

THE MESOLITHIC OCCUPATION OF MILL DAM MEADOW, GLEASTON, CUMBRIA.

C R Salisbury & J Coupe

In 1993 and 1994, the authors investigated the possible location of a 12th century water mill in Mill Dam Meadow, near Gleaston on the Furness Peninsula in Cumbria. Whilst they were unable to positively identify the location of the water mill, they were able to recover sufficient evidence of a 12th century economic exploitation for them to be able to assume that Mill Dam Meadow had been occupied during the early medieval period. The artefacts recovered included medieval pottery, structural timber, nails and the remains of several domestic animals.¹

A puzzling feature of the artefact assemblages was the presence of a number of flint and chert tools and fragments from contexts containing medieval pottery and faunal remains. It was assumed that the medieval builders of a water channel crossing the site had disturbed earlier occupation layers during the construction of the channel. As a result of the recovery of the flint and chert artefacts, field walking exercises were undertaken on the ploughed high ground around the perimeter of Mill Dam Meadow in late 1994. A large number of flint and chert tools and fragments were recovered during the field walking and in early 1995 a trial trench was excavated in Mill Dam Meadow. The results of the trial excavation point to a fairly extensive Mesolithic exploitation of the high ground surrounding Mill Dam Meadow as do the results of further field walking exercises undertaken during the excavation work. There is a distinct possibility that Mill Dam Meadow may have been a small lake or tarn during the Mesolithic Period. Because of the large areas of land yet to be investigated, this report is submitted as an interim report pending further excavations and field walking.

THE MESOLITHIC BACKGROUND

Very little investigation of a Mesolithic occupation of the Furness Peninsular has ever been undertaken. The late Dr G Jackson investigated much of Walney Island and some of the coastal areas for a number of years but much

of his work is unpublished.² Bart's Shelter Cave at Scales is currently under excavation but it may be some years before the results of the work are published.

There is an abundance of evidence, mainly from recent field walking exercises, that the Furness Peninsular would have been an attractive area for Mesolithic hunter/gatherer groups and that the region was probably exploited to a far greater extent than has previously been thought. This is perhaps corroborated by the presence of a very large hunting encampment on the southern shore of Morecambe Bay at Heysham Head discovered in 1992.³ At first sight the Heysham Head site and Mill Dam Meadow may appear to be geographically isolated, but this is not the case. The Heysham site can be seen across Morecambe Bay to the south from the high ground adjacent to Mill Dam Meadow.

A large number of Mesolithic sites have been excavated in northern Britain in recent years from the Pennine sites to Star Carr in east Yorkshire and a number of sites in Scotland. Generally, flint and chert microliths dominate the tool assemblages unless the soil conditions are sufficiently anaerobic for tools made from wood, bone and antler to have survived. Because of the dry condition of the soils at Heysham Head tools made from materials other than stone had not survived. Whilst the stratigraphy at Mill Dam Meadow is different in many respects to the Heysham Head stratigraphy, the excavators were yet again faced with soils possessed of poor preservation qualities and no organic remains were recovered during the excavations. However, tools made from imported flint and indigenous chert were recovered together with flint and chert fragments.

MILL DAM MEADOW

Mill Dam Meadow lies to the north of Gleaston on the Furness Peninsular (Fig:1) some 5Km north east of the town of Barrow-in-Furness and 2Km inland from the northern shore of Morecambe Bay. The Mesolithic site at Heysham Head is some 17Km to the south east across Morecambe Bay. Mill Dam Meadow is a flat valley, part bog and wetland and some 450m long by 200m wide. It is surrounded by rising

ground except to the south where water courses have cut through terminal moraines to form a steep sided narrow valley. Gleaston Castle (NGR - SD 261 715) lies at the northern end of the valley and Gleaston Water Mill (NGR - SD 260 709) at the southern end. Beacon Hill (Summit NGR - SD 265711) lies adjacent to the valley to the west.

The lithology is complicated being generally limestone with chert outcrops to both east and west of the valley. The overburden is derived glacial till with a wide range and variety of erratics. There is no evidence of flint being readily available from local sources other than Antrim erratics from the Cumbrian west coast.

The Furness Peninsular is blessed with a present day mild climate rather similar to that of some of the southern coastal towns. The Isotherm passing through Bournemouth intercepts the Furness Peninsular. Mill Dam Meadow, in a low lying position surrounded by high ground, is sheltered from the westerly winds and has the benefit of an almost unique micro-climate. This local phenomenon was noted several times by Davison⁴ when he excavated Moat Farm, some 2Km to the west at Aldingham, in 1968, for the Ministry of Public Works. Perhaps a more important feature of Mill Dam Meadow is the fact that it has a permanent and very prolific water supply. Many of the valleys of the Furness Peninsular possess small lakes, tarns, meres or ponds of varying surface area and depth. There are two large tarns to the north of Mill Dam Meadow at Mere Tarn and Urswick Tarn. The outflows from both these tarns flow through Mill Dam Meadow. In addition a very prolific and constantly flowing spring emerges from the limestone on the eastern slopes of the valley and conjoins with the streams from Mere and Urswick Tarns to form a constantly fast-flowing river called Deep Meadow Beck. The reliability of water supply from these three sources is evidenced by the fact that water-powered mills have been in use in the valley from the 12th century.

The excavators are of the opinion, albeit rather cautiously, that a lake was present in Mill Dam Meadow at some stage in the past. It is not the present intention of the authors to attempt to

prove that a lake did exist in Mill Dam Meadows during the Mesolithic Period; that can only be proved by rather long and costly sediment analysis. That sediment analysis is currently being undertaken and will be published with the results of the 1995/96 season reports as a final site report. For the moment, the authors are relying on a number of geographic and archaeological facts which, when taken together, tend to point to a lake margin occupation of Mill Dam Meadow.

MILL DAM MEADOW - THE PHYSICAL GEOGRAPHY

Before the physical characteristics of the valley can be assessed, they have to be compared with two valleys to the north at Urswick and Mere where present day tarns exist. At Urswick a large, deep tarn overlies impermeable tills and outflows into Gleaston Beck which in turn flows as a surface stream into the northern end of Mill Dam Meadow. The out-flow from Urswick Tarn is neither constant nor high in volume; in fact it often dries up in the summer months. The volume of flow along the Gleaston Beck from Urswick Tarn is insufficient to have created erosion processes which could have markedly eroded any blocking moraine. The stream therefore meanders along the contour.

At Mere Tarn the standing water is entrapped by very high ground all around the perimeter of the tarn and the out-flow is insufficient in volume to erode any blocking land. The water from the tarn egresses through underground fissures in the limestone at some unknown point adjacent to the tarn and emerges at the northern end of Mill Dam Meadow where it eventually joins the flow from Urswick Tarn.

At Mill Dam Meadow the situation is rather different. Whereas both Urswick and Mere Tarns derive their water supply from their own catchment areas and small surface streams. Mill Dam Meadow is supplied by the out-flows from both Urswick and Mere Tarns, the more constant and high volume supply from the underground stream to the east of the valley and from a very large catchment area.

The geomorphology at both Urswick and Mere Tarns is different from that at Mill Dam

Meadow. At Urswick and Mere Tarns the surrounding high ground extends outwardly from the tarn perimeters for a considerable linear distance; the tarns are in effect in "hollows" surrounded by rolling hills. Whilst Mill Dam Meadow is surrounded by a similar landscape to the north, west and east, to the south there is a very short steep-sided valley which would have presented less of a barrier to the outflowing stream and would have been eroded away fairly quickly, but the rate of erosion cannot be estimated with any accuracy. However, that erosion of blocking moraines has occurred in the past is evidenced by the erosion patterns on the steep sided valley and deposits in the adjacent river valley to the south. The valley floor at Mill Dam Meadow is further evidence that the valley once contained a lake, or at least standing water across the whole valley floor. In contrast to other dry valleys in the area with their classic "U" shaped valley floors, Mill Dam Meadow is flat with the exception of several protuberances created by modern agriculture, stream diversions undertaken in 1774, and stream migration.

One of the stratigraphic contexts exposed and penetrated during the archaeological excavations is composed of such fine silts and clays that it can only have formed under still-water conditions. This context, together with others, is to be examined during the forthcoming sediment analysis. At the lowest part of the valley floor where two stream flows join, the land is wet even in drought conditions and whilst it could not be described as a bog, it could possibly be described as a peat bog in embryonic form.

A further indication that the valley may have been a lake during the Mesolithic Period is the fact that whilst there is evidence of a medieval and modern use of the land below a contour extrapolated some 3m above the present lowest point, there is no evidence of a Mesolithic occupation below that contour. The spatial distribution of surface finds from field walking and excavation finds is shown in figure two but this must be viewed with some caution particularly as most of the rising ground around the valley floor has never been subjected to deep ploughing.

THE ARCHAEOLOGICAL EXCAVATIONS - APRIL 1995

Following upon the field walking of the higher ground in late 1994, a 5m by 2m trench was set out intercepting the suspected lake perimeter and a full excavation undertaken down to late glacial deposits. The trench was located on a slight rise approximately 3m above the suspected lake margin as shown in figure two. Six contexts were encountered with the upper five being fully excavated. Details of each context are listed below.

<u>CONTEXT NUMBER</u>	<u>THICKNESS</u>	<u>DESCRIPTION</u>
1.	75mm	Turf layer with roots and vegetation and adhered loam.
2.	110mm	Dark grey/dark brown loam with open and friable texture containing root matter and vegetation.
3.	130mm	Yellow/light brown clay with grit, sand and pebble lenses, small amounts of root matter and vegetation.
4.	125mm	Brown clay and silt layer containing gravel, grit & sand
5.	180mm	Yellow clay with blue clay laminates in isolated bands. No evidence of erratics, gravel, sand or other particulates.
6.		Yellow clay with lenses of lighter clays varying in colour from yellow to brown with gravels, sand, grits and water-rounded erratics.

Contexts 5 and 6 are considered to be the most crucial to the hypothesis of an ancient lake having once existed in Mill Dam Meadow. Context 6 is typical of glacial tills throughout the area and may have comprised the impervious layer over which the lake was ultimately to

form. Context 5 is considered to have been laid down as very fine silts in the still water condition that exists at the margins of lakes and tarns. Future grain size frequency tests and cumulative frequency curves to be carried out on samples may clarify the situation.

THE ARTEFACTS

Context 1 contained evidence of market gardening in the early part of this century in the form of modern pottery, metal objects, carbon and glass. No artefacts of any significance were recovered from this context.

Context 2 contained evidence of occupation in the form of coal, slag and leather in the upper zones of the context. In the lower layers the context contained evidence of an earlier occupation in the form of large numbers of flint and chert fragments, and flint and chert microliths and bladelets.

Context 3 contained similar flint and chert assemblages to Context 2 but chert microliths dominated as opposed to Context 2 where flint artefacts were predominant. Both Contexts 2 and 3 contained carbon lenses.

Contexts 4, 5 and 6 were devoid of any evidence of occupation other than small carbon lenses throughout Contexts 4 and 5.

The artefacts from the field walking exercises were mainly blades, bladelets, cores, projectile points and fragments of flint and chert. A number of artefacts have been selected for illustration and are shown in Fig 3.

ARTEFACT MATERIAL SOURCES

Geological maps⁵ and associated literature for the region all make mention of chert outcrops within the local limestone and it would appear that tools and fragments of chert recovered are of local origin.⁶ The chert is known to have been readily available from two sources to the immediate east and west of the site. Samples of both outcrops have been obtained and whilst different in colour, it would appear that they are the sources of much of the material recovered.

The flint artefacts are from a variety of sources with black, ivory, blue and pink coloured flint artefacts and fragments recovered in varying quantity. From the excavated horizons it would appear that all the flint is patinated and is white in colour. Several pieces and fragments of the

Walney or Drigg flint, which is often referred to as Antrim flint, were recovered.

CONCLUSIONS

With so small an excavation containing soils that are both difficult to interpret and to date and with an assemblage that many would consider not to be diagnostic, the authors are not prepared to arrive at any conclusions at this very early stage in the research. Typologically, the assemblages may be considered to be Mesolithic but much work remains to be undertaken on the stratigraphy before chronology can be firmly established. The authors are also of the opinion that the position chosen for the 1995 trial trench was wrong in that it was too far down-slope and probably more in the lake sediments than in any occupation zone. A further trench site has now been established, further up-slope than the 1995 trial trench. This will be excavated in late 1995 and 1996, when it is anticipated that a more diagnostic and representative Mesolithic tool assemblage will be recovered.

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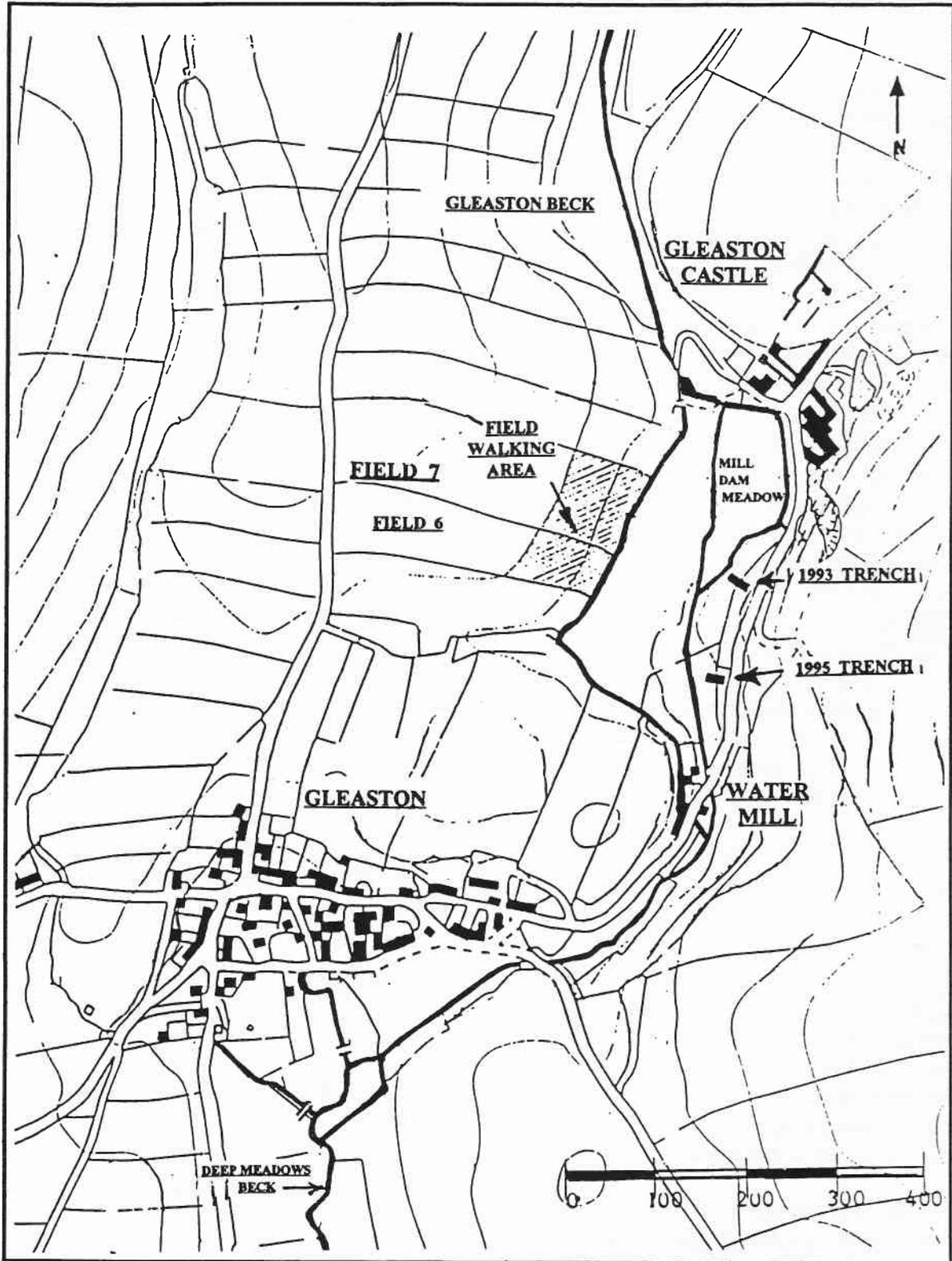


FIG 2: MILL DAM MEADOW, GLEASTON

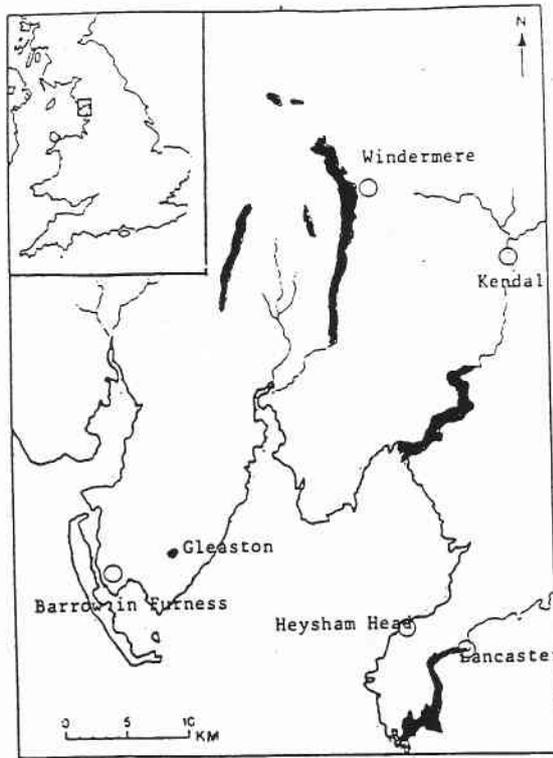
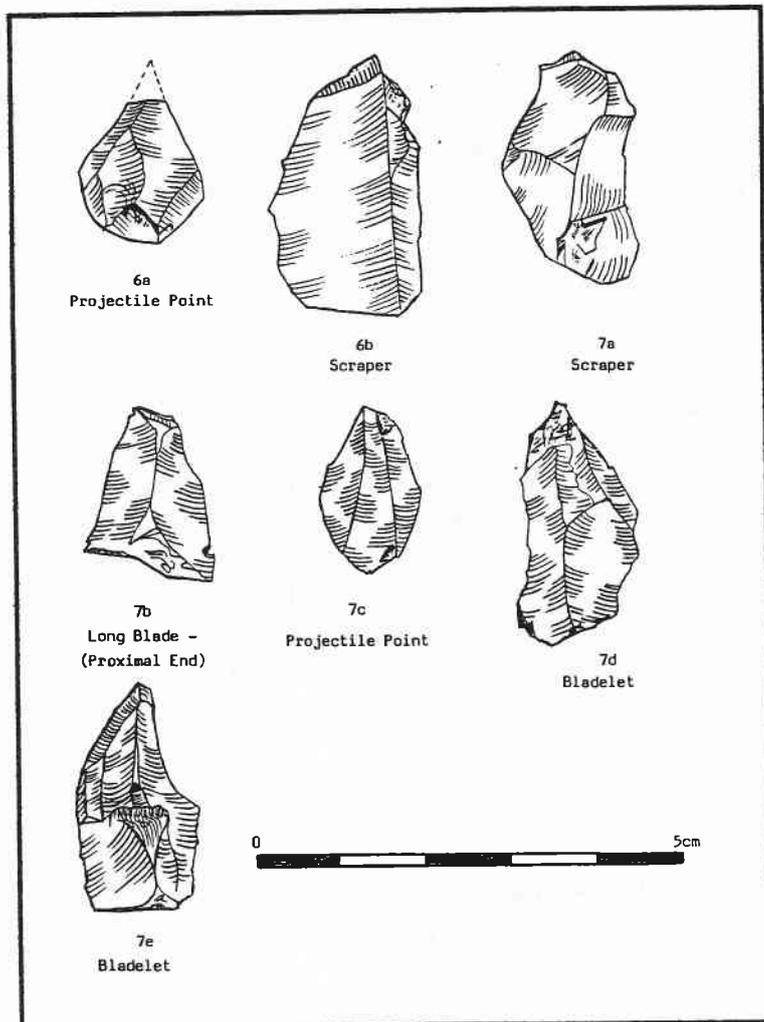


FIG 1: LOCATION OF GLEASTON, CUMBRIA



**FIG 3: FLINT ARTEFACTS
FROM MILL DAM MEADOW, GLEASTON, CUMBRIA**