Channel Tunnel Rail Link

CTRL UK Limited

Oxford Wessex Archaeology Joint Venture

The worked flint from Tollgate, Cobham, Kent (ARC TLG 98)

by Rebecca Devaney

CTRL Specialist Report Series

October 2005

1 INTRODUCTION

A total of 620 pieces of struck flint were recovered from the excavations at Tollgate (Table 1). A further 4117 fragments (37,573 g) of burnt unworked flint were retrieved from 151 contexts (Table 2). The material can be broadly dated to the Neolithic and Bronze Age. This is based on the technological and typological aspects of the assemblage. An exception is a possible Palaeolithic Levallois flake.

The material is divided into four groups based on the presumed date of the feature from which it was recovered. Features contemporary with the flint include a possible prehistoric pit, and a pit, ditch and natural layer dated to the late Bronze Age. A fair amount of material was recovered from Iron Age and later contexts and is therefore likely to be redeposited. The largest group of material was recovered from undated and unstratified features.

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

	Possible Prehistoric feature	**Late Bronze Age features**			**Iron Age & later features**	**Undated & unstratified features**	**Total**
	Pit 734	Pit 537	Natural 615	Ditch 1198			
Flake	34	4	3	1	149	314	505
Blade	1				2	4	7
Bladelet					1		1
Blade-like flake	2		1		11	13	27
Irregular waste	2	1			13	20	36
Flake from hanmmerstone						2	2
Levallois flake	1						1
Rejuvenation flake core face/edge					1	1	2
Multiplatform flake core		1			2	6	9
Single platform flake core						2	2
Keeled non-discoidal flake core					1		1
Core on a flake					1	1	2
End and side scraper					1	2	3
End scraper					2		2
Retouched blade						1	1
Retouched flake	1	1			6	3	11
Serrated flake					1		1
Miscellaneous retouch					1		1
Burin						1	1
Notched piece						2	2
Piercer					1		1
Hammerstone					1		1
Used flint pebble						1	1
Total	41	7	4	1	194	373	620

2 PROVENANCE

The worked flint was recovered from 81 contexts, including ditch fills, pit fills, layers and natural, with about half of the material coming from unstratified contexts. The flint is distributed across the site quite thinly with only two stratified contexts containing more than

20 pieces. Context 737, one fill of the possible Prehistoric pit contained 21 pieces of flint and context 873, the primary fill of an Iron Age pit, contained 31 pieces.

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 (18 pieces) of Bullhead flint is also 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. There is no evidence for the use of chalk flint, which can also be found locally.

Condition is poor with most pieces suffering light to heavy damage and only a handful of pieces being recorded as fresh. This is consistent with the suggestion that most of the assemblage is redeposited. Surface alteration varies with material from a range of contexts showing light to heavy cortication. However, these pieces are in the minority. A total of 30% suffer breaks and 2% show signs of burning.

4 TECHNOLOGY AND DATING

4.1 Possible Prehistoric Pit

The 41 pieces of flint in pit 734 are distributed between five of the seven fills, including the first and last. The debitage is dominated by flakes with just a small blade element (three pieces), which suggests a Bronze Age date (Ford 1987:79, table 2). However, two pieces exhibit platform edge abrasion, which is usually associated with the more careful knapping methods of Neolithic industries. Of particular note is a possible Levallois flake recovered from one of the secondary fills (737). It is fairly large and has worn and damaged edges. The size might suggest a Palaeolithic as opposed to Neolithic date; either way it is likely to be residual (Illustration AH-1012). The only other material from this period is the possible handaxe recovered during the evaluation (TGS 97). The only tool recovered from this feature is an inversely retouched flake. The majority of the material is badly damaged and some pieces are iron stained. This suggests a fair amount of post-depositional disturbance and the likelihood that the material is redeposited.

4.2 Late Bronze Age Features

It is suggested that Pit 537 is securely dated to the late Bronze Age by the presence of perforated clay slabs and datable ceramics. The sole fill (529) contained seven pieces of flint.

The predominance of hard hammer struck pieces and the lack of any blade element supports the suggested dating (Ford 1987:79, table 2). However one flake has platform edge abrasion, a soft hammer impact and parallel dorsal scars, characteristics which are more commonly seen in Mesolithic or Neolithic industries, and may therefore be residual. The multi-platform flake core is made on Bullhead flint and is small at 67 g. It has approximately 25% cortex remaining and is irregularly worked, which is consistent with a Bronze Age date. The retouched flake is fairly large and has sporadic retouch to both surfaces. Incipient cones of percussion on the ventral surface suggest repeatedly unsuccessful attempts at flake removal.

Ditch 1188, is possibly late Bronze Age in date. The primary fill (1189) contained a fairly fresh, utilised flint flake. Natural layer (615), which is also possibly late Bronze Age, produced four flakes, one of which is blade-like. Three of the flakes have light cortication and one is stained which suggests post-depositional disturbance.

4.3 Iron Age & later features

A total of 194 pieces of flint were recovered from 53 Iron Age and later features. The material is therefore likely to be redeposited. The debitage category is dominated by flakes (91%) although there is a significant blade element as well (9%). True blades are in the minority with most of the blade element consisting of blade-like flakes. A mixed hammer mode and the frequent presence of platform edge abrasion suggests material from both the Neolithic and the Bronze Age. The majority of pieces exhibit damage and many are stained and corticated, which is consistent with the redeposition of material. There are two multi-platform flake cores, one keeled core and one core on flake. The multi-platform flake cores are fairly small, weighing just 43 g and 46 g. The presence of a keeled core also suggests a Neolithic date (Illustration AH-1269). The cores are in fairly good condition with a light cortication.

The tools category includes four functionally diagnostic pieces and eight undiagnostic pieces. The end and side scraper is unusual in that the retouch is at the proximal end of the flake blank (Illustration AH-1266). The two end scrapers are more typical, with direct retouch on their distal ends. The probable piercer has invasive bifacial retouch along both sides. Platform edge abrasion may suggest a Mesolithic or Neolithic date. Six of the functionally undiagnostic pieces are retouched flakes. They have either direct or inverse retouch on one or more edges. The piece with miscellaneous retouch has bifacial retouch at the proximal end and later plough damage (Illustration AH-1276). The serrated flake has possible serrations on both edges. Most of the retouched pieces are damaged which is again consistent with redeposition. The hammerstone is well used following minimal reduction as a core. It is of gravel flint and weighs 559 g.

4.4 Undated and unstratified features

A total of 373 pieces were recovered from 20 undated and unstratified contexts. Flakes dominate the debitage category (95%) compared to just 5% blades. This proportion suggests a predominance of Bronze Age material with some Mesolithic or early Neolithic activity (Ford 1987:79, table 2). A mixed hammer mode and the presence of platform edge abrasion on some pieces supports the broad Mesolithic to Bronze Age date suggested above.

The cores category comprises six multi-platform flake cores, two single platform flake cores and one core on a flake. They are small to medium in size, weighing between 45 g and 123 g. Platform edge abrasion is present on three of the multi-platform flake cores, two of which also have very little cortex remaining. This indicates that these cores were carefully worked, a characteristic usually associated with Neolithic technology. The other cores are more irregularly worked which suggests a Bronze Age date and they tend to have over 25% cortex remaining.

The assemblage includes ten tools. The two end and side scrapers have direct retouch to their distal ends and sides and are likely to date from the Neolithic or Bronze Age. The possible burin is broken. One of the notched pieces is made on a thermal flake and the other has opposed notches on the lateral sides. The retouched blade is a possible badly damaged piercer. The three retouched flakes have either direct or inverse retouch on one or more edges, one also exhibits possible usewear. There is also a utilised flint pebble. It has one flat and smooth surface which suggests it has been used as a rubbing stone. There is also some burning on one end.

5 REFITTING

Material from 41 contexts were examined for refits. Unfortunately, no knapping refits or conjoins were found. However, on the basis of similarities of cortex and coloration, six groups of related material were recorded.

6 USEWEAR

A total of 269 pieces from 47 contexts were 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 (x20-x40 magnification) and the presence or absence of damage from utilisation was recorded. Out of the 269 pieces examined, just eight were unassessable. Of the remaining number, 34% have usewear present.

7 COMPARISON WITH TGS 97

The material recovered from the excavations was compared to that already examined from the 1997 evaluation. Few comparisons could be made as very little struck material was recovered from TGS 97. Bullhead flint was recovered from both phases of work, as were retouched flakes and blades, notched flakes and scrapers. A possible Palaeolithic piece was recovered from both stages of work, which suggests some activity in the area at this time.

8 DISCUSSION

The majority of the flint from Tollgate can be dated to the Neolithic and Bronze Age. This is based on technological and typological aspects of the material. The possible handaxe recovered from the evaluation (TGS 97) and the possible Levallois flake suggests a long term human presence at the site stretching back to the Palaeolithic period. It is thought that most of the material was redeposited in later features, which accounts for the poor condition. There are no chips present in the assemblage which might suggest that there was no on-site knapping, but this could also reflect collection methods, as there is also a fair amount of irregular waste (36 pieces), two rejuvenation flakes and a number of cores.

Table 2. Summary of burnt unworked flint by context
Mostly re-used assessment data (Bradley 2001:63,66-69 tables 12,11) with some additions.

Event code	Context	Count	Weight (g)
ARC TLG 98	Sample 2	1	1
ARC TLG 98	Sample 3	6	1
ARC TLG 98	Sample 15	3	2
ARC TLG 98	Sample 18	1	1
ARC TLG 98	Sample 19	1	12
ARC TLG 98	Sample 25	2	2
ARC TLG 98	Sample 26	2	4
ARC 330 98	0	14	424
ARC 330 98	32	1	83
ARC 330 98	80	4	108
ARC 330 98	82	1	11
ARC 330 98	143	1000	5778
ARC 330 98	177	20	338
ARC 330 98	179	4	61
ARC 330 98	190	5	58
ARC 330 98	194	2	1
ARC 330 98	196	1	5
ARC 330 98	198	6	8
ARC 330 98	217	1	12
ARC 330 98	225	1	2
ARC 330 98	352	24	233
ARC 330 98	373	3	159
ARC 330 98	379	1	60
ARC 330 98	384	25	120
ARC 330 98	386	1	61
ARC 330 98	390	231	2027

Event code	Context	Count	Weight (g)
ARC 330 98	399	6	70
ARC 330 98	400	1	46
ARC 330 98	401	99	758
ARC 330 98	402	10	299
ARC 330 98	412	125	2926
ARC 330 98	417	77	2248
ARC 330 98	418	19	232
ARC 330 98	420	9	58
ARC 330 98	428	10	5
ARC 330 98	433	22	199
ARC 330 98	436	1	87
ARC 330 98	448	46	965
ARC 330 98	450	3	34
ARC 330 98	458	2	1
ARC 330 98	462	1	42
ARC 330 98	480	7	58
ARC 330 98	526	4	14
ARC 330 98	527	3	15
ARC 330 98	529	41	2839
ARC 330 98	535	2	11
ARC 330 98	538	2	80
ARC 330 98	555	2	3
ARC 330 98	567	6	89
ARC 330 98	570	5	19
ARC 330 98	575	5	19
ARC 330 98	576	1	6
ARC 330 98	611	2	2
ARC 330 98	614	7	28
ARC 330 98	615	3	22
ARC 330 98	625	2	1
ARC 330 98	631	2	130
ARC 330 98	633	5	6
ARC 330 98	638	6	10
ARC 330 98	674	23	56
ARC 330 98	676	5	17
ARC 330 98	680	2	29
ARC 330 98	684	6	12
ARC 330 98	686	2	6
ARC 330 98	688	8	79
ARC 330 98	689	4	24
ARC 330 98	691	8	72
ARC 330 98	700	6	8
ARC 330 98	701	3	33
ARC 330 98	710	150	2681
ARC 330 98	712	5	8
ARC 330 98	713	2	4
ARC 330 98	726	5	7
ARC 330 98	731	1	4
ARC 330 98	735	1	11
ARC 330 98	736	11	97
ARC 330 98	737	6	322

Event code	Context	Count	Weight (g)
ARC 330 98	741	20	658
ARC 330 98	747	2	62
ARC 330 98	754	29	154
ARC 330 98	756	7	193
ARC 330 98	759	3	1
ARC 330 98	771	23	359
ARC 330 98	773	10	6
ARC 330 98	777	3	3
ARC 330 98	805	1	1
ARC 330 98	807	5	23
ARC 330 98	809	4	2
ARC 330 98	811	3	6
ARC 330 98	812	17	579
ARC 330 98	818	1	48
ARC 330 98	820	4	46
ARC 330 98	823	4	16
ARC 330 98	825	3	7
ARC 330 98	828	2	20
ARC 330 98	831	3	12
ARC 330 98	832	8	72
ARC 330 98	833	4	57
ARC 330 98	835	12	599
ARC 330 98	836	4	1
ARC 330 98	839	6	42
ARC 330 98	840	1	37
ARC 330 98	844	5	18
ARC 330 98	862	8	6
ARC 330 98	864	8	47
ARC 330 98	867	34	5281
ARC 330 98	872	1	82
ARC 330 98	873	9	281
ARC 330 98	875	10	202
ARC 330 98	878	21	890
ARC 330 98	884	11	625
ARC 330 98	890	6	1
ARC 330 98	901	2	85
ARC 330 98	905	3	7
ARC 330 98	908	3	4
ARC 330 98	934	1	6
ARC 330 98	939	3	145
ARC 330 98	944	3	34
ARC 330 98	948	3	116
ARC 330 98	949	3	13
ARC 330 98	951	2	12
ARC 330 98	955	1	1
ARC 330 98	956	5	25
ARC 330 98	974	2	4
ARC 330 98	980	2	31
ARC 330 98	981	3	27
ARC 330 98	982	4	26
ARC 330 98	990	3	4

Event code	Context	Count	Weight (g)
ARC 330 98	998	1	7
ARC 330 98	1047	3	7
ARC 330 98	1084	2	23
ARC 330 98	1138	3	7
ARC 330 98	1150	1	3
ARC 330 98	1168	1	23
ARC 330 98	1173	16	156
ARC 330 98	1175	41	224
ARC 330 98	1177	2	7
ARC 330 98	1182	18	89
ARC 330 98	1186	4	73
ARC 330 98	1188	1500	1422
ARC 330 98	1193	15	28
ARC 330 98	1196	2	4
ARC 330 98	1206	6	26
ARC 330 98	1210	1	22
ARC 330 98	1216	1	13
ARC 330 98	1218	3	5
ARC 330 98	1226	1	17
ARC 330 98	1231	6	49
ARC 330 98	1232	5	7
ARC 330 98	1236	5	20
	Total	4117	37573

9 CATALOGUE

Table 3. Catalogue of illustrated flint.

Fig.	Context	Category/description
AH-1012	737	Levallois flake. Possible Palaeolithic levallois flake, iron stained, worn and damaged edges.
AH-1269	998	Keeled Core. Approx. 50% cortex, some cortication, good condition.
AH-1266	867	End and side scraper. Damage to ventral surface on proximal right and proximal end.
AH-1276	1230	Miscellaneous retouch. Bifacial retouch at proximal end, later damage including notch on left.

10 BIBLIOGRAPHY

Bradley, P, 2001 Appendix 4 - Assessment of worked and burnt flint, in Area 330 (Zone 4) Tollgate (ARC TLG 98), Post-excavation Assessment Report, Upubl. report, URL, MoLAS, 61-698

Dewey, H and Bromehead, C E N, 1915 The Geology of the country around Windsor and Chertsey, *Mem. Geol. Survey*, London: HMSO

Dewey, H and Bromehead, C E N, 1921 The Geology of South London, *Mem. Geol. Survey*, London: HMSO

Ford, S, 1987 Chronological and functional aspects of flint assemblages, in *Lithic analysis and Later British Prehistory* (eds A. Brown and M. Edmonds), BAR Brit Ser **162**, 67-81, Oxford

Shepherd, W, 1972 *Flint: Its origin, properties and uses*, London: Faber and Faber