1.1 Assessment of Worked Flint

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Introduction

1.1.1 In total 7,548 pieces of worked flint were recovered during the excavation, with an additional 65 pieces recovered during the preceding evaluation. For the purposes of this assessment a non-random subset sample of 1,088 pieces was examined from four distinct areas within the Mesolithic remains, comprising collection units within artefact scatters **137** and **144**, and pits **72** and **167**. This subset represents a *c*. 14.3% sample of the complete assemblage.

Methodology

1.1.2 The assessment was designed to:

- *estimate the approximate age of the assemblage*
- *explore the potential for horizontal patterning*
- *explore the potential for vertical patterning*
- *suggest useful directions for the analysis of the whole assemblage*

1.1.3 Differences in the spatial distribution of the various components of the worked flint assemblage across the site were explored using the four sampled units. This was done by collapsing the usual typological classes into four groups:

- *tools (all tool classes, including retouched and edge-damaged pieces)*
- *production waste (cores, core dressings, microburins and spalls)*
- *blades and flakes*
- *fragments*

Quantifications

1.1.4 Worked flint quantification by artefact type (**Figure 3**) is provided in **Table 9**. In summary, the sampled assemblage comprised 48 identified tools, including 26 points (all of which were microliths), two scrapers and four piercers. In addition there were 80 artefacts directly related to tool production, including eight cores and 27 microburins, and 250 complete blades and flakes. As is usual the majority of the sample was made up of fragments (*c*. 65% of the entire assemblage).

1.1.5 Microliths formed the largest class of tool, dominated by small convex-backed forms (five) and scalene micro-triangles (four). Both these forms are current in the Later Mesolithic period in Britain (*c*. 6750 - 3550 BC). Other microlith types identified include single examples of an obliquely truncated point, a partially backed point, a basally worked point and a straight-backed point. The first two types can occur throughout the Mesolithic period, while the straight-backed point is typically Later Mesolithic in character. The basally worked point, however, is more closely identified with a mid-Mesolithic date (i.e. the 7th millennium BC).

1.1.6 The remainder of the tool assemblage comprised two short end-scrapers and possible single blow burins, as well as four well-made bilateral piercers or awls. There is also an array of miscellaneously retouched and edge-damaged pieces.

1.1.7 The debitage assemblage is dominated by 27 microburins, the by-product of microlith manufacture. The close correspondence of microburins and microliths may suggest on-site manufacture of these points, a speculation testable by limited refitting. There are also eight cores, most of which are of the single platform/partly worked variety, and a limited array of core dressings, including crested and plunging pieces.

1.1.8 The laminar assemblage (complete blades and flakes) has a blade:flake ratio of c. 1:4. This approximates other recorded ratios for blade-based assemblages elsewhere in Britain and is generally considered to be indicative of the presence of Mesolithic technology. Worked flint assemblages from later periods (i.e. Neolithic and Bronze Age) typically yield blade:flake ratios of 1:9 or greater.

1.1.9 The frequency of fragments (*c*. 65%) is somewhat lower than might usually be expected in typical Mesolithic assemblages, where percentages approaching 90% have been obtained in high-resolution excavations. The significance of this feature is at present unknown but is more likely to relate to preservation, recovery or sampling biases than to genuine changes in flint reduction strategy.

1.1.10 In relation to the horizontal (i.e. spatial) distribution of material, each of the features examined was remarkably consistent in composition (**Figures 4-7**), however, two discrepancies:

- *the absence of tools in flint scatter **137*** (**Figure 4**)
- *the increased frequency of complete blades and flakes in flint scatter **144*** (**Figure 5**)

1.1.11 These effects may be a result of scatter **137** being further from the centre of Mesolithic activity than scatter **144**. Full analysis of the assemblage will clarify these results.

1.1.12 In relation to the vertical (i.e. temporal) distribution of material for all flint categories, no notable anomalies were observed. The majority of the total assemblage occurs in the top 0.10 m of the soil profile. Smaller frequencies are recorded between 0.10 m and 0.20 m and only trace frequencies below this. There is no marked variation between the areas examined with the exception that scatter **137** is not represented below 0.20 m (**Figure 8**). A similar picture emerged when just the distribution of tools was examined (**Figure 9**).

1.1.13 The general stratigraphic pattern appears to suggest the assemblage was deposited over a relatively short period of time. There do not appear to be any discrete periods of re-use.

1.1.14 The entire sample was made of flint with the exception of three pieces made of chert. The colour of the flint varied from a light, semi-translucent grey (*c*. 50%) to a high quality translucent dark grey to black (*c*. 16%). A small percentage of the sample, particularly the dark grey/black flint, had a milky blue patina (*c*. 3%). Tools were made on both major colour-types of flint.

1.1.15 Where cortex was preserved this was often thick, dirty white in colour and possessed a smooth surface, somewhat chalky in texture. These features indicate that the raw material was obtained from a secondary deposit, possibly head. The local flint was generally stained light brown to orange in colour and does not seem to have been used to any great extent.

Provenance

1.1.16 A relatively small proportion of the pieces examined exhibited recently chipped or otherwise damaged margins (*c*. 19%). This suggests that the assemblage has been extremely well preserved, and may therefore be considered to be relatively undisturbed.

1.1.17 No artefacts were examined in the sample that would contradict a mainly Later Mesolithic date (c. 6750 - 3550 BC). However, it is known that some younger Neolithic material is associated with the assemblage although not part of the sample assessed. At present it is felt that this later material is intrusive and that the main Mesolithic assemblage is uncontaminated. The oldest artefact examined (the obliquely-based point) would probably have been current in the earlier half of the Later Mesolithic. The remainder of the diagnostic artefacts would not be out of place in this context, although their currency also runs into the second half of the Later Mesolithic period.

Conservation

1.1.18 There are no conflicts between further analysis and long term storage

Comparative material

1.1.19 Very few substantial Mesolithic sites are known from within the modern county of Kent (Reynier 1998, 176), the majority of the material recorded for the county being stray finds or small unprovenanced groups. The nearest documented example of these comes just north of the neighbouring village of Harrietsham where a small 'Horsham' type assemblage (i.e. *c*. 7000 BC) was recovered by a local collector (Jacobi 1982). Stray finds belonging to the Later Mesolithic have also been recovered from the fields all around the villages of Harrietsham and Sandway, including Moncktons collections noted in the Environmental Assessment (URL 1994).

1.1.20 As far as formal sites are concerned very few exist, and virtually all of these belong to the Later Mesolithic period. For example Perry Wood, Selling (Woodcock 1975), Finglesham, Northbourne (Parfitt and Halliwell 1984), Priory Gardens, Orpington (Grey and Tyler 1991) and Well Hill, Chelsfield (Jones 1952).

1.1.21 Interestingly, Later Mesolithic sites from Kent, and those from south-eastern England in general, tend to be dominated by scalene micro-triangles and straight, bilaterally backed points ('rods'). The dominance of convex-backed points in the Sandway Road assemblage is therefore unusual. Indeed, no precise parallel material exists. Whether this statistic is an effect of the sample or reflects a genuine change in assemblage structure will become clear upon further examination of the remaining assemblage.

Potential for further work

1.1.22 On the basis of the 1,088 pieces examined in the assessment sample the following conclusions can be made:

- *The assemblage is predominantly of Later Mesolithic date (c. 6,750 - 3,550 BC)*
- *The assemblage may have formed over a relatively short time period*
- *There is some evidence of spatial variation across the site*
- *There is no evidence of sterile horizons*

1.1.23 The assemblage appears to be in excellent condition, a fact alone that should raise the possibility of a limited refitting programme. Not only would this shed light on how the assemblage was formed but it would also serve to clarify the tentative assumption made here that the assemblage formed over a relatively limited time period.

1.1.24 As outlined above, there is some evidence of spatial patterning across the site, notably in scatter **144**, although the small size of the sample from this area cannot preclude a bias. Because of the demonstrated potential for spatial patterning, it is probable that further detailed spatial analysis of the entire assemblage will indicate specific activity zones within the area.

1.1.25 No notable patterning was observed in the vertical distribution of the assemblage. Specifically there were no sterile horizons evident and the fall-off of the artefact frequency with depth is smooth. This suggests that the site was not re-used over a long period of time. These observations, together with the typological evidence presented above, argue that the site might have been formed over a comparatively short period of time.

Bibliography

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Table 9: Worked Flint quantification by artefact type

Artefact Type	Number	Group %	Total %
Tools			
Scrapers	2	4.17%	0.18%
Piercers	4	8.33%	0.37%
Burins	2	4.17%	0.18%
Projectiles (arrowheads)	0	0.00%	0.00%
Denticulates (& micro den)	0	0.00%	0.00%
Fabricators	0	0.00%	0.00%
Microliths	26	54.17%	2.39%
Core tools (axes etc.)	0	0.00%	0.00%
Other tools	0	0.00%	0.00%
Misc. retouch	14	29.17%	1.29%
(Tools sub-total)	***48***		***4.41%***
Production			
Flake cores & core frags	3	3.75%	0.28%
Blade(let) cores & core frags	5	6.25%	0.46%
Rejuvenation tablets	0	0.00%	0.00%
Crested pieces	3	3.75%	0.28%
Microburins	27	33.75%	2.48%
Chips	42	52.50%	3.86%
(Production sub-total)	***80***		***7.35%***
Blades & Flakes			
Blades & bladelets (inc. no broken)	49	19.60%	4.50%
Flakes (inc. no. broken)	201	80.40%	18.47%
(Blades & flakes sub-total)	***250***		***22.98%***
Fragments			
Debitage	710	100.00%	65.26%
(Fragments sub-total)	***710***		***65.26%***
Total	**1,088**		

1.2 Assessment of Burnt Flint

Table 10: Burnt Flint quantification

Context	No	Weight	Comments
U/S	11	92	
1	17	308	
10	1	4	
15	6	42	
49	8	4	
56	1	1	
64	4	1	
70	15	92	
73	11	34	Mesolithic pit 72 fill
73	69		Unit 4 small finds, not weighed
87	5	26	
103	10	42	
113	2	6	
116	3	4	
117	12	22	
122	5	42	
124	9	40	
126	1	4	
128	71	376	
129	42	432	
130	1	2	
131	4	10	
132	2	24	
134	3	6	
137	1		Unit 1 small finds, not weighed
138	1	1	
144	15		Unit 2 small finds, not weighed
149	38	368	
159	8	12	
163	2	8	
167	207		Unit 3 small finds, not weighed
168	3	4	
170	5	8	
172	3	4	
173	12	80	
174	2	16	
175	5	26	
176	11	72	
177	12	50	
178	12	100	
179	2	12	
180	99	486	
181	140	486	
182	166	488	
183	142	498	
184	147	394	
185	67	424	
186	223	470	
187	123	204	
188	74	408	

Contd.

Table 10: Burnt Flint quantification (contd.)

Context	No	Weight	Comments
189	26	130	
190	201	484	
191	114	132	
192	88	200	
195	35	46	
196	789	1356	
197	55	188	
198	1077	1634	
199	118	501	
200	139	540	
201	12	114	
202	801	1646	
203	185	538	
204	35	166	
205	34	76	
206	617	1220	
207	98	228	
208	70	430	
210	491	856	
211	28	56	
212	17	100	
213	13	44	
214	2	1	
215	47	66	
216	72	126	
218	21	30	
219	32	52	
220	50	102	
222	3	9	
223	36	36	
224	16	34	
227	8	4	
228	43	88	
229	11	22	
230	102	198	
231	65	118	
232	32	52	
233	23	50	
234	17	38	
235	61	162	
236	57	88	
237	25	2	
239	79	378	
241	55	252	
TOTALS	**7733**	**18826**	

Weight does not include Burnt Flint Small Finds recovered as 3-d recorded items from worked flint collection units 1 – 4.