

Lithics

The excavation and watching brief produced an assemblage of 640 worked lithics and 50 natural pieces (discarded). The general provenance of the group was sub-alluvial providing a *terminus post quem* in the Early Bronze Age. The assessment suggested that the material may represent a palimpsest from Upper Palaeolithic, Mesolithic and Neolithic activities. A coarse measure of the relative input from these periods can be seen by the chronologically distinctive tool types and technological breakdown of the debitage products. The assessment suggested that most of the material was Neolithic. Early Neolithic material is very sparse. It is assumed that the Neolithic flint reflects the pattern seen with the ceramics, that is, it is mostly of Middle Neolithic date.

The material has been grouped into 58 of the stratigraphic groups. Most of the material was spread thinly across 57 of these groups such that detailed reporting by group is not useful. An apparent exception is the 101 pieces from the burnt mound, group 2050. However, that group is a palimpsest evident from the parallel study of lithic wear analysis and ceramics.

An assemblage breakdown by stratigraphic group is given in Table 1. What follows here is a discussion of the techno-typological attributes of the assemblage as a whole but with attempts to disentangle the palimpsest.

Raw material

The vast majority of pieces were of semi-translucent flint typical of local till sources (Henson 1985). There were a very few pieces of opaque flint derived from the limestones of Lincolnshire and Yorkshire, although these may also occur occasionally in till deposits in the Midlands (ibid and Andy Myers pers. comm.) In addition to the flint artefacts there were also five fragments of polished axe, one of a likely Group VI source and four of a creamy-white chalky flint, possibly from the Louth area, Lincolnshire (J. Humble pers. comm.). A likely Charnian axe fragment was found in earlier evaluation works at the site (see below).

Debitage

The debitage offers some broad measure of the levels of admixture of the Mesolithic and Neolithic material. The Mesolithic component, as indicated by pieces from true bladelet technology (Holgate 1988; Ford 1987), is appreciable at c 12.8%. It has been suggested that in much of the Midlands the degree of patination on flints can give a coarse measure of chronology (Cooper forthcoming). This argument is supported at many sites in the region where diagnostic Mesolithic tools are often patinated but Neolithic and later tools are not. If patinated flakes and blades are assumed to also be earlier the potential Mesolithic component is slightly higher at 15.4%. Similar proportions were reported for the palimpsest of lithics at Eye Kettleby, Leicestershire (Cooper forthcoming).

The Neolithic flint debitage is of flake technology with no evidence for platform preparation but with some attempts to strengthen the core front by overhang removal. The cores were quite small on the whole and most were unclassifiable displaying

multiple platforms. Many were exhausted and presumably were discarded where found.

Tools

Microliths

The four examples included two obliquely truncated points, a crescent and a rod form. Two other bladelets were retouched but lacked the typical backing retouch of microliths; they may represent unfinished forms. The crescent and rod forms can be regarded as Late Mesolithic whereas the obliquely truncated points can occur from the terminal Late Upper Palaeolithic to the Late Mesolithic. One of the points had a deep white patina, suggesting it was possibly older than the other microliths.

Scrapers

The 21 scrapers were mostly of short end type, although one was circular and another was a double end type. A scraper with an additional spur had a prepared base, a feature sometimes seen on Late Neolithic pieces.

Serrated pieces

There were 16 serrated pieces (micro-denticulates) identified macroscopically with another two possible examples identified in microwear analysis (see 'utilised pieces'). Their supports were five bladelets, five blades and six flakes. Seven display a thin band of lustre or gloss along the serrated edge, a feature often associated with this type of tool (Clark *et al.* 1960, 217). This tool type has a long currency from the Early Mesolithic (Barton 1992) to the Early Bronze Age (Bradley 1970), but are highly prolific in the Early and Middle Neolithic (Smith 1965; Middleton 1998, 230; Robertson-Mackay 1987, 111).

Utilised pieces

Four pieces displayed signs of utilisation in having continuous small retouch nicks along their edges (cf Smith 1965). Two of these had thin bands of lustre along their edges and the microwear analysis has indicated that they are worn examples of serrated pieces.

Axes

Five fragments of polished axe were recovered including a fragment of a suspected Group XX source and four pieces in a creamy white flint. The similarity in raw material and the proximity of the four pieces would suggest that they may have derived from a single axe.

In addition another polished axe fragment was located during earlier works at the site (1997-89, sf 1): a blade from an axe of fine-grained tuff, also likely to be of Charnian origin i.e. Group XX (T. Clough pers. comm.; Implement Petrology No. DB 290).

Knives

There were five knives with four being flint examples and one on a flake from a polished axe.

Arrowheads

Two leaf-shaped arrowheads included a Green type 4a made with translucent flint and a fine lozenge-shaped example made on a greyish-brown opaque flint. Five transverse arrowheads included two of chisel type (one broken), two of British oblique type and a further unclassifiable example. One of the chisel types is noteworthy as being exotic in that it was made with an opaque, mottled orange-brown and beige coloured flint while the remaining four were of local till flint.

Laurel leaves

Three examples of this class were found, one complete and two fragments. The latter have transverse breaks characteristic of knapping accidents on bifaces.

Discussion

The assemblage included material ranging from possibly the Late Upper Palaeolithic to the Late Neolithic. The potential Upper Palaeolithic material comprised a blade core with platform edge preparation (partial edge faceting) and some blades in proximity, all of the material exhibiting a deep white patina in contrast to the diagnostically younger pieces. An obliquely truncated point displayed similar patination but typologically this can span from the Terminal Palaeolithic to the Early Mesolithic. Mesolithic material included microliths and related forms, and debitage displaying true bladelet technology. The earlier prehistoric material is relatively sparse and must indicate sporadic activities within the floodplain zone.

It would seem that the vast majority of the assemblage could be assigned to the Middle-Late Neolithic. The only diagnostic tool forms within this time period are the transverse arrowheads. However, Laurel leaves and leaf-shaped arrowheads can occur in the Middle Neolithic while polished axes extend throughout the Neolithic period. The remaining tools including scrapers, knives and piercers can all sit comfortably within the Peterborough Ware occupation of the site. It is of interest that the Neolithic lithic scatter is from the same areas that Mesolithic activity is recorded.

The flint was rarely deposited in pits, the majority being recovered from the old land surface. While the range of activities undertaken at the site appears domestic in character (butchery, plant harvesting, hide scraping etc) the small size of the assemblage would appear to suggest limited, task specific occupation. Donahue points to the limited evidence for seasonality from the microwear study i.e. late summer or early autumn.

Comparison with the lithic assemblage from the adjacent Neolithic site to the north-east (Saville 1979) shows some similarities including the presence of Mesolithic material and the proportions of tools and cores. Saville notes, with some surprise, the high incidence of retouched and utilised material (20.5%), the low incidence of cores (6.9%) and the very small size and exhausted condition of the cores. At face value such proportions might indicate that knapping took place off site - however, Saville regards this as unlikely, and suggests that collection bias and the technological restraints imposed by use of a pebble flint resource may account for this "peculiarity of its internal composition." The current assemblage has 15% retouched/utilised pieces and 7% cores, all extremely small examples.

The small collection from Willington is a significant addition to the East Midlands lithics database. Many past workers have commented upon the difficulties of

comparing assemblages from the region with the widely published material from southern England (Moore and Williams 1975; Garton and Beswick 1983; Saville 1979). Although there have been recent claims that this situation prevails (Head and Young 2000) this is not apparent to the author (Cooper and Humphrey 1996; Cooper forthcoming). The Willington assemblage thus helps to further challenge the notion that lithic assemblages from the Midlands cannot be compared to the well-researched areas of southern Britain. While size may be a difference the technological methods and abilities and the tool typology are very comparable to the contemporary southern assemblages (Humble 2006; Cooper forthcoming).

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	Flake	Flake core	Blade	Blade core	Bladelet	Bladelet core	Chip	Shatter	Scraper	Knife	Serrated bladelet	Serrated blade	Serrated flake	Denticulate	Truncated bladelet	Transverse arrowhead	Burin	Retouched flake	Piercer	Axe frags	Laurel leaf	Leaf arrowhead	Utilised blade	Retouched blade	Retouched bladelet	Utilised flake	Microolith		
801	1																											1	
802	4				3																							7	
803	5	1	1				1		1	1																		10	
804					1																							1	
805	1	1																										2	
807	1																											1	
808	4		1																									5	
809	4	1			2		3				1																	11	
811	1																											1	
813		2						1																				3	
814	1																											1	
2100	1																											1	
2501	3																											3	
2502	1																											1	
2503	7	1	2		1		2			1																		15	
2504	9	1	3		6	1	3						1		1	1												26	
2505	5	3	1						1								1		1									12	
2506	5	2	2		2		1							1						1								14	
2507	2																											2	
2508	16	1			1											1			1									20	
2509	1		2						1										1									5	
2510					1																							1	
2511	16		1		1		1	2		1											3							25	
2512	6				1																1						1	9	
2514	3				1				1		1																	6	
2515	1					1																						2	
2516	12		1		4		1		1			1								1								21	
2517	1																											1	
2518	23	2	5	1	5		1	1	2							1										1		42	
2519					1		1													1								3	
2521	1	2																										3	
2522	21	2			1		3	2	2											2	1		1					35	
2523	1					1																						2	
2524	7		1		2			1	2											1		1	1					16	
2525	15	3			3				2					1														24	
2526	7	1																		1								9	
2527	1								1																			2	
2528	1																												1

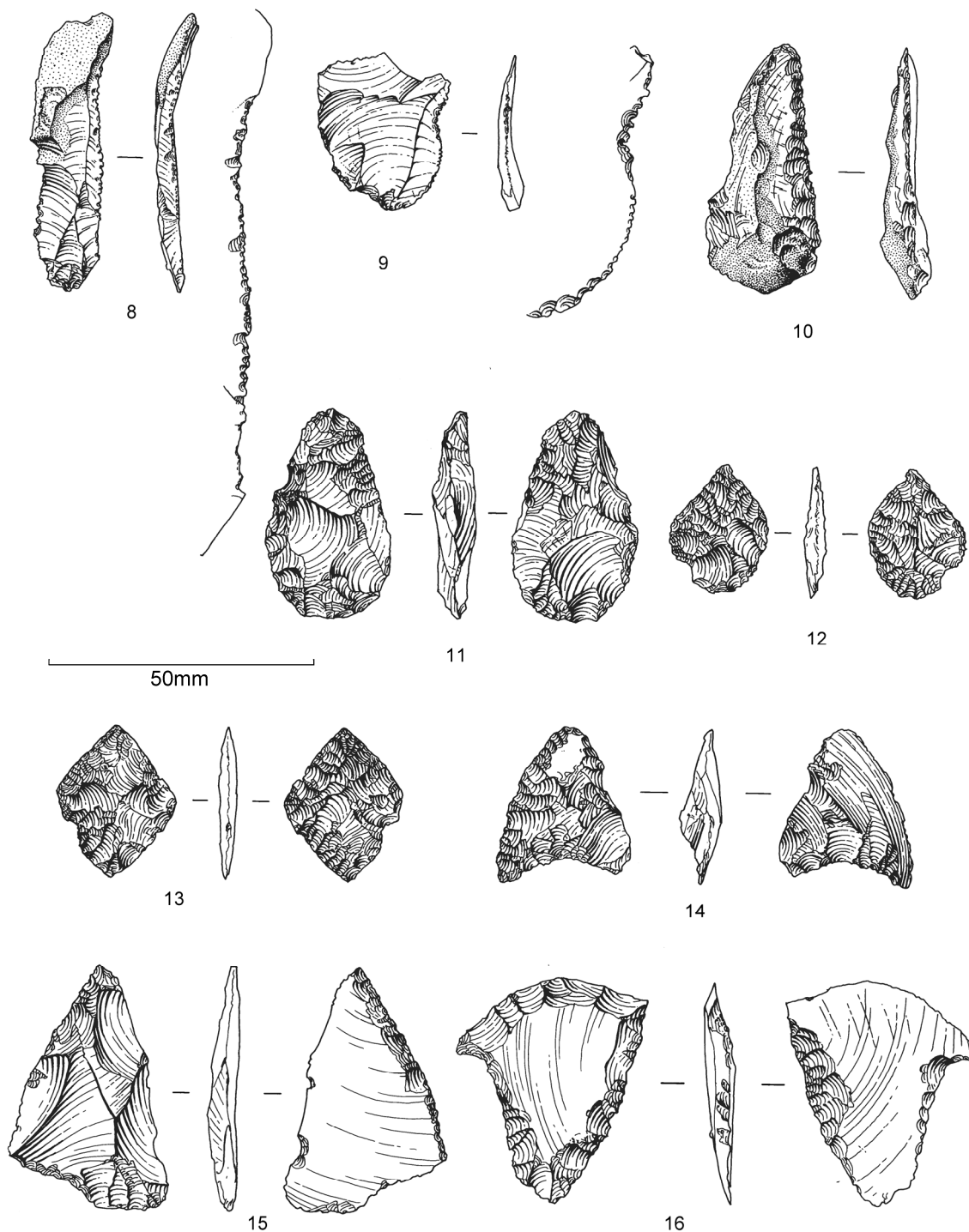
	Flake	Flake core	Blade	Blade core	Bladelet	Bladelet core	Chip	Shatter	Scraper	Knife	Serrated bladelet	Serrated blade	Serrated flake	Denticulate	Truncated bladelet	Transverse arrowhead	Burin	Retouched flake	Piercer	Axe frags	Laurel leaf	Leaf arrowhead	Utilised blade	Retouched blade	Retouched bladelet	Utilised flake	Microlith	
2529	17		1		2		1						1										1	1	1	1		26
2530	4											1						1										6
2531	1								1																			2
2532							1																					1
2533	13					1	2	1										1										18
2534	2																											2
2536	1	1			1																							3
2537		1			1								1					1										5
2538		1																								1		2
2540	6		1		2		2	1																1				13
2541	19	1	3		5		5		1	1	1	2	2					2			1	1						46
2550	59	4	4		12	3	6	3			1	1	1			2		4					1					101
2551	1							1																				2
3100	1	2																										3
4500		1																										1
4501	2				1													1										4
4502	4	1			1			1																				7
4503	2																											2
4550			1																2									3
4551					1																							1
Unstrat	23	7	1		1		3	2	4	1	1							2						2				47
Total	23	7	1	1	2	7	37	16	21	5	5	5	6	2	1	5	1	20	5	4	3	2	2	4	2	2	4	193

Table 1: All lithics by group.

Catalogue of illustrated pieces.

- 1 Blade core (898)
- 2 Obliquely truncated point (901)
- 3 Polished axe fragment (1)
- 4 Knife (134) on a blade struck from a polished axe
- 5 Obliquely truncated point (372)
- 6-10 Serrated pieces (861, 1015, 321, 727 and 125)
- 11 Laurel leaf point (218)
- 12 Leaf-shaped arrowhead (1000)
- 13 Transverse arrowhead, British Oblique type
- 14 Lozenge-shaped arrowhead
- 15 Transverse arrowhead, British Oblique type
- 16 Transverse arrowhead, Chisel type

All lithics drawn by D.Hopkins.



Lithics 8-16