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**Early Mesolithic  
Artefacts from Little  
Holtby, north of  
Leeming Bar**

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# EARLY MESOLITHIC ARTEFACTS FROM LITTLE HOLTBY, NEAR LEEMING BAR

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## **1 INTRODUCTION**

- 1.1 A study carried out in advance of the proposed A1 Dishforth to North of Leeming Improvements identified a possible archaeological site in the fields south of Little Holtby. Early Ordnance Survey maps and other 19th century sources named the area as "Cloven Hills", and referred to finds of burials and armour, which could relate to the Battle of the Standard in 1138, although this took place near Northallerton, six miles to the north-east. The identification of this site led to a programme of archaeological fieldwork to enhance the available information, resulting in the identification of an early mesolithic site of regional, or even possibly national, importance.
- 1.2 Many of the terms used in describing and discussing the flintwork from Little Holtby are defined in the glossary (appendix 2).

## **2 FIELDWORK PROGRAMME**

### **2.1 Archaeological Fieldwalking**

- 2.1.1 In the first phase of fieldwalking, the ground was rapidly scanned to identify artefacts on the surface, but not collect them. No medieval artefacts were seen, but nine prehistoric flint artefacts were recorded.
- 2.1.2 A more detailed fieldwalking survey was commissioned, in which all artefacts on the surface were collected within a grid of 10m squares. Some 165 prehistoric flint artefacts were collected, mostly towards the southern end of the field; their distribution is shown on figure 1.

### **2.2 Geophysical survey**

- 2.2.1 A geophysical survey was commissioned to identify any buried features such as ditches or pits. The technique chosen was gradiometer survey, which detects small variations in the earth's magnetic field caused by differences between soil types.
- 2.2.2 The geophysical survey results were generally disappointing, and later trial excavations showed that the few features which were identified by this method were caused by natural changes in the subsoil.

### **2.3 Trial excavations**

- 2.3.1 The flint recovered from fieldwalking suggested that a significant prehistoric site was present, and a trial excavation was undertaken to obtain more detailed information. Six trenches with a total area of 400 square metres were laid out mainly in relation to the flint scatter, but the layout of the proposed roadworks, the topography of the site and the geophysical survey results were also taken into account.

2.3.2 Most of the trenches contained nothing significant, but Trench 39B produced 3,070 early mesolithic flint artefacts. No features were clearly identified, although most of the flints came from the fill of a possible hollow terraced into the slope, which may be the remains of a structure. This could not be proved, due to the limited nature of the project. If true, however, it would be a highly significant result, as mesolithic structures are very rarely found.

### 3 THE CONTEXT OF THE FINDS FROM LITTLE HOLTBY

#### 3.1 The early mesolithic period

- 3.1.1 The bulk of the lithic material at Little Holtby belongs to the early mesolithic period (approximately 8,500 - 6,700 BC). People at this time would have been mobile hunter-gatherers, exploiting different topographic zones within the region according to the availability of resources. The region itself would have been substantially larger, as mesolithic Britain was still linked to the rest of Europe by a broad plain across what is now the North Sea.
- 3.1.2 Each small community would have used several types of site scattered across the landscape. Special purpose sites would be used for hunting, fishing, obtaining particular plant foods, or other raw materials such as flint or specific types of wood. Longer term 'base camps' would be used for processing raw materials and as meeting places for the whole community. The temporary nature of their occupation and the flimsy structures which were built means that mesolithic sites leave no surface traces such as earthworks. They are normally only discovered when artefacts come to the surface through erosion, ploughing or other disturbance. In most areas only the stone tools have survived as evidence of their activity.
- 3.1.3 Our limited understanding of the mesolithic period in northern England is largely built on evidence from two sources - poorly provenanced flint scatters from the Pennines and North York Moors, and one famous early mesolithic lowland site at Star Carr, near Seamer, south-west of Scarborough. Star Carr was excavated in the 1940s and 1950s by Clark (1954), and is unique in its wealth of lithic material (nearly 17,000 pieces), its preserved organic remains and its bone and antler technology. The Pennine upland sites appear to be very temporary, possibly summer hunting sites (Jacobi et al 1976, Jacobi 1978). Star Carr was once seen as the 'type site' for a winter base camp, but new interpretations of the evidence suggest that it may have been occupied only in the spring. The excavated part of the site could be just a dump of material from a specialist activity such as antler working, at the edge of the post-glacial lake which then occupied the Vale of Pickering (Price 1982, Legge & Rowley-Conwy 1988).
- 3.1.4 It is clear that the evidence for early mesolithic northern England has been 'filtered' by such factors as sediment deposition or erosion, and destruction by nearly 9,000 years of later human activity, particularly in the lowlands. With Star Carr now being seen as a short term specialist activity site, the evidence for any longer term lowland occupation is very scanty. The site at Little Holtby is significant because of its position in the lowland belt between the known upland sites in the North York Moors and the Pennines, because it *is* a lowland site (extremely rare due to the above factors) and most significantly because of the marked spatial patterning of the flint,

which may indicate some type of enclosing feature (see below).

### 3.2 Flint tool manufacture

3.2.1 The process of flint tool manufacture is based on reducing a piece of flint to the shape desired by removing smaller pieces from it. Flint is a particularly suitable stone for the purpose, partly because it produces a very sharp and durable edge and partly because, when hit, it fractures in a predictable way which produces thin, sharp flakes. There are three main types of tool:

'core tools', in which the raw nodule or a large piece of it is formed into the desired shape by the removal of flakes;

'flake tools', in which flakes less than twice as long as their width are shaped into tools;

'blade tools' in which flakes more than twice as long as their width are shaped into tools.

3.2.2 'Blank' flakes and blades are made into tools by 'retouching', i.e. the removal of smaller flakes to achieve the desired shape and modify the edge. This can be done by applying pressure with a pointed object, such as an antler tine, rather than by striking the blank.

3.2.3 The manufacturing process produces large quantities of waste, including cores from which flakes or blades have been removed and 'waste' or 'debitage' of small flakes (sometimes microscopic). Many larger flakes and blades are also found which appear suitable for using as tools, but which have not been retouched.

3.2.4 The processes described above can be used to produce many different shapes, sizes and styles of object, which can be used for many different purposes. Flint technology developed over many thousands of years, and a collection of flint tools of one period can usually be distinguished from one of any other period. It is important to remember, however, that flint formed only a part of the 'tool kit' of any group, most of which would have been made up of organic materials. Flint tools, in fact, are usually only *parts*, rather than whole tools; they formed edges, points or barbs for whole tools, the remainder of which were made of organic materials, such as wood, leather, bone and so on.



## 4 THE FLINT ARTEFACTS FROM LITTLE HOLTBY

### 4.1 The nature of production and the use of the artefacts

- 4.1.1 The battered cortex apparent on many pieces suggests that much of the flint from Little Holtby was probably made from river pebbles, rather than fresh flint obtained from its geological source. The inclusions and frost damage common in such flint frequently make reduction difficult and constrain the shape of the core. Blade production involved the production of a 'keeled core' in some cases, the back ridge of the next blade being prepared to guide the shape of the blade.
- 4.1.2 Only about 3% of the assemblage has been classified as specific 'tools' but, as well as the specific tool types which can be identified (eg. endscrapers, scrapers, microliths, burins and denticulates), several of the flakes and blades have been lightly retouched on the tip or sides, or appear to show signs of use. These are described as 'utilised blades' or 'utilised flakes'. Two of the endscrapers are on blades and have broken in a way consistent with being hafted. One blade has an impact fracture indicative of being used as a projectile point (a 'step bending fracture'), (Odell & Cowan, see also Barton & Bergman 1982). There are also six fragments of microliths, which could have been broken at the site or during manufacture, but are more likely to have arrived at the site already broken, in a carcass or in a haft which was to be re-used. Examples of the main tool types found at Little Holtby are shown in figure 2 and plate 1.

### 4.2 The flint assemblage in its technological context

- 4.2.1 The lithic technology across a wide area of Britain and Scandinavia was remarkably consistent in the early mesolithic. This technology has been termed the 'Maglemosian technocomplex' (Jacobi 1978). Early mesolithic technology is dominantly a 'blade' technology, in northern England largely using nodules of white flint from the Yorkshire and Lincolnshire Wolds. Nodules can sometimes be used to make 'core axes' by bifacial flaking. Otherwise nodules are reduced (knapped) by taking flakes off a pre-shaped core, either from one striking platform or two platforms in opposition. The thin blanks produced can be used as they are or made into 'microliths' for use as projectiles (arrowheads) or for other uses, by fine retouch. Thicker blades can be made into 'endscrapers', or other 'tools' such as wider scrapers and 'burins'. The discarded cores have often become more difficult to work because of 'hinge fractures', sometimes due to frost shattering of the original nodule.
- 4.2.2 Jacobi (1976) identified two different variants of the early mesolithic technology in northern England on the basis of the shape of microliths and the type of raw material used. The material from Little Holtby clearly belongs to the commoner variant, 'Cluster C'. Jacobi characterises 'Cluster C' sites as being dominated by

elongated obliquely blunted points, with often convex rather than straight or concave backing, and including neat convex endscrapers, angle, dihedral or polyhedral burins normally on flakes rather than blades, thick nosed blades and flakes trimmed to blunt points, truncated blades, blades with light continuous retouch and 'larmes ecaillees' - long wide blades with heavy retouch at both ends. These sites are also characterised by the dependence on one type of raw material, white 'Wold' flint. The raw material used at Little Holtby is predominantly this white flint from the Yorkshire and Lincolnshire Wolds (Young 1984, Henson 1985). In fact only 0.01% of the raw material used is clearly another flint type (the 'white' flint can be greyish and/or mottled, and is greyed by burning). This figure seems remarkably low; however figures for other 'Cluster C' sites (4% for Warcock Hill North, and 4.1% for Deepcar) are also remarkably low, especially as these two sites are in the Pennines and much farther from the flint source.

4.2.3 Tools and retouched pieces are individually described in the catalogue below (appendix 1). The only aspects of the assemblage which do not entirely match the characterisation of an early mesolithic 'Cluster C' site are the apparent scarcity of burins (only two recovered) and the presence of micro-denticulated blades and a microburin. Some burins, however, could have been mistakenly classified as cores.

4.2.4 The denticulated blades found at Little Holtby are quite rare; only five were recovered at Star Carr, out of a total assemblage of nearly 17,000 pieces. They are perhaps more typical of the later mesolithic period, but very little is known about their use. Some of the microliths were attributed to the later mesolithic by the excavator, due to their small size; however, their form is clearly early mesolithic - obliquely blunted points rather than the continuously retouched 'geometric' shapes of the later period. They are also not quite narrow enough to fall within the margins of later mesolithic 'narrow blade' technology (Buckley 1924) - ie. less than 5mm width (Jacobi & Switsur). There are some microblades under 2.5cm long, although these can be a by-product of the reduction process, and the presence of micro-burins normally associated with the later mesolithic may indicate either a reduction in the size of blade blanks towards the end of the early mesolithic or very limited late mesolithic activity with re-use of early material (as on some Pennine sites).

#### 4.3 The spatial distribution of lithic material in Trench 39B

4.3.1 During the trial excavations, the topsoil was removed by JCB and the underlying soil was removed by hand in two thin layers, or 'spits', of consistent thickness. When the wealth of flint present was realised, the trench was divided into 5m squares to record the location of the flint; for the second spit, 1m squares were used. This enabled the distribution of the flint artefacts within the trench to be reconstructed and analysed.

- 4.3.2 The assemblage shows a marked spatial patterning. The most significant aspect was a concentration of small pieces of debitage in two metre squares at the edge of an apparent ring of larger stones on the boundary of the possible hollow, and the sharp drop in finds numbers across this edge. The drop is sharpest where the edge of the metre squares follows the edge of this feature.
- 4.3.3 The sharp change in flint density requires some explanation. Two possible causes suggest themselves. The ring of stones could have been a natural obstacle, against which the flint accumulated as a result of natural sediment movement; or the flint could have accumulated against an artificial barrier while flint knapping was taking place. The latter seems more likely, because there is very little evidence for sediment movement, and it is difficult in any case to see how this would have caused the accumulation of flint.
- 4.3.4 The concentration of small fragments (<1cm) and microblades referred to above is significant as these finds are of the size normally overlooked by cleaning and site maintenance by hunter-gatherers (Stevenson 1991 quotes a size range of 2-9cm; most of this category lies within this range). This area, which contained both large quantities of debitage and many prepared blades, thus seems to be the locus of knapping activity. At the edge of this area there are a series of blades with very characteristic mottling which would appear to have a high probability of refitting (ie. they came from a single nodule and could be rejoined to show the sequence of removal from that nodule).
- 4.3.5 Another potentially significant aspect of the flint distribution within trench 39B was the apparent separation between the by-products or inputs to production (broken/truncated blades, debitage and cores) and the finished products (larger pieces, large blades and scrapers). This might be due to either functional or size related factors. Experimental patterns of blade production are consistent with this scale of spread of debitage from a single knapping event and show deliberate placing of larger pieces such as blades (Newcomer & Sieveking 1980), however the resolution of the excavation limits severely limits any interpretation in terms of activity areas. It is likely that much more significant information regarding specific activity areas and production processes could be recovered by further excavation, plotting the finds by exact find spot rather than metre square (Spikins, Ayestaran & Conneller in press).
- 4.3.6 The small numbers of microliths, core fragments, cores, core rejuvenation flakes etc make the interpretation of their distribution unreliable. There are only a small number of burnt finds (6%), which do occur in a possible cluster, but only in proportion to the overall artefact numbers. The low numbers of burnt finds have little significance in terms of suggesting the possible proximity of a hearth, as a relatively undisturbed scatter around two hearths at March Hill in West Yorkshire had only 11% burnt finds, including

those found actually within the hearths (Spikins 1995).

- 4.3.7 Although several different nodules must have been used to produce the variety of tools and blades in the assemblage, several thousand pieces can be generated from one knapping episode. It is not clear to what extent the assemblage represents a single or a limited number of phases of activity or repeated occupation with site maintenance and cleaning activities. Only a further extended excavation can address these issues, or the confirm the identification of a possible structure.

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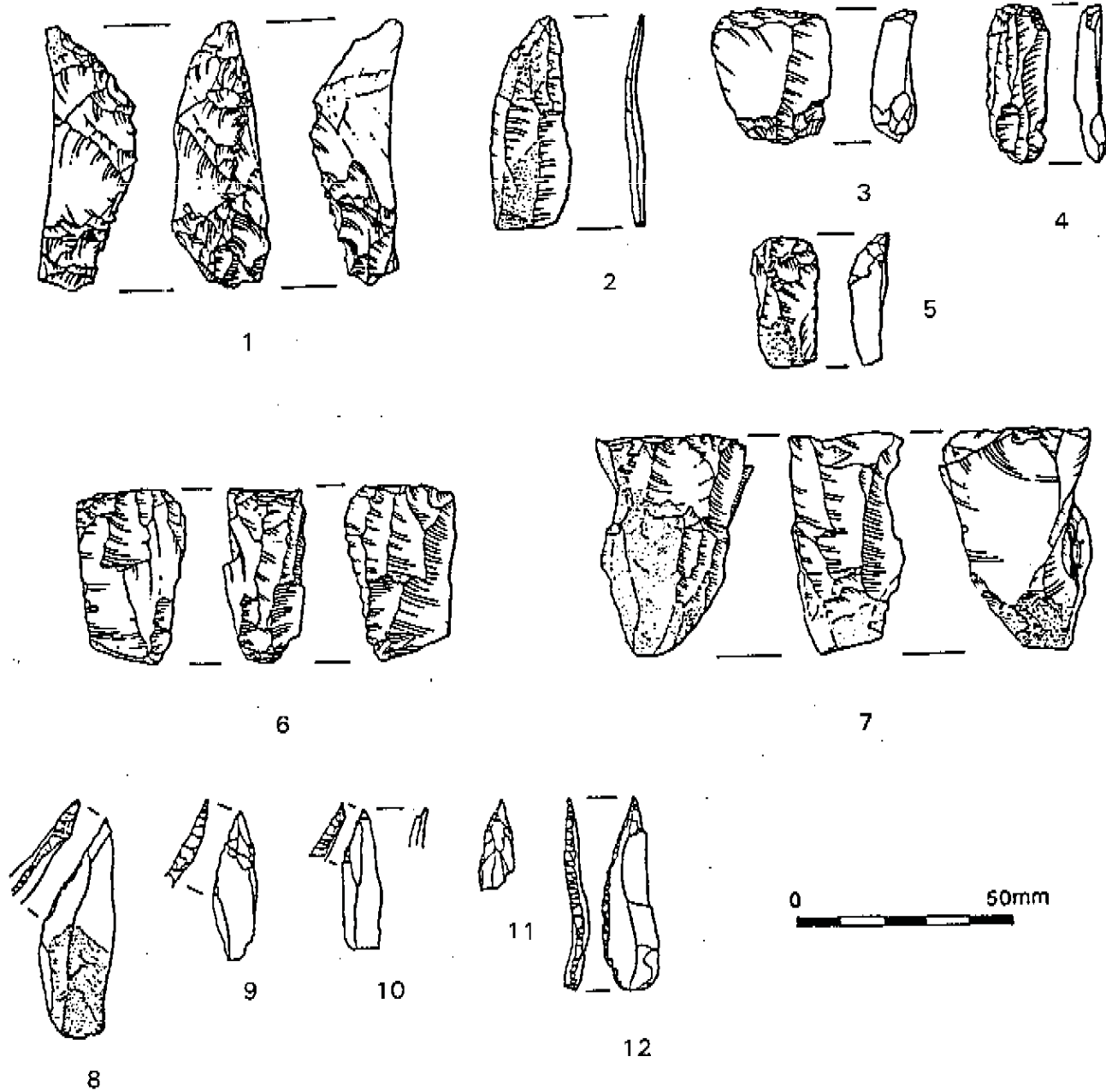


Figure 2: Flint artefacts from trench 39B

- 1 Axe sharpening flake. 39B, general clearance, 3901, I
- 2 Thin blade. 39B, spit 3902, D2
- 3 End scraper. 39B, spit 3904, D5
- 4 End scraper. 39B, spit 3904, E4
- 5 End scraper. 39B, spit 3902, E2
- 6 Core. 39B, spit 3902, C2
- 7 Core. 39B, spit 3902, E5
- 8 Obliquely blunted point (microlith). 39B, spit 3902, D1
- 9 Obliquely blunted point (microlith). 39B, spit 3904, D3
- 10 Obliquely blunted point (microlith). 39B, spit 3904, E4
- 11 Tip of microlith. 39B, spit 3902, G2
- 12 Obliquely blunted point (microlith). 39B, spit 3904, E1



Plate 1: Flint artefacts from trench 39B

- 1 Axe sharpening flake. 39B, general clearance, 3901, I
- 2 Thin blade. 39B, spit 3902, D2
- 3 End scraper. 39B, spit 3904, D5
- 4 End scraper. 39B, spit 3904, E4
- 5 End scraper. 39B, spit 3902, E2
- 6 Core. 39B, spit 3902, C2
- 7 Core. 39B, spit 3902, E5
- 8 Obliquely blunted point (microlith). 39B, spit 3902, D1
- 9 Obliquely blunted point (microlith). 39B, spit 3904, D3
- 10 Obliquely blunted point (microlith). 39B, spit 3904, E4
- 11 Tip of microlith. 39B, spit 3902, G2
- 12 Obliquely blunted point (microlith). 39B, spit 3904, E1



## APPENDIX 1: CATALOGUE OF FLINT ARTEFACTS

### RETOUCHED TOOLS, CORES, 'OTHER RAW MATERIAL' ETC.

**Note:** The catalogue below covers the main identifiable elements of the assemblage, and is structured as follows:

The text in bold indicates the find spot of the object(s). **39** is the site number for Little Holtby; **A, B, C, D, E, F** are the trenches excavated at Little Holtby. This is followed by either a four - digit number (context number) which indicates the soil deposit or spit from which the find came, or by **u/s**, meaning unstratified. The context number can be followed by a letter and a number, which identifies a 1m square. A number given in Latin numerals identifies a 5m square.

The text in italics is a basic identification of a specific piece of flint. The third line gives more details, including the dimensions (length x width x thickness) in centimetres, and a description of any characteristic features.

#### **39 u/s**

*single platform core*

(c3.7 x 3.5 x 4.0), one main face, cortex remaining opposite face to flake removals

*core*

(3.5 x 2.5 x 1.8), two opposing platforms. *hard cream/grey flinty chert*

*squat retouched flake/scrapper*

steep retouch on dorsal tip and left margin

*scraper*

(2.7 x 1.6)flake scraper retouched on all margins

#### **39A u/s**

*core fragment*

grey flint, retouched on dorsal tip

*nosed flake*

dark grey flint, continuous retouch around 'nose', base broken

#### **39B u/s**

*core*

(3.8 x 4.0 x 2.2) scraper on fragment of grey speckled chert

*endscraper*

(3.0 x 2.2)

*endscraper*

(4.2 x 3.4) on flake

*nodule*  
of flinty material -?manuport?

*notched blade*  
with two notches, retouch on lower right margin (dorsal surface, ?wear on left margin)

*convexly blunted point (microlith)*  
(2.2 x 0.6) retouch on right and left of tip

### 39B 3901 I

*bifacially flaked core axe flake*  
possibly axe resharpening flake/intended as axe resharpening flake (a larger area has been removed than was likely to have been intended)

*core fragment*  
(5.0 x 2.0cm) re-used as a *scraper*, retouch/edge damage at tip

*endscraper*  
(4 cm) on a cortical flake

*endscraper on flake*  
(2.6 x 2.2)

*retouched blade*  
large (6.3 x 3.0); retouch on proximal end

*microlith*  
base fragment

*three retouched blades*  
(4.7cm) light retouch on the left margin  
(2.1cm) light retouch on the right margin, tip broken  
(4cm) truncated, light retouch on both margins

*microlith/retouched bladelet*  
central fragment

*two obliquely blunted point (microlith)*  
(3.4 x 0.8) retouch left margin, leading edge  
(4.5 x 0.5) retouch left margin, leading edge

*central fragments of microlith*  
(2.2 x 0.8)

### 39B II 3901

*core fragment*

39B IV 3901

*piece of debitage in black chert*

39B 3902 C1

*convex scraper*  
on a thick flake (3.2 x 2.6 x 1.2)

39B 3904 C1

*two endscrapers*  
(2.8 x 2.8 x 1.0) thick endscraper, broken  
(3.4 x 2.2 x 0.7) thick endscraper, distal end retouched

39B 3902 C2

*bipolar core*  
became more difficult to work because of hinge fractures especially on the platform  
(4.0 x 2.6 x 2.5)

*core*  
(5.0 x 2.7 x 3.2) with two opposing platforms

*flake with retouchable damage*  
(4.0 x 5.5)

39B 3904 C2

*core*  
(4.0 x 3.2 x 3.2) two platforms at 90°

*obliquely blunted point (microlith)*  
(3.5 x 0.6) retouch left margin, leading edge

39B 3904 C3

*blade in variable dark grey flint*

*two obliquely blunted point (microlith)*  
(3.2 x 0.9) retouch left margin, leading edge  
(4.2 x 1.0) tip broken, retouch down half of left margin

39B 3904 C4

*blade ? use damage on left margin*

**39B 3902 D1**

*core fragment*  
small (2.5 cm)

*obliquely blunted point (microlith)*  
retouch on left margin, leading edge  
(5.0 x 1.5) appears to be unused

**39B 3904 D1**

*core*  
(5.3 x 2.7 x 1.8) two opposing platforms, one margin retouched to form a point/border

*denticulated blade*  
(2.4 x 0.7), retouched on left margin

*retouched bladelet*  
prob central portion of a microlith

*blade with possible use damage*  
(4.6 cm) left margin

*larme ecaille*  
(4.5 x 3.7) wide blade/flake with very heavy retouch

**39B 3902 D2**

*core fragment*  
(5.3 x 2.8 x 1.2)

*blade*

*obliquely blunted point (microlith)*  
(2.5 x 0.8) retouch left margin, leading edge

**39B 3904 D2**

*core fragment*  
(5.2 x 2.8 x 2.7) with cortex

*core*  
(3.8 x 2.5 x 2.2) two platforms at 90°

*two blades ? use damage*

**39B 3902 D3**

*endscraper*  
(2.6 x 2.2) on flake

*three obliquely blunted points(microlith)*  
(2.3 x 0.7) retouch left margin, leading edge  
(2.4 x 0.8) retouch left margin, leading edge  
(2.6 x 0.9) retouch on right margin, grey flint

small piece of *debitage* in grey flint

### 39B 3904 D3

*core*  
(4.5 x 2.5 x 2.2) re-used as a *scraper*, fine retouch on two margins

*double sided convex endscraper*  
(3.1 cm)

*two endscrapers*  
(3.3 x 2.6) on flake  
(4.3 cm) on an angular flake

*notched blade/flake* (broken)

*two very large blades*  
(> 7 cm) possible use damage

*retouched flake*  
(5.5 cm) light discontinuous retouch on both margins

*retouched cortical flake*  
(2.2 cm) light retouch

*blade with possible wear*  
(4cm)

*retouched blade*  
(4cm) light retouch on proximal end

*two obliquely blunted points (microliths)*  
(3.5 x 0.9) retouch on left margin, leading edge.  
(3.6 x 1.1) retouch left margin, leading edge, tip broken

### 39B 3902 D4

*core*  
(5.0 x 5.0 x 2.0) long thin core one main platform, subsidiary platform at 90°.

*core fragment*  
retouch on one margin

piece of grainy chert *debitage*

39B 3904 D4

*core*

(4.4 x 3.2 x 1.7) single platform core, cortex remaining at 'back'

*grey flint truncated blade*

*retouched/edge damaged blade*

*convexly blunted point*

(2.4 x 0.7) retouch around base, tip broken

*three obliquely blunted points (microliths)*

(3.8 x 0.6)

(3.9 x 1.0)

(2.6 x 0.9) - tip broken

39B 3902 D5

curved *retouched bladelet* (3.3cm), retouch on dorsal surface, left of tip

39B 3904 D5

*endscraper*

core preparation at base, retouch on tip

*two denticulated blades*

truncated blade (3.2 x 1.0), micro-denticulated on the left margin

(4.0 x 0.7), denticulated on the right margin

*notched bladelet*

(2.0) broken tip, left on left, possibly micro-burin

39B 3902 E1

*retouched flake*

fine retouch on steep face of the dorsal surface

*core rejuvenation flake*

39B 3904 E1

*two retouched blades*

(4.7), retouched on left margin

(3.8), retouched on right margin at tip

*flake of grey banded flint*

*obliquely blunted point (microlith)*

retouch on left margin, leading edge; end of tip broken (could be due to trampling)

39B 3902 E2

*core rejuvenation flake*

(3.3 x 3.0) all of core platform removed

*convex endscraper*

either in truncated blade or broken at base, the latter seems more likely as signs of use of the margins continue to truncation

*retouched blade*

(6.0), light retouch on right ventral surface

*two retouched bladelets*

*large squat retouched flake*

(5.4) retouch on margin of bulb scar

*flake*

in mottled grey flint

*microlith base fragment*

39B 3904 E2

*possible use damaged blade*

*microlith fragment*

probably tip

39B 3902 E3

*core*

(4.2 x 3.6 x 2.5) two opposing platforms and one at 90°

two *microblades* in grey flint

possible *used blade* (found in wet sieving)

39B 3904 E3

*notched flake/bladelet*

small (1.0), tip broken

*retouched blade*

(3.9) retouch on left tip

*obliquely blunted point (microlith)*

(3.3 x 0.9), retouch on left leading edge (from EAU sample)

six pieces of *debitage* in grey flint (wet sieving)

39B 3902 E4

*core*

(4.0 x 1.0 x 1.7) small narrow core, single platform

*core*

(5.8 x 3.6 x 2.2) two opposing platforms with one main 'face' and flint imperfections on 'back'

*denticulated blade*

(4.0 x 1.2), retouch right margin ventral surface

*notched blade*

(4.2) proximal left margin (dorsal surface)

*retouched blade*

(4.5) light retouch tip of proximal right margin, dorsal surface

*retouched nodular flake*

(5.4 x 4.2)

*retouched microblade/microlith central fragment*

light retouch half of one margin

*medium sized blade in grey flint*

*many apparently prepared blades*

39B 3904 E4

*core*

(4.7 x 4.0 x 2.2) one main 'face' and two opposing platforms, cortex on 'back'

*core*

(4.5 x 3.5 x 1.9) two platforms at 90°

*four neat convex endscrapers*

(2.0 x 0.7) grey flint, broken, on blade, hafted?

(1.5 x 1.5) on blade, cortex on margin, hafted?

(2.2 x 1.5) on flake

(2.2 x 1.0) broken end of larger piece

*convex endscraper on notched blade*

notch on lower right margin, two notches on left margin could be through use

*four retouched flake/blades*

(4.5) retouch on part of left margin

(2.0 x 2.0) retouch on two margins, which are at 90°

(2.3) truncated micro-burin, retouch on left margin

(?) light retouch on left tip



*obliquely blunted point (microlith)*

(2.0 x 0.9) retouch on left margin, leading edge

\*\* impact fracture (step bending fracture), characteristic of use as a projectile

*five obliquely blunted points (microliths)*

(5.3 x 1.0) long blade, retouch left margin leading edge, oblique retouch on left margin, light retouch on ventral surface, lower left margin

(3.9 x 1.2) on tapered blade, retouch left margin leading edge and remainder of left margin

(3.5 x 1.1) retouch left margin leading edge and base, point broken

(2.8 x 0.6) tip broken

(3.0 x 0.5) retouch on all of left margin

*central fragment of microlith*

(1.0 x 0.8) retouch left margin near both breakage points

### 39B 3902 E5

*bipolar core*

upper platform dominant; frost shattering has caused hinge fractures making further reduction difficult

*core*

(5.0 x 2.6 x 1.6) one main platform

*wide endscraper*

(3.4 x 3.0 x 0.7) on flake

*tip of obliquely blunted point (microlith)*

retouch on left leading edge

*point (microlith)*

(3.7) retouch on the right margin, broad tang (unfinished?)

*notched debitage/microblade (wet sieving)*

### 39B 3904 E5

*three obliquely blunted points (microliths)*

retouch on left margin, leading edge

(4.3 x 1.2) grey chert

(3.0 x 1.0)

(3.0 x 0.7) very thin blade

### 39B 3904 F1

*core rejuvenation flake*

(5.5 x 3.5 x 1.4) whole platform removed

*microblade*  
in dark grey flint

**39B 3902 F2**

*core fragment*  
(small - 1.8cm)

*notched blade*  
(4.2) notch proximal left margin

*retouched blade*  
(4.4) blade retouched at proximal end

*retouched flake*  
retouch on dorsal edge

*microblade*  
clear whitish flint

*convexly blunted point (microlith)*  
(3.8) retouch half of right margin and left tip

**39B 3904 F2**

*blade, possible use damage*  
(2.5) distal end truncated

*flake scraper*  
(3.1 x 2.7) cortical flake, steep retouch making two opposed 'blunt' ends

*retouched flake*  
(3.7 x 3.7) thick flake with retouch/edge damage on two margins

*retouched blade*  
(3.5) retouch on tip, grey flint

*retouched microblade*  
orange coloured flint

*microlith tip*

*three pieces of debitage*  
two in grey flint, one in grey chert

**39B 3902 F3**

*core*  
(1.8) tiny fragment

*retouched microblade*

(1.8) narrow microblade, retouch on proximal left margin

*two microblades and one medium blade*

grey flint

*obliquely blunted point (microlith)*

(1.8 x 0.7) distal and proximal ends both broken

#### **39B 3902 F4**

*core*

(4.4 x 3.9 x 2.9) one main platform, cortex remaining on 'back'

*endscraper*

(4.6) on a curved flake

*small flake scraper*

(2.5)

*retouched blade*

retouch on left margin (tip truncated)

*two retouched flakes*

*microblade*

grey chert

*five microblades*

(use damage?)

*microburin*

(2.0)

*obliquely blunted point (microlith)*

(2.8 x 0.6) retouch on left margin, leading edge

*microlith fragment*

(1.0)

#### **39B 3904 F4**

*broken blade*

grey flint

#### **39B 3902 F5**

*large blade*

possible use damage on right margin

*microlith tip*  
point broken

*point (microlith)*  
retouch on both margins to a point at the proximal end, right margin making a  
'tang' at the distal end

**39B 3904 F5**

*core*  
(4.0 x 4.8 x 4.2) three platforms

**39B 3904 G1**

*core*  
(6.0 x 4.0 x 3.5) one main platform with flake removals in both directions

**39B 3902 G2**

*obliquely blunted point (microlith)*  
(2.2 x 0.7) retouch on left margin, leading edge

**39B 3902 G3**

*obliquely blunted point (microlith)*  
(2.2 x 0.7) retouch on left margin, leading edge

**39B 3904 G3**

*flake with retouch/use damage on burin-like facet*  
(3.0)

**39B 3904 G5**

*angle burin*  
(3.4) on flake

*blade with possible use damage*  
(4.0)

**39B 3902 H3**

*core fragment*  
(3.8 x 1.7)

**39B 3902 H4**

*retouched/use damaged circular flake of nodule*  
(5.5cm round)

39B 3904 H4

*retouched flake*  
(4.0 x 3.0) retouch on one margin

## APPENDIX 2: GLOSSARY OF TERMS USED IN THE CATALOGUE

axe	a tool type made on a core rather than a flake and interpreted as a chopping tool
bifacial working	shaping an implement by removing flakes from both faces, using the intended edge as a striking platform - often used for core tools such as axes
bipolar core	core with a platform at either end
blade	flake which is more than twice as long as its width
bulb (of percussion)	a bulge on the ventral surface of a blade/flake close to the proximal end, caused by the shock-wave of the blow which removed the flake from the core
burin	form of flint implement, traditionally interpreted as a type of engraving tool
core	piece of flint from which flakes/blades are struck; in the mesolithic often pre-shaped by flaking to enable blades/flakes of a predictable size and shape to be struck from it
core rejuvenation flake	flake struck to re-shape a used core to enable further flakes/blades to be struck from it
cortex	the rough, chalky outer layer on a nodule of fresh flint; sometimes also refers to the battered surface of flint found in river or glacial gravels
debitage	small pieces of waste flint produced during reduction
distal end	the end of a blade/flake away from the platform
denticulation	a form of very fine retouch; many very tiny notches made along the edge of a flake/blade, giving the appearance of tiny teeth
dorsal surface	the surface of a blade/flake which originally faced away from the core before the flake was struck - usually shows the scars from the removal of previous flakes
endscraper	a form of flint implement retouched on one end (usually the distal end) to form a blunt, serrated edge
flake	a piece of flint removed from a core, which is less than twice as long as it is wide
hinge fracture	an error which occurs when a blade or flake detaches from the core with a thick, rounded end instead of a sharp thin one

margin (left/right)	the sides of a flake/blade
microlith	a class of flint implements characteristic of the mesolithic period, usually small and made on blades
nodule	a piece of flint from which a core is made - flint in its natural state, ie an amorphous lump forming in a chalk bed and covered with a chalky cortex. Can also refer to pebbles of flint found in gravel deposits or boulder clay, moved away from the original geological source by glacial or river action
platform	the face of a prepared core which is struck to remove a flake
point	any flint implement intended to form the point of a projectile
proximal end	the end of a flake or blade which was struck to remove it (ie the end which includes part of the platform)
reduction	the process of removing flakes/blades from a core
retouch	small (sometimes microscopic) flakes removed from a 'blank' flake or blade in the process of shaping it into a specific tool
scraper	a specific tool type made on a flake or blade, with retouch making the working edge very steep and often serrated, interpreted as an implement for working hides etc
ventral surface	the surface of a flake or blade which originally faced into the core - will show the bulb of percussion, and often ripples, resulting from the blow which removed the flake from the core