Channel Tunnel Rail Link

CTRL UK Limited

Oxford Wessex Archaeology Joint Venture

The worked flint from Eyhorne Street, Hollingbourne, Kent (ARC 420 68+100-68+500 99)

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1 INTRODUCTION

A total of 396 pieces of struck flint, including 138 chips, were recovered from the targeted watching brief at Eyhorne Street (Table 1). A further 488 fragments (4516 g) of burnt unworked flint were retrieved from 17 contexts (Table 2). Excluding a small residual Mesolithic component and some possible early Neolithic flints, the material can largely be dated to the late Neolithic and early Bronze Age on technological grounds. About one third of the material was found in Iron Age or undated features and is therefore likely to be redeposited. There are four distinct groups, consisting of material which may date from the early or middle Neolithic, probable Neolithic material in tree-throw holes, and groups associated with Grooved Ware and Beaker/Urn pottery. These groups will be looked at separately from the rest of the assemblage.

2 PROVENANCE

The worked flint was evenly spread between 38 contexts, including pits, postholes, ditches, tree-throw holes and layers. Only two contexts contained more than 25 pieces. Context 22, the primary fill of a Beaker pit, contained 73 pieces of flint and context 189, a tree-throw hole fill, contained 103. Most of the burnt unworked flint was recovered from contexts that also contained worked flint. A total of 61 pieces from seven contexts are the exception.

3 RAW MATERIAL AND CONDITION

Where identifiable, virtually all the raw material is from gravel flint sources. These are likely to be locally found. There is only one piece of Bullhead flint and no evidence for the use of chalk flint. Bullhead flint is found in the Bullhead Bed at the base of the Reading Beds (Dewey and Bromehead 1915, 18-19) and is identified by a green cortex with an underlying orange coloured band. The nearest source of Bullhead flint is on the north Kent coast. It is, therefore, a non-local material. However, most of the material is of an indeterminate raw material.

Condition is good, with 84% of the material assessed during attribute analysis recorded as fresh or slightly damaged. Surface alteration is minimal, with just 24 pieces, from seven contexts, showing signs of cortication. A total of 36% suffer breaks and 13% show signs of burning.

Table 1. Summary of worked flint by phase and feature.

Phase	**Possible early - middle Neolithic features**					**Neolithic tree-throw holes**				**Grooved Ware pits**			**Beaker/ Urn features**				**Remaining assemblage**	**Total**
Feature	Pit 100			Ditch 116	Pit 126	TTH 188	TTH 207	TTH 213	TTH 183	Pit 19	Pit 21	Pit 67	Pit 23		Pit 60		Various	
Stratigraphy	Primary fill	Secondary fills		Primary fill	Primary fill	Primary fills			Secondary fill	Primary fills			Primary fill	Secondary fill	Primary fill	Secondary fill		
Contexts	101	103	104	115	127	189	208	214	181	18	20	68	22	24	61	62		
Flake	4	7	1	3	4	9		1	4	7	2	1	38	1	8	1	82	173
Blade-like flake	1				1		1	1		1			1		1		4	11
Blade	1				1	5					1		2		1		5	16
Bladelet									1				4				1	6
Chip	2			2	1	87			2	1			16	4	5	5	13	138
Rejuvenation flake				1		1											4	6
Irregular waste	1				1	1				7	2		3				2	17
Multi-platform flake core					2								3				2	7
Single platform flake core					1												1	2
Core on a flake																	1	1
Tested nodule													1					1
Microlith	1																1	2
End and side scraper											1		3				1	5
End scraper													2				1	3
Fragmentary arrowhead																	1	1
Retouched flake																	6	6
Retouched blade																	1	1
Total	10	7	1	6	11	103	1	2	7	16	6	1	73	5	15	6	126	396

4 TECHNOLOGY AND DATING

4.1 Possible early to middle Neolithic groups

A number of features in the southern part of the site contain early to middle Neolithic pottery, all of which may be residual. It is possible that the flint in some of these features (pit 126, feature 100 and ditch 116=136) is also related to earlier Neolithic activity. However, in the absence of more definite dating evidence it is impossible to determine whether or not the flint in these contexts is residual.

Pit 126 (fill 127) produced unmodified waste and cores, the flint being the only artefacts recovered. The cores are corticated and have platform edge abrasion and the single platform flake core has some blade-like removals (Illustration AH-460). These elements are characteristic of Neolithic assemblages and this feature may therefore be Neolithic in date.

The earlier Neolithic pottery in the uppermost fill (104) of feature 100 is possibly residual. There are charred cereal grains which may date from the middle Bronze Age or later in the layer below (103). This feature contained unmodified waste and one residual microlith (Table 1). Most of this material was recovered from the primary fill (context 101), with a few flakes in contexts 103 and 104. The flint was associated with the pottery but no other finds. Clearly, it is impossible to accurately date this feature. The microlith in context 101 is of Jacobi's type 1b (Jacobi 1978, 16; fig. 6), consisting of an obliquely blunted point with direct retouch on the left and right sides. This type is usually associated with early Mesolithic industries, but is also known to occur in later Mesolithic assemblages. In either case, it is more clearly residual than the rest of the material.

Ditch 116 (fill 115), which may have been associated with feature 100, contained unmodified waste and one rejuvenation flake (Table 1) but no other finds. Rejuvenation flakes are consistent with a Neolithic date.

4.2 Neolithic tree-throw holes

Along the south west edge of the site were a group of tree-throw holes, four of which contained flint (Table 1). Tree-throw holes 183, 207 and 213 (fills 181, 208 and 214 respectively) contained a small amount of unmodified waste. However, tree-throw hole 188 (fill 189) contained considerably more material. The large quantity of chips suggests that knapping took place either directly into the hole or close by. The significant blade element suggests a Neolithic date (Ford 1987, 79; table 2) with which rejuvenation flakes are consistent.

4.3 Grooved Ware associated pits

Of the Grooved Ware associated pits, three contained flint (Table 1). Pits 19 and 21 (fills 18 and 20 respectively), two of the larger features in the group, contained a range of unmodified waste flakes and debitage. Of this material, 32% are broken and 77% have suffered light to moderate burning, the latter being a fairly high proportion. Posthole 67 (fill 68), which is possibly a separate feature, contained one flake.

Where possible, attribute analysis was performed on the assemblage. Little information about hammer mode can be given with only one example each of hard and soft hammer struck pieces recorded, the rest being indeterminate. All the removals have plain butts, two of which have platform edge abrasion, suggesting that some care was taken during knapping. Most of the pieces are non-cortical with just three side trimming flakes, two of which have less than 25% cortex and one piece has between 26% and 50%. The low number of pieces retaining dorsal cortex suggests the decortication of nodules elsewhere and accounts for the lack of definitive information on the type of raw material. Previous removals correspond to the shape of the later removals, suggesting a planned reduction strategy.

The only tool from the group is a very worn end and side scraper from posthole 21. It is lightly burnt and has a proximal break which followed a thermal fracture, possibly during burning. There is a high proportion of light to moderately burnt pieces within the Grooved Ware associated assemblage, so it could be that they derive from the same episode of burning.

Most of the material is technologically undiagnostic but would be consistent with a Neolithic or Bronze Age industry. However, it is most likely that the material is directly associated with the Grooved Ware material indicating a late Neolithic date.

4.4 Beaker associated pits

Both of the pits associated with Beaker ceramics (and possibly early Bronze Age Urn sherds) also contained flint (Table 1). Pit 60, the poorer of the two, only contained unmodified waste, whereas pit 23 also produced scrapers and cores. In both cases, the primary fill contained more material than the secondary fill. Interestingly, the secondary fills mainly contained chips.

Where possible, attribute analysis was performed on the debitage. Flakes dominate this category as is to be expected of an assemblage of this date (Ford 1987, 69). A mixed hammer mode seems likely, with a tendency for more hard hammer removals. Approximately one third exhibit platform edge abrasion, suggesting a sometimes careful knapping strategy, which usually occurs in earlier periods. As expected from a flake dominated assemblage, the majority of previous removals are also flakes. Non-cortical flakes are slightly in the minority, compared to the amount of trimming and preparation flakes. However, 78% of the material has less than 25% cortex remaining.

Fill 22 contained three multi-platform flake core and one tested nodule. The cores are small in size, weighing between 62 g and 83 g. They are irregularly worked and retain areas of cortex. There is no evidence of platform edge abrasion to suggest a careful reduction strategy. This contradicts the evidence from the debitage. The tested nodule is fairly large, weighing 111 g, and was abandoned following two flake removals.

Context 22 produced two end scrapers and three end and side scrapers (Illustration AH-384). This is over half of the total number of scrapers found at the site and may indicate either specialised scraping activity and/or deliberate deposition. Two of the scrapers are made on preparation flakes, one is on a side trimming flake and the other two are on non-cortical blanks. The three cortical scrapers are in fresh condition, whereas the two non-cortical pieces are damaged.

Refitting was performed on all the material from the two pits. A knapping refit between a flake and blade was found in context 61 (Photo ZY-7). Four groups of related material, one conjoin and two knapping refits were found in context 22. The related groups were identified on the basis of similarities of cortex and coloration (Groups ZY-5, ZY-6, ZY-17, ZY-18). The conjoin (Group ZY-4) is the two halves of a flake, snapped across the middle. The two knapping refits consist of two blade-like flakes (Photo ZY-3) and a multi-platform flake core with a flake (Photo ZY-6).

4.5 The remaining material

The majority of the assemblage from Eyhorne Street was recovered from Iron Age or undated features, a total of 126 pieces from 22 contexts (Table 1). This can be broken down into 88% debitage, 3% cores and 9% tools.

There are 109 pieces of debitage. Flakes dominate this total, although there is a small proportion of blades, blade-like flakes and bladelets. There is also a small but significant quantity of chips, rejuvenation flakes and irregular waste, which may suggest the presence of knapping debitage. However, there are no obvious clusters as the material is spread quite thinly between a number of contexts.

The four cores are all on the small side, weighing between 46 g and 65 g. The single platform flake core has platform edge abrasion and one of the multi-platform flake cores has a number of blade-like removals. Based on the limited diagnostic characteristics and small sample it is impossible to give a precise date for any of the cores.

The microlith is of Jacobi's type $7a^2$ (Jacobi 1978, 16; fig. 6), a narrow scalene microtriangle, usually associated with the late Mesolithic. It was found in an Iron Age pit and is therefore residual. The fragmentary arrowhead from the topsoil (context 1) is probably the base of a leaf-shaped arrowhead. The recovered section (the distal end of the flake blank) has

continuous, short and long bifacial retouch (Illustration AH-356). Leaf-shaped arrowheads can be broadly dated to the early Neolithic (Green 1984, 19).

The retouched blade has direct retouch on the medial right edge and an abraded platform. It was found in context 11, a buried soil overlying early to middle Iron Age features and is therefore likely to be residual. The piece is undiagnostic and therefore undatable. The two scrapers are from contexts 7 and 11. One has abrupt direct retouch on the medial left and distal edges (Illustration AH-225), and the other has direct retouch on the distal end. Both are consistent with a broad late Neolithic to early Bronze Age date. The six retouched flakes were recovered from five contexts. Direct retouch on one or more edges is most common, although inverse retouch is also present. The piece from context 34 stands out from the rest. It has four or five large, inverse and invasive removals on the left and right sides. This was possibly the start of an abandoned thinning process.

5 USEWEAR

The entire assemblage was examined for utilisation, the aim being to identify the key groups that would benefit from more detailed analysis in the future. Assessable material was scanned using low power microscopy (x 20-x 40 magnification) and the presence or absence of damage from utilisation was recorded. Out of the 458 pieces examined, 141 were unassessable. Of the remaining number 28% had usewear present. Each of the distinct groups described earlier had less than 20% of pieces with usewear. In contrast, 44% of the material from the rest of the site showed evidence of utilisation.

6 DISCUSSION

The majority of the flint assemblage from Eyhorne Street probably dates to the late Neolithic and early Bronze Age. There is some residual material from the Mesolithic and early Neolithic, including the microliths, broken leaf-shaped arrowhead and possibly some of the blade component. There are two groups of material associated with Grooved Ware and Beaker ceramics, and a third group which may have been related to earlier Neolithic activity. The tree-throw holes are tentatively dated to the Neolithic on the basis of the flint. The high proportion of chips, the irregular waste and rejuvenation flake, suggests flint knapping took place close to or in one of the tree-throw holes. The high number of scrapers in the Beaker pits suggests either specialised scraping activity and/or possible deliberate deposition. The rest of the material was recovered from Iron Age contexts and has therefore been redeposited. It was thinly spread across the site and suggests low-density background activity.

Table 2. Summary of burnt unworked flint by context

Mostly re-used assessment data (Bradley 2001: 36, table 2.1.2) with some additions.

Context	Count	Weight (g)	Comments
15	23	358	Burnt flint fragments, all calcined grey to red
16	4	12	Burnt flint fragments calcined grey to red
18	9	110	Burnt flint fragments calcined grey to red
22	85	1198	Burnt unworked flint calcined grey, some reddish tinges
26	5	22	Burnt flint fragments calcined red
42	3	1	Burnt flint, calcined grey
61	9	37	Burnt unworked flint calcined grey; also 1 natural
62	58	610	Burnt unworked flint calcined grey
76	1		Flake, very heavily calcined grey
95	22	33	Burnt unworked flint calcined grey
99	1	10	Burnt unworked flint calcined grey to red
101	1	2	Heavily calcined grey/red
104	2	2	Calcined grey
127	258	2044	Burnt ?quartzite and flint calcined grey, quite fragmentary. Scanned only (counts based on OAU finds records)
164	3	25	Burnt unworked fragments, calcined grey
167	1	1	Burnt unworked fragment calcined grey to red
173	3	51	Burnt unworked flint calcined red and grey
Total	488	4516	

7 CATALOGUE

Table 3. Catalogue of illustrated flint.

Fig.	Context	Category/description
AH-460	127	Single platform flake core. Corticated, platform edge abrasion, some blade-like removals (Neolithic or earlier)
AH-384	22	End scraper. Direct retouch at distal end, made on primary flake
AH-356	1	Fragmentary/unclassified/other arrowhead. Bifacial retouch, proximal break, possibly base of a leaf arrowhead
AH-225	7	End and side scraper. Abrupt direct retouch on the medial left & distal end

Table 4. Catalogue of photographed refits.

Fig.	Context	Category/description
ZY-7	61	Refit between 1 flake and 1 blade. Probably hard hammer struck, side trimming.
ZY-3	22	Two refitting blade-like flakes. Hard hammer struck, platform preparation.
ZY-6	22	Multi-platform flake core with 1 refitting flake. Indeterminate hammer mode.

8 BIBLIOGRAPHY

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