 fragments of shoe leather probably represent no more than four shoes, all of simple work style, and probably of a similar date.

## **DISCUSSION**

The millrace and associated earthworks are almost certainly post-medieval in date, being probably no earlier than the later seventeenth century. The documentary evidence raised the possibility of a medieval precursor, and it was suggested that the millrace might have evolved from an earlier, medieval arrangement (Farrer and Brownbill 1911, 209), although physical evidence for any such activity is lacking. Nevertheless, later documentary evidence, alluding to the initiation of the management and subsequent maintenance of the millrace in the eighteenth century (LUAU 1996), was confirmed by evidence of the construction of a stone revetment wall and embankment at this time or later during Phase 2.

During the nineteenth century, keeping the millrace in good order seems to have become progressively less important to the lessees of the mill. The material assemblage from Phases 2 and 3 would certainly seem to suggest that the channel's abandonment was followed by a protracted period of silting and the casual disposal of rubbish.

The preservation of waterlogged plant remains in the silt provided a currently unique (Hall and Huntley 2007), if limited, opportunity to consider the local environment of a post-medieval millrace in the north of England. It is perhaps not surprising that the assemblage suggests areas of wet ground close to the riverbanks, with arable land or waste ground close-by. However, as a result of the lack of excavation and bulk sampling on such sites (Newman and McNeil 2007, 127), evidence for crop cultivation and the farming regimes of north-west England from the eighteenth century onwards is extremely sparse. Thus, the excavation has, in this regard, contributed significantly to the study of the rural North West at a time when most research interest has focused on the development of the industrial landscapes of the region.

### ACKNOWLEDGEMENTS

Oxford Archaeology North wishes to thank Wai Kee Leung of Lancashire County Council for commissioning and supporting the work, and Peter Iles of Lancashire County Archaeology Service (LCAS) for advice and support during the investigation. The site was excavated by Chris Healey, who also undertook the stratigraphic analysis. Specialist work was undertaken in-house by Christine Howard-Davis (finds) and Sandra Bonsall (environmentalist), and the illustrations were produced by Adam Parsons. The project was managed by Emily Mercer and Mark Brennand.

### REFERENCES

#### Primary Sources

LRO DRB/1/68, 1842 *Plan of Duxbury in the Parish of Standish*

LRO DDRf 11/1, 1757 *Survey of the lands belonging to Sir Frank Standish, Baronet, by R Lang*

LRO DDRf 11/11, 1878 *Valuation of Estates in the County of Lancaster belonging to the Co-Heiress of the late W Standish Standish Esq*

LRO DDRf 11/51, 1846 *Plan of Duxbury Estate*

LRO DDRf 11/72 *Particulars, Plans and Conditions of Sale of the Duxbury Hall Estates, near Chorley, Lancashire, to be sold by auction 24 September 1891*

LRO PR3134/3/4, 1842 *Tithe Apportionment for Anderton, Heath Charnock and Duxbury*

Ordnance Survey, 1849 1st Edition, 1:10,560, Lancashire Sheet 77 (surveyed 1844-7; contoured 1847)

Ordnance Survey, 1894 2nd Edition, 1:2,500, Lancashire Sheet LXXVII.16

*Preston Guardian* 23 May 1846

*Preston Guardian* 16 November 1867

*Preston Guardian* 27 June 1891

Yates, W, 1786 *The County Palatine of Lancaster*

### **Secondary Sources**

Birtill, G, 1968 *Follow Any Stream*, Chorley

Earthworks Archaeological Services, 2000 *Proposed Construction of the Eaves Green Link Road, Chorley: A Programme of Archaeological Evaluation*, unpubl rep

Environment Agency, 2006 Catch: Spring 2006, [www.environmentagency.gov.uk/commondata](http://www.environmentagency.gov.uk/commondata)

Farrer, W, and Brownbill, J (eds), 1911 *The Victoria History of the County of Lancaster*, 6, London

Hall, AR, and Huntley, JP, 2007 *A Review of the Evidence for Macrofossil Plant Remains from Archaeological Deposits in Northern England*, Res Dept Rep Ser, 87/2007, English Heritage, unpubl rep

Hall, BR, and Folland, CJ, 1970 *Soils of Lancashire*, Soil Survey of England and Wales, Bull, 5, Harpenden

Heyes, J, 1994 *A History of Chorley*, Preston

Lawes Agricultural Trust (Soil Survey of England and Wales), 1983 *Soils of Northern England*, 1:250,000, Harpenden

LUAU, 1996 *Eaves Green Link Road, Chorley: Archaeological Assessment*, unpubl rep

Newman, R, and McNeil, R, 2007 The Post-Medieval Period Research Agenda, in M Brennan (ed), *The Archaeology of North West England, An Archaeological Research Framework for North West England: Volume 2, Research Agenda and Strategy*, Archaeology North West, 9, Manchester, 115-32