

Channel Tunnel Rail Link
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The worked flint from West of Northumberland

Bottom, Southfleet, Kent

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1	INTRODUCTION	3
2	PROVENANCE	3
3	RAW MATERIAL AND CONDITION.....	4
4	TECHNOLOGY AND DATING.....	4
4.1	Late Neolithic/early Bronze Age Beaker burial	4
4.2	Late Bronze Age/early Iron Age pits and furnace features.....	4
4.3	Middle to late Iron Age pits.....	5
4.4	The remaining material.....	7
5	DISCUSSION.....	8
6	CATALOGUE.....	11
7	BIBLIOGRAPHY.....	11

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1 INTRODUCTION

A total of 432 pieces of struck flint were recovered from the excavations at Northumberland Bottom (*Table 1*). A further 1177 fragments (32,639 g) of burnt unworked flint was also retrieved (*Table 5*). The majority of the material is technologically later Prehistoric in date and is likely to be redeposited. Some pieces are possibly earlier, such as the rejuvenation flakes, one of the scrapers and some of the unretouched debitage. The flint is examined by phase and feature, however there are few differences between the assemblages.

Table 1. Summary of worked flint by site

Site code	ARC WNB 98	ARC HRD 99	ARC 330 98 B	Total
Flake	91	33	203	327
Blade	2	1	2	5
Blade-like flake			14	14
Bladelet	1	1		2
Chip	1		1	2
Rejuvenation flake core face/edge	1	1	2	4
Flake from ground implement		1		1
Irregular waste	14		22	36
Multiplatform flake core	2		8	10
Keeled flake core			1	1
Core on a flake			1	1
Unclassifiable core			1	1
Tested nodule			2	2
End and side scraper			2	2
End scraper	1		3	4
Side scraper		1		1
Barbed and tanged arrowhead			1	1
Unfinished arrowhead			1	1
Backed knife		1		1
Retouched flake	4	4	8	16
Total	117	43	272	432

2 PROVENANCE

Material from three phases of work at the site is examined here (excavations at ARC WNB 98 and ARC HRD 99, and a targeted watching brief at ARC 330 98B). A total of 117 pieces of worked flint were recovered from 35 contexts at ARC WNB 98. Most contexts contained less than ten pieces of flint, with just three contexts containing between ten and 20 pieces. The fill of a grave cut for a Beaker burial (late Neolithic to early Bronze Age) is the only feature that is likely to contain *in situ* flint, however it only contained one piece. The rest of the features that contained flint are mostly Roman in date, with a few dated to the Iron Age and Medieval periods, and therefore the material recovered from these contexts is assumed to be redeposited. A total of 43 pieces of worked flint were recovered from 20 contexts at ARC HRD 99. All the contexts contained less than ten pieces of flint and were dated to the Roman or Medieval periods. The material is therefore redeposited. Over half of the total material (272

pieces) were recovered during the watching brief (ARC 330 98B). The material was spread between 51 contexts, dating from the late Bronze Age to the Post-Medieval period.

3 RAW MATERIAL AND CONDITION

The most frequently occurring raw material in the assemblage is gravel flint. It is likely that the nodules were found close to the site, as the local geology is clay with flints. A small amount (4%) of Bullhead flint is present. This is found in the Bullhead Bed at the base of the Reading Beds (Dewey & Bromehead 1915:18-19) and is identified by a green cortex with an underlying orange coloured band. In north Kent, the Bullhead Bed overlies the chalk beneath the Thanet sands (Dewey & Bromehead 1921:18; Shepherd 1972:114) and can be found fairly close to the site. Just 3% of the assemblage was identified as being chalk flint, which can also be found locally. The raw material of the rest of the assemblage is indeterminate.

Condition of the flint is fairly poor with approximately 80% of the assemblage being damaged. Of this total, three quarters of the material are slightly damaged, with the most frequently occurring location being vulnerable edges. This implies post-depositional disturbance and is consistent with the redeposition of material. Cortication affects 32% of the assemblage, and includes pieces recovered from all 106 contexts. This figure is quite high. Half of this number are lightly corticated and just 5% are heavily corticated. A total of 27% suffer breaks and 2% show signs of burning.

4 TECHNOLOGY AND DATING

4.1 Late Neolithic/early Bronze Age Beaker burial

Context 1069 from ARC WNB 98 is the fill of the grave cut for a double Beaker burial and the only context from this phase of work likely to contain *in situ* flint deposits. However, the feature only contained one piece of flint, a heavily corticated and calcium carbonate encrusted piece of irregular waste. The piece exhibits dubious flake scars and may well be natural. Either way, it is highly unlikely to be a deliberately deposited grave good.

4.2 Late Bronze Age/early Iron Age pits and furnace features

Pits 109, 118 and 156 and contexts associated with furnace activity (1339, 1395 and 1399) are thought to be late Bronze Age or early Iron Age in date. The contexts contain no more than five pieces of flint each (*Table 2*).

Table 2. Summary of worked flint from later Bronze Age/early Iron Age features

Site code	ARC 330 98 B								Total
	Pit 109	Pit 118	Pit 156			Furnace			
Context	108	117	148	149	150	1339	1395	1399	
Flake	3	1	2	1	3	1	3	5	19
Blade-like flake	1				1				2
Irregular waste							2		2
Multiplatform flake core			1						1
Unclassifiable core			1						1
Retouched flake	1								1
Total	5	1	4	1	4	1	5	5	26

Unretouched debitage dominates the pit deposits (12 pieces) compared to just two cores and one retouched flake. The flakes and cores are irregular with no evidence of prepared platforms or a planned reduction strategy. Thermal flaws can be seen on many pieces. The retouched flake from pit 109 has slightly glossy, continuous, minimal retouch along both edges. The standard of flint working is technologically poor and is consistent with a later Prehistoric date. The small number of flints and their varying locations within the pits (both primary and secondary fills) suggest that the flints were not purposefully placed deposits.

Flint associated with the furnaces is entirely unretouched debitage. It was recovered from the backfill of various pits (primary deposits). Unlike those associated with the previous pits, the flakes are fairly regular, with many showing a series of regular dorsal flake scars, evidence of a more planned reduction strategy. The two pieces of irregular waste are quite large and exhibit truncated flake scars. It is possible that they are core fragments. Many pieces have a light cortication and it is likely that all the material recovered from the furnace deposits was unintentionally incorporated into the backfill.

4.3 Middle to late Iron Age pits

The primary fills of pits 113, 120, 142, 210 and 223 contained unretouched debitage and one end scraper, the majority of pieces being recovered from pits 113 and 223 (Table 3). Like the material recovered from the late Bronze Age/early Iron Age pits, the flakes are irregular and show little evidence of planned reduction. The core rejuvenation flake is the exception and may be earlier than the rest of the material. The end scraper is fairly crude and has direct retouch on its distal end. It is very worn, corticated and damaged.

Table 3. Summary of worked flint from middle to late Iron Age pits

Site code	ARC 330 98 B											Total	
	Pit 113	Pit 120	Pit 142	Pit 210	Pit 223	"Ritual pit" 147			Pit 205				
Context	112	119	141	209	224	145	146	202	206	211	250	255	
Flake	7	1	1	1	3	23	9	2	23	2	1	1	74
Blade								1	1				2
Blade-like flake								1	1	1		2	5
Rejuvenation flake core face/edge					1								1
Irregular waste	2				2	6			5				15

Multiplatform flake core						1	1		3				5
Keeled flake core									1				1
Core on a flake						1							1
Tested nodule									1				1
End scraper	1												1
End and side scraper							2						2
Barbed and tanged arrowhead								1					1
Retouched flake									1				1
Total	10	1	1	1	6	31	12	5	36	3	1	3	110

The so called “Ritual pit” (147), which contained nearly 2500 fragments of animal bone, also produced 48 pieces of worked flint, including three cores and three tools. Flint was not found in the primary fill of the pit (264), but in the three subsequent fills, with the majority of pieces being recovered from the uppermost fill (145). The debitage is dominated by flakes (34 pieces) with one blade-like flake, one blade and six pieces of irregular waste. Micro-debitage was not recovered and the small blade component suggests a later Prehistoric date (Ford 1987:79, table 2). In general the material is fairly crude and irregular, with most pieces still retaining dorsal cortex. Technologically the flint is consistent with a later Prehistoric date. Possible exceptions include a couple of pieces that have platform edge abrasion and a potential rejuvenation flake. The blade has a rounded proximal end and has possibly been used as a fabricator. It has dorsal blade scars, which suggests that it is from a blade core. These pieces may date from the Mesolithic or early Neolithic.

The cores are small to medium in size (65 g to 120 g). The smaller of the multiplatform flake cores has some platform edge abrasion and is lightly corticated. The other is minimally worked with just a few removals. The core on a flake has removals taken from the original ventral surface. The cores are chronologically undiagnostic, but are consistent with a broad Neolithic to Bronze Age date. The barbed and tanged arrowhead has short, continuous, bifacial retouch, relatively short barbs and a broken tang (*Fig. AH-975*). It can be dated to the early Bronze Age (Green 1984:19). The end and side scrapers both have direct retouch on their distal ends and sides. One is made on quite a thick blank and the other on a large flake with a plunging termination. Like the cores, the scrapers are chronologically undiagnostic, but are consistent with a broad Neolithic to Bronze Age date.

Pit 205 contained 43 pieces of flint, located in four of the many fills. Contexts 206 and 211 are from the very top of the pit, the fifteenth and sixteenth fills and contexts 250 and 255 are from near the base, the primary and fourth fills respectively. There are no obvious differences in the flint between the separate contexts. Unretouched debitage is again dominated by flakes, suggesting a later prehistoric date (Ford 1987:79, table 2). The flakes are fairly crude and irregular and many retain dorsal cortex. A few pieces have platform edge abrasion and some are possibly soft hammer struck. On the whole, the material is technologically consistent with a later Prehistoric date. The four cores are small to medium in size, weighing between 67 g and 189 g. All are fairly irregular, with at least one side of cortex

remaining (*Figs AH-892 and AH-893*). The tested nodule has a few deliberate removals and is very damaged. It is small to medium in size, weighing 97 g. The retouched flake has inverse retouch on both the left and right sides. Only the distal end of the flake is present and the retouch on the left may well have continued beyond the break.

4.4 The remaining material

The rest of the assemblage from Northumberland bottom was recovered from undated, unstratified and modern contexts (*Table 4*). The unretouched debitage is again dominated by flakes (233 pieces), however there are a few blades, blade-like flakes and bladelets present. The flint shows a variety of features, including characteristics associated with earlier Prehistoric flint industries, such as a small number with platform edge abrasion and some that are possibly soft hammer struck. In general, however, the debitage is hard hammer struck and would be consistent with a later Prehistoric date. Only two chips were recovered. This is probably due to recovery methods and is not necessarily representative. Three rejuvenation flakes are present. The first is a very large flake struck to remove a series of previous hinged terminations, the second is quite small and removed an overhanging platform edge, struck at an angle of 90 degrees to the original platform, and the third is similar to the second but with a cortical platform. Rejuvenation flakes, which prolonged the use of a core, are usually associated with the more careful and economical flint industries seen in the Mesolithic and early Neolithic. The flake from a ground implement is broken, with just the distal end remaining. The flint is a pale grey colour, possibly chalk flint, and the dorsal surface is finely ground. The implement from which the flake was removed will have been Neolithic in origin and so the flake is post-Neolithic in date.

Table 4. Summary of remaining worked flint by site

Site code	ARC 98	WNB	ARC HRD 99	ARC 330 98 B	Total
Flake	90		33	110	233
Blade	2		1		3
Blade-like flake				7	7
Bladelet	1		1		2
Chip	1			1	2
Rejuvenation flake core face/edge	1		1	1	3
Flake from ground implement			1		1
Irregular waste	14			5	19
Multiplatform flake core	2			2	4
Tested nodule				1	1
End and side scraper				2	2
End scraper	1				1
Side scraper			1		1
Unfinished arrowhead				1	1
Backed knife			1		1
Retouched flake	4		4	6	14
Total	116		43	136	295

The multi-platform flake cores range in size from small (21 g) to large (307 g). The smallest core is made of Bullhead flint, the removals are glossy and less corticated than the unworked surfaces. The other fairly small core was irregularly worked and is heavily corticated except for a later removal. It is possible that the core was re-used. The third multi-platform flake core is heavily corticated and crusted with calcium carbonate. It is irregularly worked and provided fairly small removals. The largest of the cores is again irregularly worked. There is one large blade removal on one side and flake removals on the others. Most of the surfaces are heavily corticated.

The tested nodule is small, weighing just 34 g. A large hinged flake has removed most of the nodule. In general, the cores have been irregularly worked in order to produce a range of different size flakes. Technologically they are consistent with a later Neolithic or Bronze Age industry.

A fairly wide range of tools are present. The scrapers have direct retouch, which on the end scraper and the side scraper utilisation has made very worn. The scrapers are consistent with a later Neolithic or early Bronze Age industry, however one of the end and side scrapers that has regular retouch on nearly all sides might be earlier (*Fig. AH-782*). The unfinished arrowhead has invasive, inverse removals at the proximal end, probably to thin the bulb of percussion, and direct retouch on the medial to distal left and right sides. The distal end is broken and could be the reason for its discard. It is not possible to say which type of arrowhead it was destined to become and therefore it can only be dated to some point between the early Neolithic and early/mid Bronze Age. However, evidence for Beaker activity at the site may suggest the creation of a barbed and tanged arrowhead. The backed knife has abrupt, direct retouch along the right edge that creates a blunt edge for holding the tool. The number of retouched flakes is high (14 pieces) compared to the small number of other tools (6 pieces). In general the flakes have direct retouch on one of more edges. Just two pieces have inverse retouch, both of which also exhibit platform edge abrasion.

Most of the flint recovered from undated, unstratified and modern contexts is technologically characteristic of later Prehistoric industries. However, some pieces are technologically consistent with Mesolithic or early Neolithic flint working. It is suggested that most of this material is redeposited and the high levels of damage support this.

5 DISCUSSION

The majority of the flint from Northumberland Bottom can be dated to the later Prehistoric period, probably the later Neolithic or Bronze Age. In most cases this is based on technological characteristics. As most of the features are dated to the Iron Age the flint is likely to be redeposited. Some pieces may be contemporary, however the range of pieces, both chronologically and typologically, and the levels of damage suggests otherwise. The

presence of a late Neolithic/early Bronze Age Beaker burial confirms a human presence at the site earlier than the Iron Age.

Table 5. Summary of burnt unworked flint by context

Mostly re-used assessment data (Bradley 2001:101,104-5,107-8, tables 26,28,30) with some additions.

Event Code	Context	Count	Weight (g)
ARC HRD 99	2	2	1
ARC HRD 99	3	5	157
ARC HRD 99	5	1	12
ARC HRD 99	7	15	491
ARC HRD 99	8	1	15
ARC HRD 99	12	1	47
ARC HRD 99	12	5	37
ARC HRD 99	14	2	100
ARC HRD 99	18	1	33
ARC HRD 99	24	2	6
ARC HRD 99	29	1	132
ARC HRD 99	45	4	49
ARC HRD 99	47	9	308
ARC HRD 99	48	4	255
ARC HRD 99	53	7	4
ARC HRD 99	60	3	116
ARC HRD 99	67	10	544
ARC HRD 99	69	10	240
ARC HRD 99	77	1	1
ARC HRD 99	78	2	111
ARC HRD 99	131	1	43
ARC HRD 99	135	2	128
ARC HRD 99	150	7	180
ARC HRD 99	163	12	131
ARC HRD 99	217	1	21
ARC HRD 99	219	3	20
ARC WNB 98	156	7	39
ARC WNB 98	163	4	26
ARC WNB 98	250	1	36
ARC WNB 98	258	2	66
ARC WNB 98	263	6	436
ARC WNB 98	268	5	198
ARC WNB 98	269	15	568
ARC WNB 98	269	20	33
ARC WNB 98	270	4	201
ARC WNB 98	278	5	246
ARC WNB 98	278	10	177
ARC WNB 98	282	5	272
ARC WNB 98	292	2	19
ARC WNB 98	292	14	90
ARC WNB 98	292	35	136
ARC WNB 98	296	1	19
ARC WNB 98	297	6	130
ARC WNB 98	302	1	76
ARC WNB 98	308	1	24
ARC WNB 98	314	22	457
ARC WNB 98	362	9	130
ARC WNB 98	364	11	247
ARC WNB 98	380	26	1920
ARC WNB 98	381	6	306
ARC WNB 98	387	1	125

Event Code	Context	Count	Weight (g)
ARC WNB 98	393	1	32
ARC WNB 98	406	3	134
ARC WNB 98	426	1	137
ARC WNB 98	489	3	99
ARC WNB 98	498	22	1569
ARC WNB 98	526	1	1
ARC WNB 98	565	11	275
ARC WNB 98	601	1	139
ARC WNB 98	609	7	176
ARC WNB 98	641	2	168
ARC WNB 98	642	6	173
ARC WNB 98	644	2	56
ARC WNB 98	698	1	26
ARC WNB 98	818	5	51
ARC WNB 98	839	1	50
ARC WNB 98	916	10	14
ARC WNB 98	964	1	47
ARC WNB 98	1023	11	337
ARC WNB 98	1051	1	1
ARC WNB 98	1060	1	1
ARC WNB 98	1093	1	1
ARC WNB 98	1240	3	59
ARC WNB 98	1262	6	110
ARC WNB 98	1262	6	12
ARC WNB 98	1270	6	1
ARC WNB 98	1279	6	6
ARC WNB 98	1318	1	22
ARC WNB 98	2042	1	16
ARC 330 98	1	1	47
ARC 330 98	63	2	189
ARC 330 98	72	1	74
ARC 330 98	74	1	29
ARC 330 98	75	1	29
ARC 330 98	89	3	252
ARC 330 98	95	23	1070
ARC 330 98	100	2	133
ARC 330 98	106	1	1
ARC 330 98	108	13	903
ARC 330 98	110	39	1574
ARC 330 98	112	17	690
ARC 330 98	117	3	206
ARC 330 98	119	9	997
ARC 330 98	121	15	444
ARC 330 98	131	1	15
ARC 330 98	133	2	21
ARC 330 98	138	100	70
ARC 330 98	145	22	101
ARC 330 98	146	5	118
ARC 330 98	148	5	96
ARC 330 98	151	3	6
ARC 330 98	176	3	2
ARC 330 98	190	1	28
ARC 330 98	200	4	55
ARC 330 98	202	3	2
ARC 330 98	206	49	2980
ARC 330 98	211	2	32
ARC 330 98	224	17	441
ARC 330 98	250	2	40
ARC 330 98	264	5	149
ARC 330 98	282	6	54

Event Code	Context	Count	Weight (g)
ARC 330 98	309	5	10
ARC 330 98	314	23	365
ARC 330 98	323	6	519
ARC 330 98	324	1	2
ARC 330 98	334	5	146
ARC 330 98	338	22	649
ARC 330 98	345	15	241
ARC 330 98	347	11	20
ARC 330 98	355	1	13
ARC 330 98	356	5	16
ARC 330 98	357	6	183
ARC 330 98	395	7	26
ARC 330 98	559	6	36
ARC 330 98	560	12	50
ARC 330 98	567	6	89
ARC 330 98	590	9	8
ARC 330 98	592	5	9
ARC 330 98	594	12	14
ARC 330 98	596	8	27
ARC 330 98	598	3	12
ARC 330 98	600	8	33
ARC 330 98	1280	113	930
ARC 330 98	1281	2	1
ARC 330 98	1336	7	374
ARC 330 98	1339	10	960
ARC 330 98	1343	18	992
ARC 330 98	1379	2	24
ARC 330 98	1394	7	246
ARC 330 98	1395	16	798
ARC 330 98	1399	11	1986
ARC 330 98	1425	2	140
Total		1177	32639

6 CATALOGUE

Table 6. Catalogue of illustrated flint.

Fig.	Site	Context	Category/description
AH-893	ARC 330 98B	206	Multi-platform flake core. Moderate cortication, approx. 30% cortical, gravel flint.
AH-892	ARC 330 98B	206	Keeled flake core. Approx. 50% cortex remains, 1 removal opposite keeled edge, some hinged terminations, gravel flint.
AH-975	ARC 330 98B	202	Barbed and tanged arrowhead. Broken tang, short barbs; short, continuous, bifacial retouch.
AH-782	ARC 330 98B	1	Direct retouch on all edges except the striking platform, small amount of cortex remains on distal left.

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