

**Channel Tunnel Rail Link
London and Continental Railways
Oxford Wessex Archaeology Joint Venture**

The worked flint from Beechbrook Wood, Hothfield, Kent

by Kate Cramp

1	INTRODUCTION	2
2	PROVENANCE	2
3	CONDITION AND RAW MATERIAL.....	4
4	TECHNOLOGY AND DATING.....	5
4.1	Pit 1623	5
4.2	Early Neolithic pit 1910	9
4.3	Beaker pit 1374	11
4.4	Cremation pit 562.....	13
4.5	Ring ditch 851	14
4.6	Ring ditch 950	14
5	DISCUSSION.....	14
6	BIBLIOGRAPHY.....	15

CTRL Specialist Report Series

2006

©London and Continental Railways 2006

All rights including translation, reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without the prior written permission of London and Continental Railways.

1 INTRODUCTION

An assemblage of 3492 struck flints and 1600 pieces (3294 g) of burnt unworked flint was recovered from the excavation to the south of Beechbrook Wood (ARC BWD98) and from the targeted watching brief (ARC BBW00). This total includes 1697 chips (<10mm²), which provide 48.6% of the assemblage. Of these, 1388 were retrieved during the environmental sampling of large parts of the site; the remaining 309 were recovered by hand. The vast majority of the struck flint assemblage (3490 pieces) and all of the burnt unworked material came from the watching brief; the excavation itself yielded just two struck flints. A quantification of the flint is shown in Tables 1 and 2.

Most of the flintwork was recovered from three sealed pit deposits in Area C. These date from the late Mesolithic, early Neolithic and Beaker period and together provide 2652 struck flints or just over 75% of the total collected from the site (Table 3). The earliest of the three assemblages came from pit 1623, which contained a total of 1411 flints including 30 late Mesolithic microliths. The assemblage of 565 struck flints from pit 1910 is almost certainly in contemporary association with the large assemblage of early Neolithic Plain Bowl pottery recovered from the same deposit. Finally, pit 1374 yielded 676 struck flints, which can confidently be dated to the Beaker period on the presence of three thumbnail scrapers, one barbed-and-tanged arrowhead, and over 100 sherds of Beaker pottery. These assemblages have provided a valuable opportunity to examine various aspects of flint technology, use and discard over time.

2 PROVENANCE

Around 75% of the total assemblage from Beechbrook Wood was recovered from three discrete features on Area C: pit 1623 (1411 pieces), pit 1910 (565 pieces) and pit 1374 (676 pieces). While the late Mesolithic and early Neolithic assemblages come from apparently isolated features, the material from Beaker pit 1374 can be related to a wider landscape of activity evidenced by sizeable assemblages of flintwork from cremation pit 562 (147 pieces) and ring ditch 851 (110 flints). Ring ditch 2150 also produced several flints, although these have probably been redeposited. Other tools datable to the Bronze Age include a denticulated scraper (Fig. 1.10) from ditch 1196.

What little remains of the Beechbrook flint assemblage after the consideration of these main groups was recovered in small quantities from a wide range of features, including pits, postholes, ditches, gullies and layers. In many cases, the flints occurred as isolated redeposited finds in later features, such as the scraper (Fig. 1.22) from ditch 896.

Table 1: Struck flint by type from the watching brief (ARC BBW00) and excavation (ARC BWD 98) at Beechbrook Wood.

Category:	ARCBW00	ARC BWD98	Total:
Flake	1004	1	1005
Blade	114	1	115
Bladelet	77	-	77
Bladelike flake	125	-	125
Core face/edge rejuvenation flake	7	-	7
Rejuvenation flake tablet	2	-	2
Irregular waste	195	-	195
Chip	309	-	309
Sieved Chips 10-4mm	1388	-	1388
Single platform flake core	3	-	3
Multi-platform flake core	9	-	9
Levallois/other discoidal flake core	1	-	1
Core on a flake	9	-	9
Single platform blade core	3	-	3
Opposed platform bladelet core	1	-	1
Bladelet core on a flake	4	-	4
Other bladelet core	1	-	1
Unclassifiable/fragmentary core	11	-	11
Tested nodule	3	-	3
Retouched flake	43	-	43
Retouched blade	10	-	10
End scraper	13	-	13
End-and-side scraper	19	-	19
Thumbnail scraper	3	-	3
Scraper on a non-flake blank	1	-	1
Other scraper	5	-	5
Microolith	33	-	33
Microburin	64	-	64
Truncated blade	1	-	1
Backed knife	4	-	4
Piercer	5	-	5
Notch	4	-	4
Denticulate	3	-	3
Serrated flake	4	-	4
Leaf-shaped arrowhead	1	-	1
Barbed-and-tanged arrowhead	1	-	1
Unclassifiable retouch	8	-	8
Hammerstone	2	-	2
	3490	2	3492

Table 2: Quantification of burnt unworked flint from the watching brief at Beechbrook Wood (ARC BBW00).

Data	ARC BBW00	ARC BWD98	Total:
No. of pieces:	1600	-	1600
Weight (g):	3294	-	3294

Table 3: Struck flint by phase and feature from the watching brief at Beechbrook Wood (ARC BBW00).

Category:	LMES pit 1623	EN pit 1910	EBA pit 1374	Cremation pit 562	Ring ditch 851	Unphased/ other	Total:
Flake	338	145	229	85	22	186	1004
Blade	36	34	1	1	1	41	114
Bladelet	57	8	1	4	-	9	77
Bladelike flake	70	26	5	2	1	22	125
Core face/edge rejuvenation flake	2	3	1	-	-	1	7
Rejuvenation flake tablet	-	2	-	-	-	-	2
Irregular waste	25	22	115	16	1	17	195
Chip	256	32	19	-	-	11	309
Sieved Chips 10-4mm	517	269	253	37	81	235	1388
Single platform flake core	-	-	1	-	-	2	3
Multi-platform flake core	2	-	3	-	-	4	9
Levallois/other discoidal flake core	-	-	-	-	-	1	1
Core on a flake	1	2	2	1	-	3	9
Single platform blade core	2	1	-	-	-	-	3
Opposed platform bladelet core	1	-	-	-	-	-	1
Bladelet core on a flake	2	-	-	-	-	2	4
Other bladelet core	-	-	-	-	-	1	1
Unclassifiable/fragmentary core	1	3	6	-	-	1	11
Tested nodule	-	-	-	-	-	3	3
Retouched flake	2	4	19	-	1	17	43
Retouched blade	4	1	-	-	-	5	10
End scraper	1	-	3	-	1	8	13
End-and -side scraper	-	-	6	-	-	13	19
Thumbnail scraper	-	-	3	-	-	-	3
Scraper on a non-flake blank	-	-	-	-	-	1	1
Other scraper	-	1	2	-	-	2	5
Microolith	30	2	-	-	-	1	33
Microburin	58	6	-	-	-	-	64
Truncated blade	1	-	-	-	-	-	1
Backed knife	-	-	-	1	-	3	4
Piercer	3	-	-	-	-	2	5
Notch	-	1	-	-	-	3	4
Denticulate	-	-	-	-	-	3	3
Serrated flake	-	3	-	-	-	1	4
Leaf-shaped arrowhead	-	-	-	-	1	-	1
Barbed-and-tanged arrowhead	-	-	1	-	-	-	1
Unclassifiable retouch	2	-	5	-	1	-	7
Hammerstone	-	-	1	-	-	1	2
Total:	1411	565	676	147	110	599	3490

3 CONDITION AND RAW MATERIAL

The condition of the flintwork varies by context but is generally very fresh. Of 769 pieces assessed in detail, around 88 % were considered to be in fresh condition; none was recorded as heavily damaged. However, unstratified and residual flints from later contexts (i.e. groups not selected for further analysis) tend to be in a much poorer condition. These pieces often exhibit surface rolling and edge-damage associated with successive redeposition.

Nearly 90 % of the assessed component is uncorticated. The remainder exhibits a cortication that ranges in degree from a light speckling to an opaque white. All five of the heavily corticated pieces in the assessment came from pit 1910. It is likely that local soil

conditions are responsible for the few cases where cortication has occurred. These figures can be extrapolated for the assemblage as a whole, where the predominance of uncorticated material was observed but not quantified.

The flint used for knapping appears to come mainly from gravel sources. These pieces are distinguished by a thin, abraded and often stained cortex. Many pieces contain cherty inclusions and thermal flaws that may have affected knapping quality. Chalk flint was also widely used and can be differentiated from gravel flint by its thick, clean white cortex. The site lies close (within 10 km) to potential sources of chalk and gravel flint, so the nodules need not have been transported over great distances.

Bullhead flint, distinguished by its dark green cortex and underlying orange band, is occasionally represented. Examples include a core on a flake from cremation burial 1290 and a single blade from ditch/enclosure 2150. A further two flakes of bullhead flint were recovered from pit 1910. Nodules would have been available locally from deposits at the base of the Thanet sands (Shepherd 1972, 114), some 10 to 12 km to the north-east.

4 TECHNOLOGY AND DATING

What follows is a chronological discussion of the flintwork from the site, with detailed reference given to the key groups including:

- late Mesolithic pit 1623
- early Neolithic pit 1910
- Beaker pit 1374
- cremation pit 562
- ring ditch 851
- ring ditch 950

4.1 Pit 1623

A total of 1411 struck flints (including 773 chips) was recovered from the single fill of pit 1623, which was excavated in spits and quadrants (Table 4). A further 205 pieces (295 g) of burnt unworked flint were also retrieved, mainly from the southern (1675) and western (1643) quadrants. The flintwork is in extremely fresh condition and is generally uncorticated, although a light incipient cortication was noted on around 10% of the assessed component.

Although there were too few complete pieces present to undertake metrical analysis, the assemblage clearly represents a blade-oriented industry. Blades, bladelets and bladelike flakes are numerous, represented by 163 pieces. These provide around 30% of the debitage component and just over 25% of the assemblage as a whole (excluding chips), a percentage that approaches that predicted for Mesolithic assemblages (Ford 1987, 79-80). Although

flakes outnumber blades in a ratio of 2:1, many border on blade dimensions and nearly half exhibit dorsal blade scars (Fig. 3.1). Further evidence of blade production comes from the cores themselves. Of the nine examples that were recovered from the pit, five were last used to yield blades or bladelets (e.g. Figs. 1.8 and 1.9). Complete examples are small, ranging from 23 g to 80 g with an average weight of 53 g.

The reduction strategy relied on the use of soft-hammer percussion and involved careful preparation and removal. This is borne out by the results of the technological analysis, which was performed on a sample of 177 struck flints from context (1643). A total of 55 soft-hammer removals were recorded compared to nine hard-hammer removals (Fig. 4.1); the remaining 113 flakes in the sample were of indeterminate hammermode. Platform edge abrasion was routinely used for the controlled and predictable removal of blades and flakes. Of 121 assessable pieces, platform edge abrasion is present in 70 instances or nearly 60% of cases (Fig. 5.1).

Most platforms are either linear (41 pieces), plain (27 pieces) or punctiform (24 pieces); cortical platforms occur very rarely (Fig. 6). The vast majority of removals are also non-cortical (Fig. 7). A few trimming flakes and preparatory flakes are present, but it seems that most of the removals come from a later stage of core reduction. Material from the decortication of nodules was clearly deposited elsewhere, and it is likely that non-cortical blanks were preferred for the purposes of microlith manufacture. The assemblage also contained two core rejuvenation flakes, which reflect a concern with platform preparation and maintenance.

A total of thirty microliths were recovered from the pit (Table 5). Typologically, the microlith assemblage is heavily dominated by the narrow-bladed scalene microtriangle characteristic of later Mesolithic industries; class 7a2 (Jacobi 1978, 16, fig. 6) is particularly well represented by 11 pieces (e.g. Figs. 1.5 and 1.6). Although class 1 microliths are usually associated with earlier Mesolithic industries (e.g. Fig. 1.2), their association in small quantities with later Mesolithic assemblages is not unknown (Jacobi 1978, 16). Their presence in the Beechbrook collection is not, therefore, problematic. Of the 12 strictly unclassifiable microliths, seven almost certainly derive from narrow-bladed forms, usually either triangles or rods (e.g. Figs. 1.3 and 1.4). Perhaps significantly, many of the class 7 microliths had lost their tails (e.g. Fig. 1.6). This may relate to the circumstances of their manufacture or use. In either case, it may explain their discard in the pit along with other unwanted by-products (e.g. chips, snapped bladelet fragments and microburins).

The assemblage contains considerable evidence for microlith manufacture using the microburin technique (see Inizan *et al.* 1992, 69, fig. 24), including 58 microburins. Most of the microburins are proximal examples (51 pieces). Of these, 48 have been notched on the left-hand edge. A small number of medial and distal microburins are also present (seven

pieces). Numerous snapped blades and bladelets, particularly the proximal sections, were also recovered. These may also result from microlith manufacture. That microburins outnumber microliths by a ratio of nearly 2:1 is further evidence that the pit deposit contains manufacturing waste, and suggests that finished microliths were removed from the knapping scatter for use. Despite sustained attempts, no refits were found in the assemblage from context (1643); this may be a factor of sampling or truncation.

Beside microliths, the pit assemblage contained a range of other tools including six retouched flakes and blades, three piercers (e.g. Fig. 1.10) and one truncated blade. It is possible that the piercers were used for the notching of blades in microlith manufacture. Comparatively few scrapers were recovered (one piece) and no serrated flakes were identified. In this respect, the assemblage is qualitatively different to that from the early Neolithic pit 1910 with three serrated flakes (e.g. Fig. 1.12), and also to the Beaker assemblage from pit 1374, where scrapers are present in abundance (e.g. Figs. 1.15-1.18). An examination of 163 assessable flints from context (1643) revealed use-wear on approximately one third (48 flints); this would be consistent with an assemblage combining manufacturing waste with the discarded tools from general tasks. The total of 43 retouched pieces, including microliths, provide 6.7 % of the assemblage (excluding chips).

The tree-throw hole was excavated in quadrants (north, south, east and west) in order to examine the horizontal distribution of the flint assemblage. The results show a distinct concentration of flintwork in the northern and western quadrants, areas that also contained the greatest number of chips (Table 4). If the flint from the spits is included in the total number from the western quadrant, the figure rises from 392 to 537 pieces and emphasises the apparent concentration of flintwork in this area. This might indicate that the north-western half of the tree-throw hole contained, or was closest to, the densest area of the original scatter; the eastern quadrant produced the smallest assemblage (102 pieces including 48 chips) and may have been more peripheral to the scatter centre.

An area measuring 1 m² in the western quadrant (1643) was excavated in a series of 5 cm spits to establish any patterning in the vertical distribution of the flints. The resultant quantification shows that the flintwork was distributed fairly evenly throughout the fill of the feature, with a slightly greater concentration of chips in (1639). The slightly increased number of chips in spit (1639) might register the depth of the hollow at the time the knapping scatter was formed. In terms of composition, the spit assemblages are also similar, containing a handful of flakes, bladelets and chips along with one or two microliths.

The entire assemblage from the Beechbrook Wood site includes 33 microliths and 64 microburins and 90 % of these were recovered from tree-throw hole 1623. The pit assemblage thus formed a discrete and isolated deposit and there was little evidence of Mesolithic activity beyond the confines of the pit. This favours an interpretation of a single, short-term episode of

Mesolithic occupation rather than repeated visits to the site over a longer period. On the available evidence, the most likely scenario is a period of brief, temporary habitation in the course of a hunting expedition, during which re-tooling and other general tasks were performed. Some of the material may have been scraped from a hearth, as burning was noted on 221 struck flints (15.7 % of the assemblage).

Table 4: Struck flint by type from late Mesolithic pit 1623, Beechbrook Wood (ARC BBW00).

Category	Quadrants				Spits						Total:
	1674 N. quadrant	1675 S. quadrant	1624 E. quadrant	1643 W. quadrant	1637 0.0- 0.5m	1638 0.5- 0.10m	1639 0.10- 0.15m	1640 0.15- 0.20m	1641 0.20- 0.25m	1642 0.25- 0.30m	
Flake	117	56	34	85	12	1	12	8	7	6	337
Blade	8	7	5	16	-	-	-	-	-	-	36
Bladelet	14	9	-	24	1	2	1	3	-	3	55
Bladelike flake	18	23	5	22	-	1	-	-	-	1	69
Core face/edge rejuvenation flake	-	-	1	1	-	-	-	-	-	-	2
Irregular waste	8	-	2	8	-	1	1	2	-	3	24
Chip	120	22	48	22	6	9	13	10	5	1	247
Sieved Chips 10-4mm	170	146	-	178	2	4	12	1	3	1	513
Multi-platform flake core	2	-	-	-	-	-	-	-	-	-	2
Core on a flake	-	-	1	-	-	-	-	-	-	-	1
Single platform blade core	-	-	1	1	-	-	-	-	-	-	2
Opposed platform bladelet core	1	-	-	-	-	-	-	-	-	-	1
Bladelet core on a flake	2	-	-	-	-	-	-	-	-	-	2
Unclassifiable/fragmentary core	-	-	-	1	-	-	-	-	-	-	1
Retouched flake	1	-	1	-	-	-	-	-	-	-	2
Retouched blade	-	2	-	1	-	-	-	1	-	-	4
End scraper	-	-	-	1	-	-	-	-	-	-	1
Microlith	4	9	4	8	1	-	1	1	2	-	30
Microburin	20	9	-	22	1	-	2	2	2	-	58
Truncated blade	-	1	-	-	-	-	-	-	-	-	1
Piercer	-	1	-	2	-	-	-	-	-	-	3
Unclassifiable retouch	1	1	-	-	-	-	-	-	-	-	2
Total:	486	286	102	392	23	18	42	28	19	15	1393
Total excluding chips:	196	118	54	192	15	5	17	17	11	13	
Total number of burnt struck flints:	79	37	11	70	2	2	6	7	1	6	219
Total number of broken struck flints:	250	158	61	202	9	7	22	17	9	11	739

Table 5: Classification of the microliths from late Mesolithic pit 1623, Beechbrook Wood (ARC BBW00).

Class:	Total:
1a	1
1ac	1
1b/1bc	1
5	1
6	2
7a1	1
7a2	11
Late Mesolithic fragment	7
Unclassifiable	5
Total:	30

4.2 Early Neolithic pit 1910

A total of 565 struck flints were recovered from a single deposit within pit 1910 (Table 6). A further 131 pieces (506 g) of burnt unworked flint were also retrieved. The assemblage is, technologically, almost indistinguishable from the Mesolithic material in tree-throw hole 1623, but can be attributed to the early Neolithic period on account of its association with a large assemblage of Plain Bowl pottery.

The assemblage is composed mainly of unretouched debitage, including 145 flakes and 301 chips. Blades, bladelets and bladelike flakes are well-represented by a total of 68 pieces. These provide 28.3 % of the debitage and 25.8 % of the assemblage as a whole (excluding chips). As would be expected in an assemblage of this date, this is slightly lower than the range predicted for Mesolithic assemblages and falls securely within that given for early Neolithic assemblages (Ford 1987, 79-80). Many of the blades and flakes bear the dorsal scars from previous blade removals (Fig. 3.2).

The pit contained six cores, which were aimed at the production of both flakes and blades from one or more platforms. The three complete examples range in weight from 23 g to 70 g and have an average weight of 44 g. Most have been carefully worked with a soft-hammer percussor. In two cases, a thick flake was used as a core. The slightly glossed appearance of the single platform blade core (Fig. 1.11) might indicate the use of heat-treatment.

The results of the technological analysis indicate a soft-hammer knapping strategy (Fig. 4.2) involving careful core preparation (Fig. 5.2). Five rejuvenation flakes, including two core tablets, reflect efforts to maintain the platform angle throughout the reduction process. Linear butts occur most frequently (40 pieces) along with plain and punctiform platforms (Fig. 6). As in tree-throw hole 1623, cortical platforms are fairly rare (seven pieces). Non-cortical flakes (92 pieces) and trimming flakes of all types (85 pieces) are present in approximately equal proportions (Fig. 7). A small number of preparatory flakes were also recovered (five pieces) but it seems that, as in tree-throw hole 1623, the decortication of nodules took place elsewhere.

The assemblage seems to contain a substantial amount of knapping waste, including large quantities of microdebitage, pieces of irregular waste and cores. With the exception of a conjoin between two fragments of a burnt flake, no knapping refits were found. This suggests that pieces have been removed from the scatter. A considerable number of flints are broken (319 pieces or 56.5 %). There is limited evidence that a number of pieces were deliberately snapped, a practice that seems to be particularly associated with blades.

Retouched tools are rather limited in number but broad in range. A total of 12 tools are present, providing 4.5 % of the assemblage (excluding chips). The tools include four edge-retouched flakes, one retouched blade, one burnt scraper fragment and three serrated flakes (e.g. Fig. 1.12). One of the serrated flakes exhibits edge gloss, indicating its use on silica-rich plant materials (Unger-Hamilton 1988). These serrated flakes may relate to cereal cultivation in the area at this time, and it may be significant that they are absent from the late Mesolithic and Beaker assemblages. A microscopic examination of the flints identified 109 utilised edges, which form just over half of the assessable sample (209 flints). A greater proportion of flints have been burnt than in the late Mesolithic assemblage, a total of 136 pieces (24.1 %).

The two microliths are almost certainly residual or perhaps deliberately redeposited. One is comparable to Jacobi's class 7a2 (Jacobi 1978, 16) (Fig. 1.7); the other is an unclassifiable fragment. Six microburins were also recovered from the pit, four of which are of the proximal variety and closely compare to those recovered from tree-throw hole 1623. One distal microburin and one mis-hit were also recorded. The notched piece consists of a blade with two small, closely-spaced notches on the proximal right-hand edge, perhaps representing an unfinished attempt at microlith manufacture using the microburin technique (see Inizan *et al.* 1992, 69, fig. 24). Again, the microburins and notched blade are likely to be residual elements within the pit. It may be significant that, with a single exception from ditch 1617 (Fig. 1.1), the microliths and microburins that were *not* recovered from tree-throw hole 1623 all came from pit 1910.

Table 6: Struck flint by type from early Neolithic pit 1910, Beechbrook Wood (ARC BBW00).

Category:	Total:
Flake	145
Blade	34
Bladelet	8
Bladelike flake	26
Core face/edge rejuvenation flake	3
Rejuvenation flake tablet	2
Irregular waste	22
Chip	32
Sieved Chips 10-4mm	269
Core on a flake	2
Single platform blade core	1
Unclassifiable/fragmentary core	3
Retouched flake	4
Retouched blade	1
Other scraper	1
Microlith	2
Microburin	6
Notch	1
Serrated flake	3

Total:	565
Total number of burnt struck flints:	136
Total number of broken struck flints:	319

4.3 Beaker pit 1374

A total of 676 struck flints, including 272 chips, were recovered by hand and by sieve from four deposits within pit 1374 (Table 7). Most of the material came from context (1377). A further 44 pieces (152 g) of burnt unworked flint were also retrieved. Again, these were mostly contained within context (1377). The flintwork is in fresh condition and forms a coherent early Bronze Age assemblage. Diagnostic types include three thumbnail scrapers (e.g. Figs. 1.15 and 1.16) and one barbed-and-tanged arrowhead (Fig. 1.19). The assemblage contains numerous retouched and utilised pieces and is characterised by extensive burning.

The results of the technological analysis represent a marked departure from the accomplished blade-based industries of the late Mesolithic and early Neolithic discussed above. The movement from the production of blades to the production of flakes has been well documented elsewhere (e.g. Pitts and Jacobi 1979; Ford 1987) and is explicit in the assemblage from Beechbrook Wood. In contrast to the blade-based assemblages from tree-throw hole 1623 and 1910, the material from pit 1374 is dominated by broad, squat flakes. A total of 229 were recovered, which outnumber blades by nearly 33:1. As might be expected, most pieces bear the dorsal scars of previous flake removals (Fig. 3.3).

Accompanying the morphological shift from blade to flake production is a suite of other technological changes. The habitual use of soft-hammer percussion is replaced by the use of hard-hammer percussion (Fig. 4.3) and platform edge abrasion is used only occasionally (Fig. 5.3). Platforms tend to be unelaborated, with plain and cortical types outnumbering the linear and punctiform varieties (Fig. 6). Most removals retain some dorsal cortex and preparatory flakes are well represented by 35 pieces (Fig. 7). This implies that the nodules were being introduced in an unmodified state and then decorticated on site, an activity that seems to have taken place elsewhere in the earlier periods. The microdebitage recovered from the pit (272 chips) might further suggest that some of this knapping activity took place *in situ*.

A total of six formal cores were identified, all of which were directed at the production of broad, squat flakes and usually from multiple platforms (e.g. Fig. 1.14). Complete examples have an average weight of 47 g and range from 30 g to 63 g. Six heavily burnt flake core fragments are also present. The hammerstone, also burnt, makes use of an abandoned multi-platform flake core and weighs 745 g.

The refitting exercise identified a sequence of four burnt flakes and one unburnt flake that can be refitted to a burnt multi-platform flake core (Fig. 2.1). Although no further knapping refits were found, five sets of conjoins were identified between two or more fragments of flakes that had fractured during burning (e.g. Fig. 2.2). Very few pre-burning conjoins were found, the notable exception being two halves of a snapped scraper that were subsequently burnt (Fig. 1.17).

The assemblage contains a total of 38 tools, which form 9.4 % of the assemblage (excluding chips). The retouched component is heavily dominated by edge-retouched flakes (19 pieces) and scrapers (14 pieces), including three thumbnail scrapers (e.g. Figs. 1.15-1.18). Many of the retouched flakes display scraping damage on their edges, suggesting specialisation in one type of activity. Use-wear is present on 92 flints (43.8 %) in the sample of 210 assessable pieces. Other retouched tools include an unburnt barbed-and-tanged arrowhead (Fig. 1.19), which can be compared to Green's Sutton B (h) (Green 1980, 122). Along with the thumbnail scrapers, the arrowhead provides typological confirmation of the Beaker date of the assemblage.

As already seen, a very high proportion of the assemblage has been heavily burnt (417 flints or 61.7 %). It is possible that the material was burnt together in the same fire, as most pieces are calcined to a similar degree (white-grey). The prevalence of burning is a characteristic of the assemblage from pit 562, which is also thought to be Beaker in date. It is possible that these assemblages contain the remains of feasting activity, particularly as both are associated with large quantities of burnt animal bone.

Table 7: Struck flint by type from Beaker pit 1374, Beechbrook Wood (ARC BBW00).

Category:	1375	1376	1377	1409	Total:
Flake	3	17	201	8	229
Blade	-	-	-	1	1
Bladelet	-	-	1	-	1
Bladelike flake	1	-	4	-	5
Core face/edge rejuvenation flake	-	-	1	-	1
Irregular waste	2	4	106	3	115
Chip	-	-	19	-	19
Sieved Chips 10-4mm	17	37	161	38	253
Single platform flake core	-	-	1	-	1
Multi-platform flake core	-	-	3	-	3
Core on a flake	-	-	2	-	2
Unclassifiable/fragmentary core	-	1	5	-	6
Retouched flake	1	1	16	1	19
End scraper	-	-	3	-	3
End-and-side scraper	-	-	6	-	6
Thumbnail scraper	-	-	3	-	3
Other scraper	-	-	2	-	2
Barbed-and-tanged arrowhead	-	-	1	-	1
Unclassifiable retouch	-	-	3	2	5

Hammerstone	-	-	1	-	1
Total:	24	60	539	53	676
Total number of burnt struck flints:	13	31	356	17	417
Total number of broken struck flints:	12	36	331	21	400

4.4 Cremation pit 562

A total of 147 struck flints and 28 pieces (20 g) of burnt unworked flint were recovered from a single deposit within cremation pit 562 (Table 8). The assemblage is composed almost entirely of flakes (85 pieces) and chips (37 pieces). A single core on a flake (13 g) was also present. The flintwork shares technological similarities with the material from Beaker pit 1377 and is likely to be of similar date.

Of particular note is the backed knife, which has been finely made on a tertiary blade with bifacial, slightly invasive retouch to both lateral margins (Fig. 1.20). Like all the flints in the assemblage, the knife has been heavily burnt and may represent a redeposited pyre good. It is also likely that the rest of the flints came from the pyre, as all have been burnt to a similar degree. Furthermore, to achieve the observed level of calcination, the flints would need to be burnt at a very high temperature and/or for a sustained period. Such conditions would have obtained in a cremation pyre.

Only a very careful collection procedure would have allowed for the transferral of small chips from the pyre to the pit. Perhaps they were lying on the ground surface below the pyre and were scraped up with the rest of the pyre debris, which included quantities of animal bone and charcoal. As such, the chips and flakes may have been accidental inclusions in the pit or perhaps result from feasting activities accompanying the cremation event.

Table 8: Struck flint by type from cremation pit 562, Beechbrook Wood (ARC BBW00).

Category:	Total:
Flake	85
Blade	1
Bladelet	4
Bladelike flake	2
Irregular waste	16
Sieved Chips 10-4mm	37
Core on a flake	1
Backed knife	1
Total:	147
Total number of burnt struck flints:	147
Total number of broken struck flints:	87

4.5 Ring ditch 851

An assemblage of 110 struck flints and 167 pieces (36 g) of burnt unworked flint were recovered from various interventions along the length of ring ditch 851 (Table 9). The assemblage is composed largely of unretouched flakes (22 pieces) and chips (81 pieces), but also includes a minimally retouched leaf-shaped arrowhead from context (865) (Fig. 1.13).

Table 9: Struck flint by type from ring ditch 851, Beechbrook Wood (ARC BBW00).

Category:	Context:							
	860	865	867	874	875	880	890	899
Flake	3	1	-	-	4	-	-	12
Blade	-	-	-	-	-	-	1	-
Bladelike flake	-	1	-	-	-	-	-	-
Irregular waste	-	-	-	-	-	-	-	-
Sieved Chips 10-4mm	24	8	10	5	6	14	-	-
Retouched flake	-	1	-	-	-	-	-	-
End scraper	-	-	-	-	-	-	1	-
Leaf-shaped arrowhead	-	1	-	-	-	-	-	-
Unclassifiable retouch	-	1	-	-	-	-	-	-
Total:	27	13	10	5	10	14	2	12
Total number of burnt struck flints:	8	-	3	-	1	-	-	11
Total number of broken struck flints:	14	6	7	3	3	8	-	1

4.6 Ring ditch 950

Although very little flintwork came from ditch 950, the finely flaked Beaker knife (Fig. 1.21) from context (949) is of particular significance. This retouched piece almost certainly represents a redeposited grave-good or an otherwise formally placed item, perhaps marking the succession of the later ring ditch 950, which cuts the southern edge of ditch 851.

5 DISCUSSION

The assemblage from Beechbrook Wood provides a valuable opportunity to examine various aspects of flint technology, use and discard within a chronological sequence spanning the late Mesolithic, early Neolithic and Beaker period.

The late Mesolithic assemblage probably results from an isolated incidence of short-term habitation during which tool-kits were replenished and a range of general activities performed. Although it cannot be ruled out, there is no clear evidence to suggest that the material represents an accretion of superimposed deposits resulting from the repeated use of the site. The coherence of the assemblage and its discrete concentration strongly imply a small scale, off-site activity area rather than anything like the size and complexity of a riverside base-camp (Mellars 1976, 391).

Technologically, the early Neolithic assemblage is almost indistinguishable from the late Mesolithic material (Figs. 3-7). The flintwork can be dated by its association with a large assemblage of Plain Bowl pottery, although no chronologically diagnostic types were recovered to confirm this. The small number of microliths and microburins are assumed to be residual. The assemblage contains three serrated flakes (e.g. Fig. 1.12), which may relate to the processing of plant materials. The absence of these types from the late Mesolithic and Beaker assemblages may reflect changes in economic activities over time.

While the results of the technological analysis emphasise the similarities between the late Mesolithic and early Neolithic assemblages (Figs. 3-7), the same data stress differences between these earlier industries and the flintworking of the early Bronze Age. The Beaker assemblage from pit 1374 consists of broad, hard-hammer flakes which show little preparation. The retouched component is heavily scraper-based (e.g. Figs. 1.15-1.18) and many unretouched edges have also been used for scraping. It is possible that these assemblages result from food preparation and consumption activities, perhaps feasting. The material from pit 562 is likely to be broadly contemporary. As in pit 1374, the assemblage is characterised by extensive burning and may have been involved in certain cremation or feasting rituals.

6 BIBLIOGRAPHY

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

Green, S H, 1980 *The flint arrowheads of the British Isles*. BAR British Series **75(I)**

Inizan M-L, Roche H, Tixier J, 1992 *The Technology of Knapped Stone*, Meudon : CREP

Mellars, P, 1976 Settlement patterns and industrial variability in the British Mesolithic in *Problems in economic and social archaeology* (eds G de G Sieveking, I H Longworth and K E Wilson), 375-99, Duckworth, London

Unger-Hamilton, R, 1988 *Method in microwear analysis: prehistoric sickles and other stone tools from Arjoune, Syria*. BAR International Series **S435**

Table 10: Catalogue of flint illustrated in Figure 1.

No.	Event code:	Feature:	Context:	ID/SF no.	Category:	Description:
1.1	ARC BBW 00	L. Iron Age ditch 1617	1618	AG-508	Microlith	1bc.
1.2	ARC BBW 00	L. Mesolithic pit 1623	1637	AG-3486	Microlith	Very long, narrow, class 1ac.
1.3	ARC BBW 00	L. Mesolithic pit 1623	1624	AG-3474	Microlith	5?
1.4	ARC BBW 00	L. Mesolithic pit 1623	1640	AG-3537	Microlith	Rod microlith, probably class 6. Proximal break.
1.5	ARC BBW 00	L. Mesolithic pit 1623	1639	AG-3533	Microlith	7a2

1.6	ARC BBW 00	L. Mesolithic pit 1623	1624	AG-3475	Microlith	7a2, tail lost.
1.7	ARC BBW 00	E. Neolithic pit 1910	1909	AG-4406	Microlith	7a2
1.8	ARC BBW 00	L. Mesolithic pit 1623	1674	AG-3872	Bladelet core on a flake	Neatly worked bladelet core on thick, squat, secondary flake. Removals taken down distal end using ventral surface as platform. Platform edge abrasion. 39 g.
1.9	ARC BBW 00	L. Mesolithic pit 1623	1643	AG-3579	Single platform blade core	Blade and bladelike flake removals taken down one face from plain platform with abraded edge. Good quality, light grey flint. 44 g.
1.10	ARC BBW 00	L. Mesolithic pit 1623	1643	AG-3769	Piercer	Made on long distal-trimming blade. Proximally truncated with further retouch to proximal left-hand edge, forming point at junction.
1.11	ARC BBW 00	E. Neolithic pit 1910	1909	AG-4300	Single platform blade core	Long, broad, blade removals taken down one face from plain platform with abraded edge. Back of core flaked, perhaps in preparation for later blade removals. 70 g.
1.12	ARC BBW 00	E. Neolithic pit 1910	1909	AG-4395	Serrated blade	Distal-trimming blade with thinly spaced serrations on both lateral margins, c. 6 teeth per 10mm. Use-wear.
1.13	ARC BBW 00	E. Bronze Age Ring ditch 851	865	AG-147 SF 210	Leaf-shaped arrowhead	Retouched on secondary flake, mainly with direct edge retouch; inverse on point only.
1.14	ARC BBW 00	Beaker pit 1374	1377	AG-4848	Multi-platform flake core	Neatly worked with limited platform dressing in places. Calcined white. 49 g.
1.15	ARC BBW 00	Beaker pit 1374	1377	AG-341	Thumbnail scraper	Small, hard-hammer, side-trimming flake with abrupt retouch to distal end. Use-wear.
1.16	ARC BBW 00	Beaker pit 1374	1377	AG-308	Thumbnail scraper	Made on broad, squat, tertiary flake. Semi-abrupt to abrupt retouch on left-hand and distal edges.
1.17	ARC BBW 00	Beaker pit 1374	1377	AG-364 AG-4950	Conjoining end-and-side scraper (ZZ-20)	Finely retouched end-and-side scraper, possibly deliberately struck in two. Burnt after breakage.
1.18	ARC BBW 00	Beaker pit 1374	1377	AG-269	End-and-side scraper	Neat, semi-abrupt and slightly invasive retouch to both lateral margins; abrupt retouch to distal end. Made on plunging tertiary flake.
1.19	ARC BBW 00	Beaker pit 1374	1377	AG-325	Barbed-and-tanged arrowhead	Sutton B. Partially covering retouch on both surfaces.
1.20	ARC BBW 00	Cremation pit 562 (unphased)	561	AG-97	Backed knife	Heavily calcined. Elongated, 'leaf-shaped' knife made on tertiary blade. Bifacial, slightly invasive retouch to both lateral margins in discontinuous lengths.
1.21	ARC BBW 00	E. Bronze Age ring ditch 950	949	AG-184	Backed knife	Small, neatly retouched Beaker knife. Bifacial edge retouch, invasive in places but not fully covering. Tip lost, but probably ended in point.
1.22	ARC BBW 00	L. Iron Age ditch 896	894	AG-163 SF 216	End-and-side scraper	Neatly retouched on tertiary flake blank.
1.23	ARC BBW 00	L. Bronze Age ditch 1196	1197	AG-202	Denticulated scraper	Thick, hard-hammer flake. Neat scraper retouch on right distal edge, truncated by a series of large removals forming coarse teeth on left edge. Possible core on a flake.

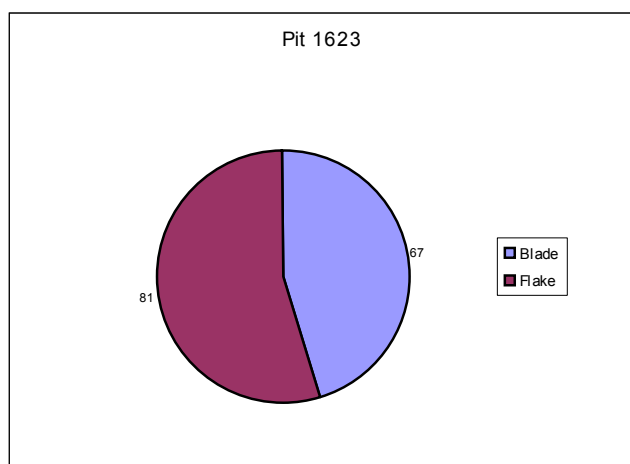
Table 11: Catalogue of flint photographed in Fig. 2.

No.	Event code:	Feature:	Context:	ID/SF no.	Category:	Description:
2.1	ARC BBW 00	Beaker pit 1374	1377	AG-4881 AG-339 AG-340 AG-4885 AG-4926 AG-4966	Multi-platform flake core with five refitting flakes (ZZ-26)	Burnt multi-platform flake core with series of five refitting flakes, four of which have been struck from the same platform. Includes one unburnt flake. Several further pieces of a related flint noted that would not refit but probably derive from the same core.

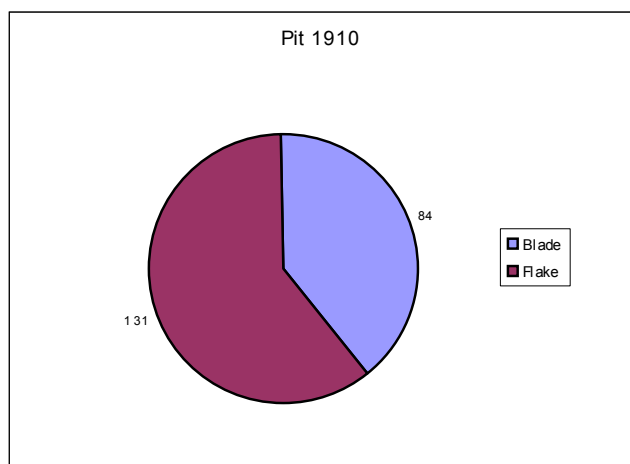
2.2	ARC BBW00	Beaker pit 1374	1377	AG-431 AG-432 AG-436 AG-4956 AG-4957 AG-4963 AG-4986 AG-4991	Conjoining retouched flake (ZZ-23)	Large, broad, tertiary flake with edge retouch. Heavily calcined. In eight refitting fragments, burning breaks.
-----	-----------	-----------------	------	---	------------------------------------	---

Fig. 3: Types of dorsal scar in a sample of flints from pit 1623, pit 1910 and 1374, Beechbrook Wood (ARC BBW00).

1.



2.



3.

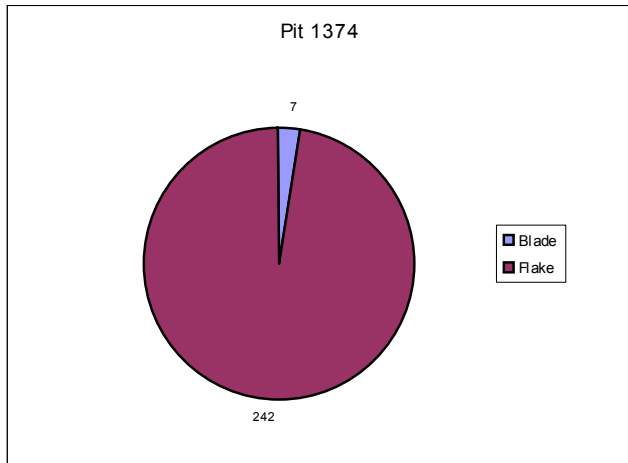
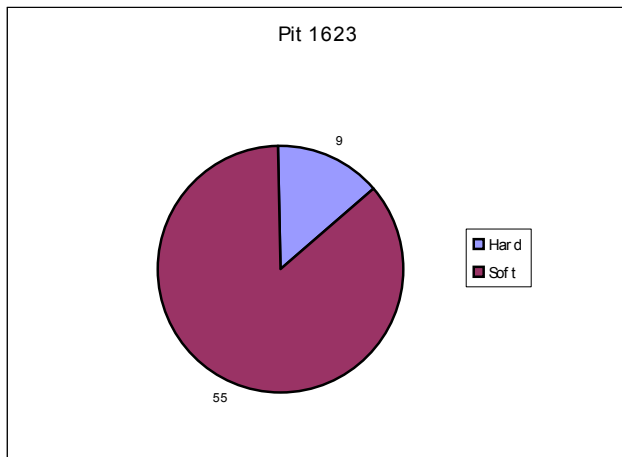
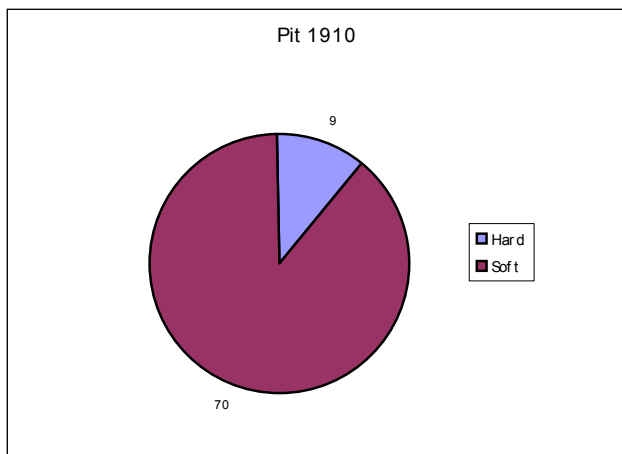


Fig. 4: Frequency of soft-hammer and hard-hammer percussion in a sample of flints from pit 1623, pit 1910 and 1374, Beechbrook Wood (ARC BBW00).

1.



2.



3.

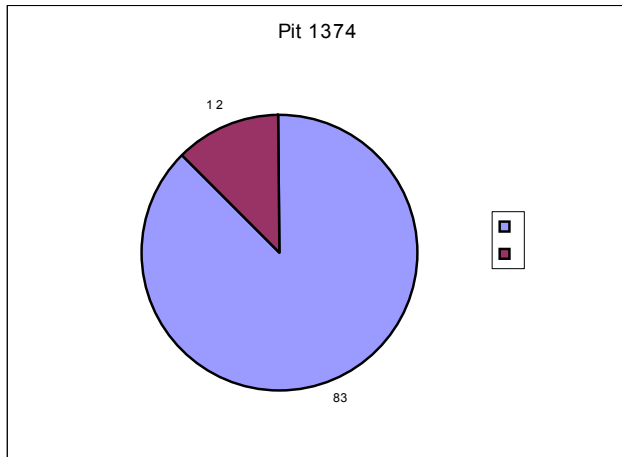
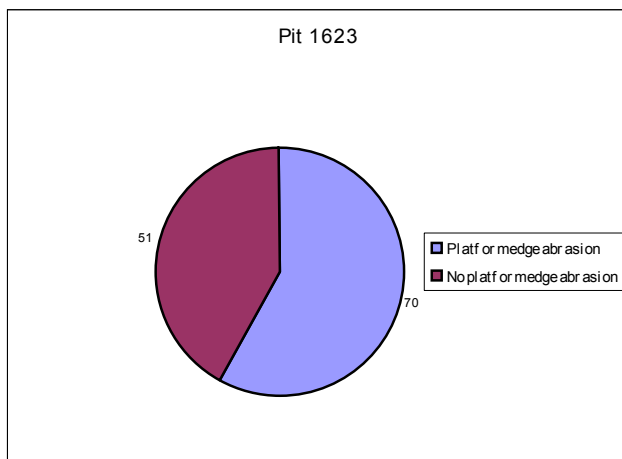
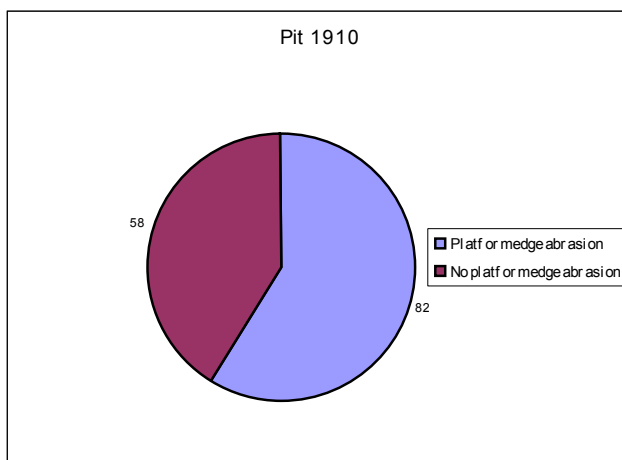


Fig. 5: Frequency of platform edge abrasion in a sample of flints from pit 1623, pit 1910 and 1374, Beechbrook Wood (ARC BBW00).

1.



2.



3.

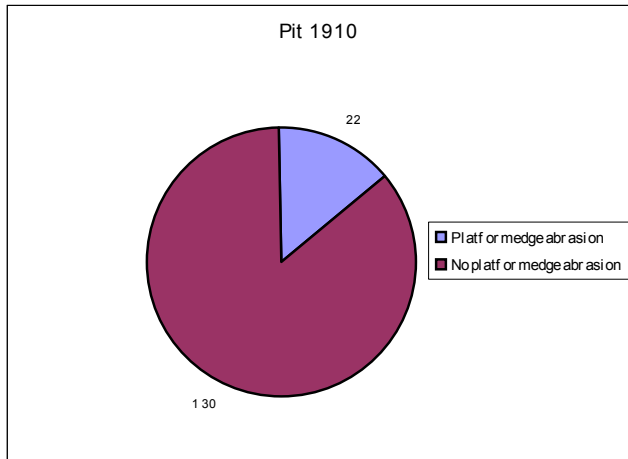


Fig. 6: Comparison of butt type in a sample of flints from pit 1623, pit 1910 and 1374, Beechbrook Wood (ARC BBW00).

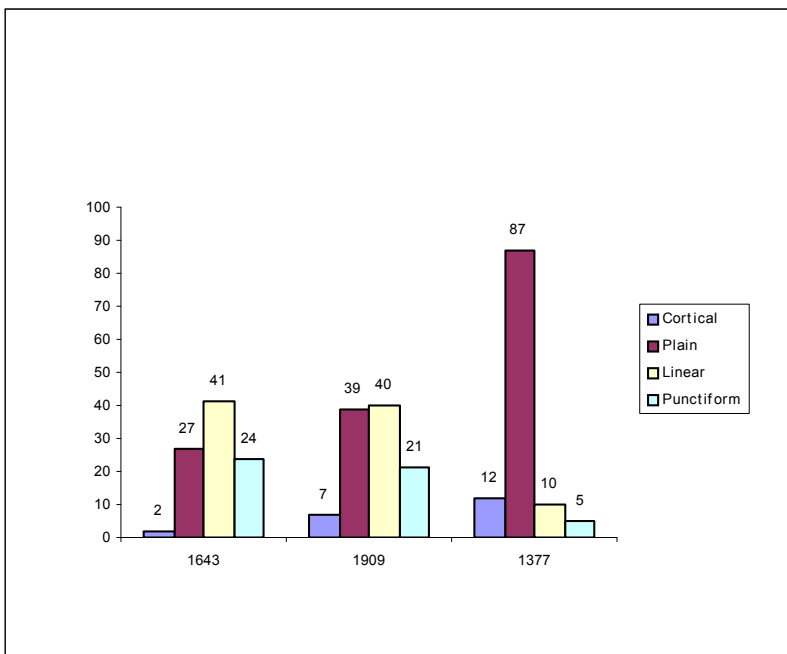


Fig. 7: Comparison of flake type in a sample of flints from pit 1623, pit 1910 and 1374, Beechbrook Wood (ARC BBW00).

