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A MESOLITHIC SITE AT WAWCOTT KINTBURY

F. R. FROOM

SUMMARY

The excavation of a mesolithic site near Kintbury is described. This forms part of a systematic and long term investigation into the mesolithic of the Kennet area in which about fifty sites have so far been located. Following surface collection, the site was excavated in 1964 and 1966. In addition to an assemblage of flint artifacts the excavations produced evidence for a substantial structure, made by piling the spoil of a pit, dug into the gravel sub soil, around its perimeter; associated post holes were also identified. The flint industry is reported in detail and shown to be significantly different from that normally associated with the local maglemosian. The report was first submitted for publication in 1967.

LOCATION AND HISTORY OF THE SITE

(Fig. 1 and 2)

Wawcott I (SU 389676)

Wawcott Farm is 1,150 yards north-west of Kintbury parish church, the site to be described below lying in the field immediately adjacent to and to the south-west of the farm buildings. Other sites are known to exist in the fields to the east. The site occupies the edge of the low gravel terrace which borders the north side of the Kennet floodplain. At present a small bourne joins the main river about 300 yards upstream (west) of the site and it is likely that during the mesolithic this was a more permanent stream. The whole area around the site was probably very marshy and studded with small gravel islands, which could offer suitable camping sites, particularly for people who travelled by water.

The writer examined the field after ploughing in 1960 as part of the systematic survey of the area (Froom 1963). Some quantity of material was recovered including finished forms, the most noteworthy of which was an axe-like implement of a material subsequently identified as a black chert, a rare type whose most likely origin was an outcrop near Shaftesbury, Dorset (Froom 1964). In 1963 three small trials established the existence of a stratified site and the first full excavation took place in April 1964. This suggested the existence of some structure in addition to producing an important flint industry. A second excavation was, therefore, carried out during the latter part of 1966, in the course of which the structure was characterised, the sample of the flint industry was enlarged, and a charcoal sample for dating purposes was recovered.

METHOD OF EXCAVATION

(Fig. 3)

The technique adopted by the writer was to set out two axes at right angles which act as the foundation of a grid system, with a basic unit of the yard square transect; one axis is lettered and the other numbered, so that each transect can be identified by a unique letter–number combination.

The excavation of 1964 involved the clearing of transects K24–30, L24–26 and 29–30, M25, N24–25 and O24–25; (L27 was cleared in a trial excavation in 1963). The transects excavated in 1966 were: M24 and 26–28, N26–30, O26–30 and P24–30. At the same time transects M25, N24–25 and O24–25 were cleared and re-exposed.

During 1966 in the area where the existence of a structure was suspected the overburden was stripped and transects MNO/26 were left initially, both to obtain the stratification across the structure and for the recovery of a density profile. Once the pit had been delimited, the filling was removed separately. Although there was no natural division the normal thickness of the mesolithic layer had been established in the

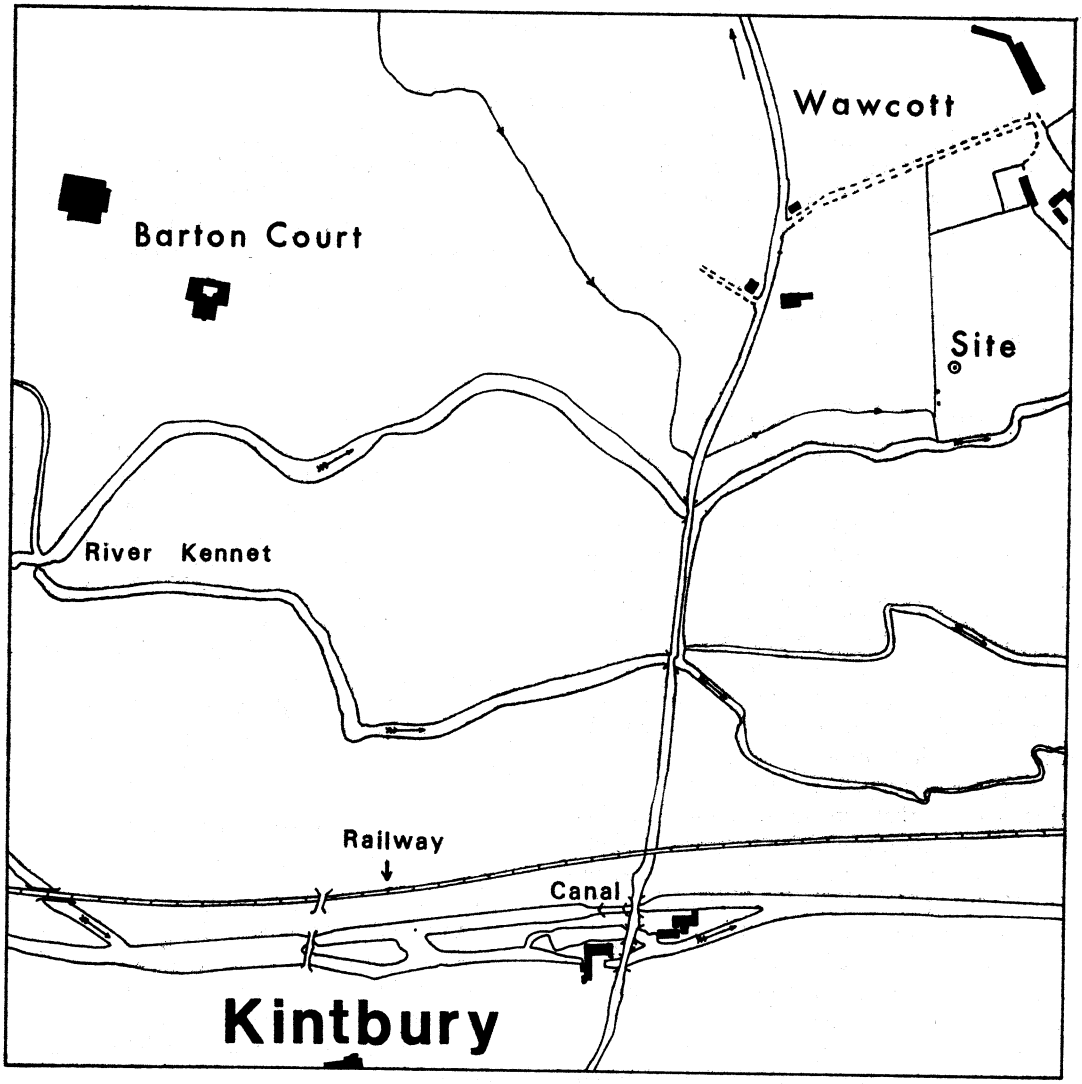


Fig. 1. Location, SU 38–39; 67–68. Only features significant to locating the site are included. Note that the River Kennet flows through three major channels, effectively defining the floodplain. The arrow at the top of the map indicates the road which joins the A4.

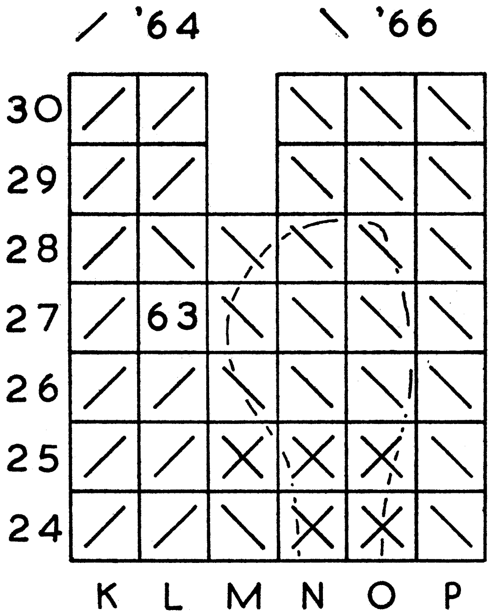


Fig. 3. *General plan of the excavations. The East-West axis was lettered P–K; the North-South numbered* 30–24. *The year of excavation is indicated by the direction of the diagonal, except for the trial removed in* 1963 (*indicated as* '63).

1964 excavation. It was hoped that if there had been more than one occupation this might show in the silting of the pit, either as separate horizons of artifacts separated by sterile bands, or as well defined maxima and minima in the frequency of artifacts with depth. In order to obtain the necessary data, transects MNO/26, were then excavated as a vertical series of two inch thick spits, each of which was measured during excavation so that its volume could be calculated. The density of artifacts at any given depth could thus be evaluated with results which are described on p. 43.

STRATIFICATION

(Fig. 4)

The excavation revealed a fairly uniform layer of topsoil whose thickness was usually between five and eight inches. The topsoil was a dark brown stony loam and may have once been somewhat peaty. It contained a variable number of artifacts. There is evidence to suggest that immediately to the east of the excavation the topsoil rests directly on gravel, and it is likely that many of the artifacts in the topsoil have their origin in this area where the mesolithic horizon merges with the plough layer.

Over most of the excavation, but especially the western parts, the topsoil rested on a brown loam. It was easily distinguished from the top-soil by its much paler colour and smaller stone content. The thickness of this layer varied but was usually only a few inches. Artifacts were found in this layer but in no great number. The origin of this layer is not definitely known though it also constitutes much of the filling of a Roman ditch. See below p. 43 for a specialist report.

Below the brown loam and covering virtually all the surface of the gravel was a layer of pale largely stone-free sand apparently deposited in slow flowing water. The thickness varied from one inch to about ten inches as the gravel sloped down gently to the south and west. Artifacts were found in the surface of the sand and decreased in frequency with depth. Very few were found on or near the surface of the gravel where there was no disturbance. It seems therefore that most of the sand was present before the site was occupied.

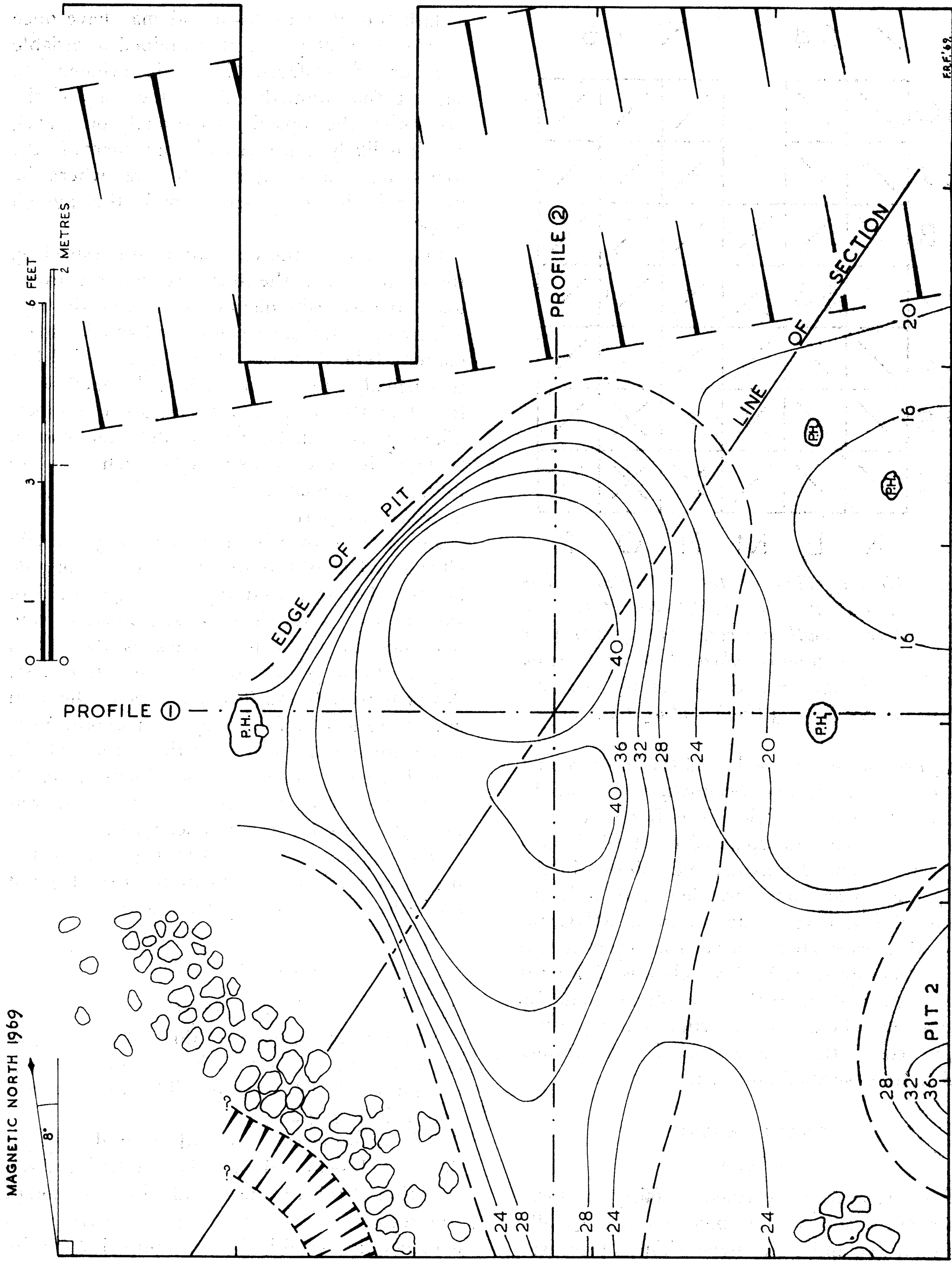
The gravel was a typical flint gravel consisting of nodules with a maximum size of about six inches set in a clayey sand matrix.

THE STRUCTURE

(Fig. 2 and 4)

The pit was apparently dug into the gravel at about its highest point because of the dampness of the situation. The main details appear in Fig. 2 and 4.

The stratification in and around the pit deserves close attention. Although the increased elevation of this area has resulted in the plough soil resting almost on the gravel there is no evidence that spoil had been dumped along the


PROFILE ①
PROFILE ②
EDGE OF PIT
LINE OF SECTION
PIT 2
P.H.1
P.H.
MAGNETIC NORTH 1969
8°
6 FEET
2 METRES
40
36
32
28
24
20
16
F.R.F.'69

eastern side of the pit. Particularly in the area of transects P25–27 there was a thin but definite layer of relatively pure pale sand. Unfortunately where this would have been most clearly defined, the stratification is complicated by the existence of a second unexcavated mesolithic pit and a modern disturbance. The adjacent filling was of relatively pure sand which did not contain any gravel. By contrast there was abundant evidence that considerable amounts of spoil had been piled along the western edge of the pit, especially in transects M24–27. Similarly a large number of big flint nodules from the gravel were observed, largely in transects L24–25 where they formed a rough quandrant. Again in transect M24 a group of similar nodules were recognised apparently piled one on top of another. Whether this was a purely fortuitous arrangement, a deliberate revetting, or even dry walling of the spoil is open to debate. While collapsed walling or revetting would give rise to such a pattern, large flints will always have a tendency to roll away from a spoil heap. An opportunity to examine this point might arise if the second pit were excavated.

The stratification of the pit fill also throws light on the nature of the dump. The lowest part of the pit was filled by a grey sand.[1] The middle of the pit fill and the upper section on the east side were essentially the same as the stoneless sand covering the rest of the site, although within the pit it became somewhat ochreous. However the western part of the pit fill consisted of a block of more or less pure gravel separated from the true edge of the pit by a layer of sand. This increased in thickness towards the bottom of the pit. This block of gravel was almost entirely devoid of artifacts, in contrast to the sandy fill.

It may be suggested that the spoil from the pit had been dumped along the western side, and, if not held in place on its outer limit, must have been retained on the inside, possibly by some form of wattle structure perhaps employing the one large post hole in this position. Three smaller post holes were found on the eastern edge of the pit and others may have been lost with weathering. After the occupation of the shelter it fell into disrepair and began to silt up with sand and artifacts washing in during flooding. When the group returned the depression and superstructure along the western side may still have offered some shelter. Subsequently, however, the internal retaining structure collapsed and the piled gravel spoil spilled into the pit. If this had not been retained in a physically unstable conformation it would have come into the pit over a period of time and have become mixed with sand and artifacts.

During the remaining silting of the pit the resultant depression was chosen as the site for a hearth. From the accumulation of shattered flints and the degree to which they had been calcined, the hearth must have been used with some intensity. Charcoal was recovered from the hearth and one large piece found near its base was submitted for a radio carbon determination. This has now given a date of 5260 ± 130 BP or 3310 ± 130 BC (BM–449).

THE DITCH

(Fig. 2)

The shape of this feature leaves little doubt that it is of an artificial rather than natural origin. One section had been dug slightly deeper than the remainder and it has been suggested that this may have been due to gang labour. The primary silt is gravel and the secondary silt a brown loam, the latter containing a few flint artifacts and several undiagnostic sherds most probably of Romano-British date

THE FLINT INDUSTRY

During the excavations worked flint was recovered separately from the brown loam, the pale sand, and the deeper pit filling, that is the filling more than eight inches below the surface

Fig. 2 (opposite). Site plan and pit contours. Post holes are marked P.H.

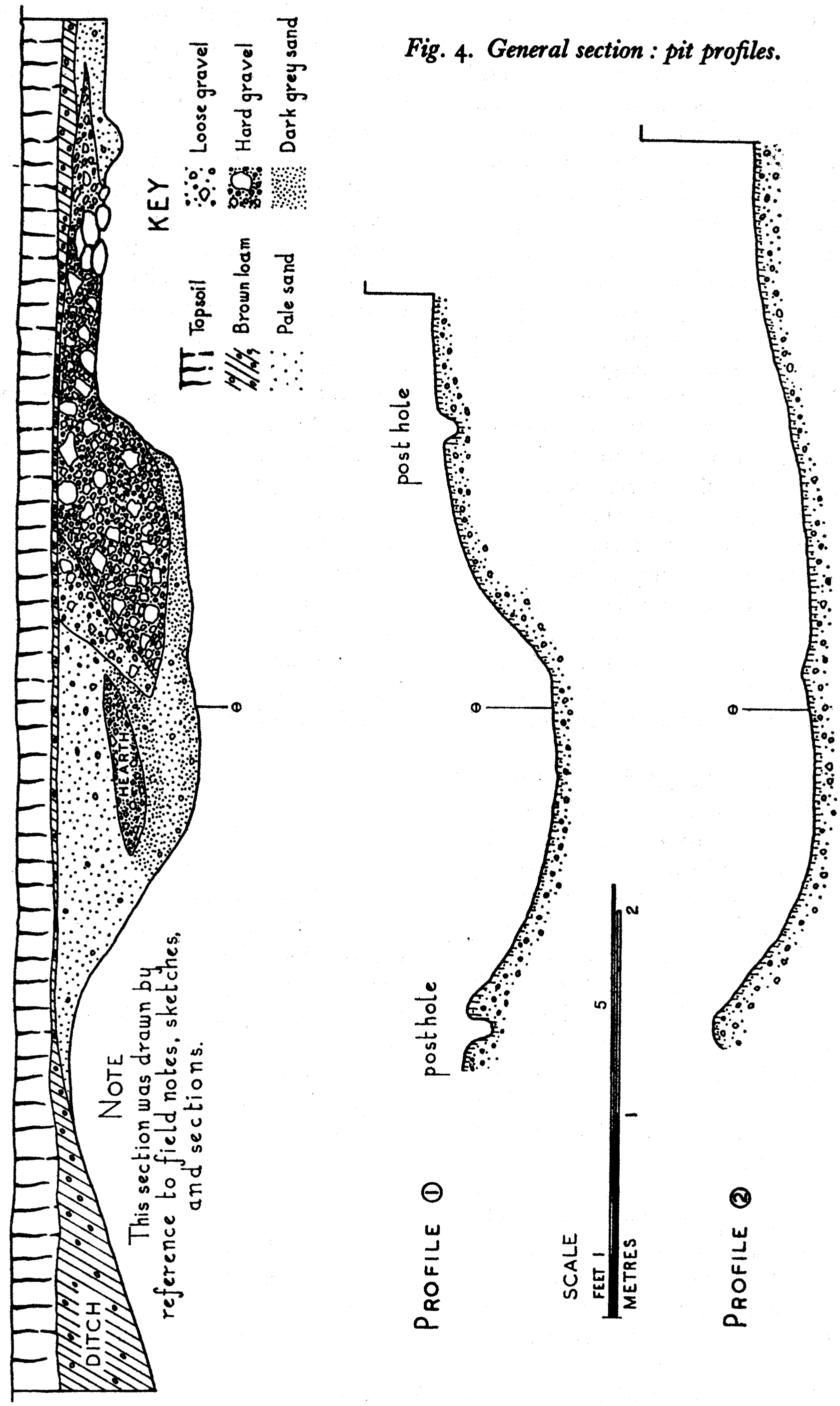


Fig. 4. General section : pit profiles.

of the pale sand. In the case of the latter layer the finds were also grouped by transects.

The worked flints from the brown loam cannot be differentiated from those in the apparently undisturbed mesolithic layers below. However, they are not included in this report unless otherwise indicated. The artifacts from the pale sand and the deeper pit filling cannot be differentiated at all and will therefore be treated as a single homogeneous assemblage.

The flints were sorted and recorded according to rigorous methods developed in an effort to facilitate more exact comparisons with other sites. No apology is offered for the detail in the following account.

The broad outline of the assemblage appears from the division of the artifacts into major groupings or elements. Five such elements may be recognised:

	Flints
1. Core element	72
2. Unspecialised waste	4,084
3. Blade element	464
4. Microlith element	112
5. Tool element	74
Whole assemblage	4,806

These elements will now be discussed in detail.

The majority of the terms used here are defined in a glossary at the end of this paper.

RAW MATERIAL

The identification of different types of flint is very uncertain if based on only a superficial examination. Some waste flakes were boiled with a five molar hydrochloric acid solution and the resulting solution gave a strong positive reaction when tested for iron. It is likely that most if not all the flints are coloured to some extent by absorption of iron compounds. Nevertheless it is clear that brown flint was commonly used at the site. Little of the flint seems to have been collected directly from the chalk and much appears to have been gleaned from local areas of gravel and clay with flints. Quite often the nodules appear to have been of low quality, shattering quite early in preparation.

1. (i) *Cores* (Fig. 5)

The details of this material are conveniently summarised in Table 1.

Commentary In making the basic division of core types those examples with less than three blades removed are designated flake cores. In most cases no blade beds appear. The fact that they never came into full use might be explained by the frequent presence of cherty inclusions or incipient frost fracture. The flake cores exhibit the same basic knapping techniques as the blade cores and the ratio of single platform to two platform cores is not significantly different. This suggests that the main geometry of the core was determined at a very early stage of manufacture.

Many of the blade cores appear to have been made from nodules of flint of about the same size and show little flaking but that required for the platform(s) and working face; this is true of nine sub conical cores and nine

TABLE 1.

Type	*Number*	*Maximum dimension of working face*	*Weight*
Single platform, struck around >70% circumference (conical)	1	—	—
Single platform, struck around 20–70% circumference (sub conical)	11	40-67 mm	20–95 g
Two platform, typical	14	35-69 mm	36–160 g
Two platform, atypical	2	—	—
Paraboloid	2	—	—
Total number of blade cores	30		
Flake cores	17		

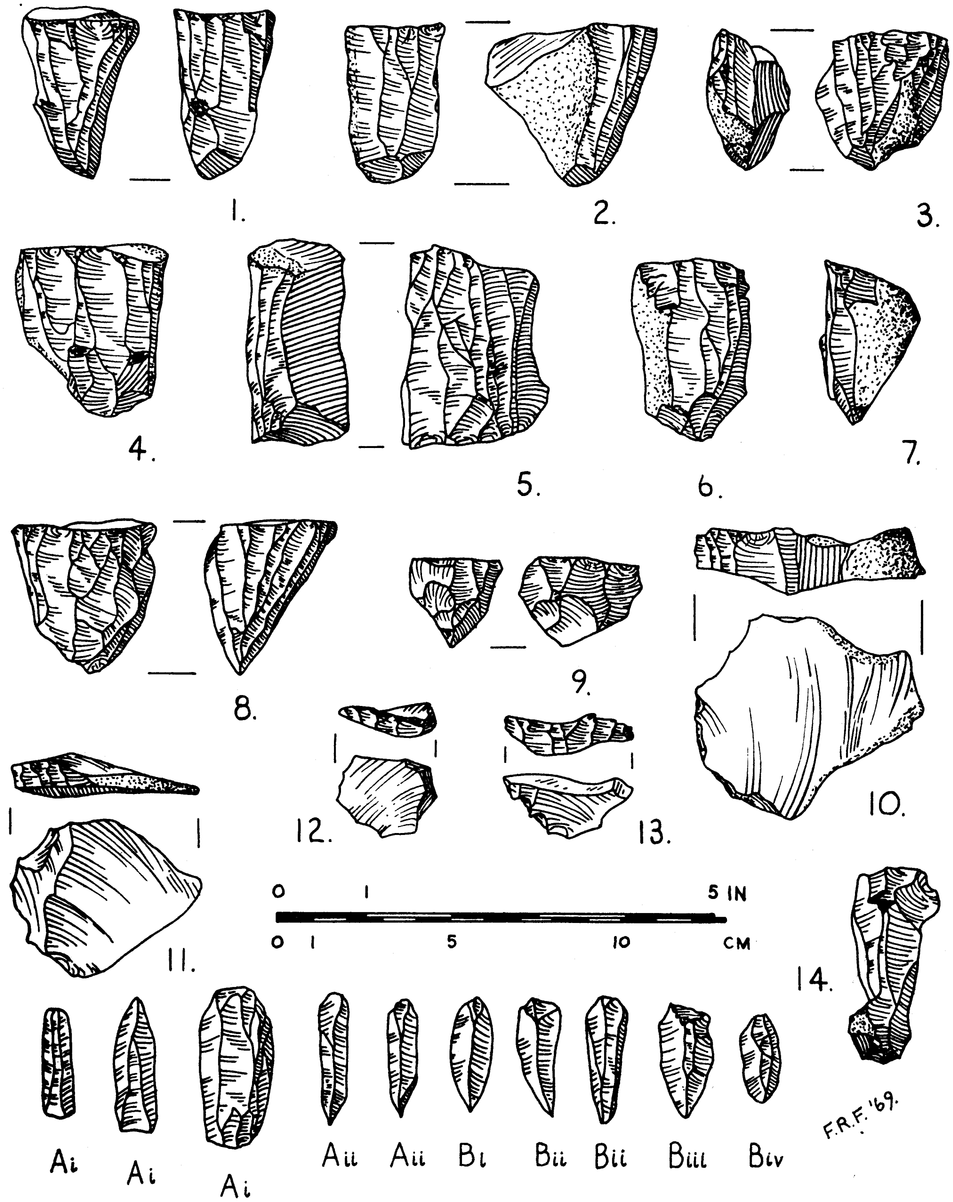


Fig. 5. Cores, core rejuvenating flakes, blades. No. 1 *conical core; No.* 2–4 *sub conical cores; No.* 5–7 *typical two platform cores; No.* 8–9 *paraboloid cores; No.* 10–13 *core rejuvenating flakes, 'basal discs'; No.* 14 *core rejuvenating flakes, working face trimming flake. Bottom row: typical examples of the different types of blades.*

TABLE 2.

Maximum dimension	Bashed lumps Number	(as %)	Primary flakes Number	(as %)	Maximum dimension	Secondary flakes Number	(as %)
>71 mm	14	(6)	9	(2)	>61 mm	11	(2)
70–46 mm	88	(35)	93	(18)	60–41 mm	109	(17)
45–21 mm	148	(59)	418	(80)	40–21 mm	519	(81)
Total all sizes	250	(100)	520	(100)		639	(100)

typical two platform cores. Two sub conical and five typical two platform cores represent parts of much larger nodules.

For drawings see Fig. 5; No. 1 conical; No. 2–4 sub conical; No. 5–7 two platform typical; No. 8, 9 paraboloid.

1. (ii) *Core rejuvenating flakes*
(Fig. 5, No. 10–13, 14)

Twenty-five examples were recorded. Two principle types may be recognised. First are those which represent the removal of a damaged planar striking platform, for example a badly bruised edge. These may be termed 'basal discs'. Their removal produces a new platform parallel to the first. There are twelve such flakes. Secondly there are those flakes which have been detached from the working face in order to remove such irregularities as accumulated hinge fractures. Six such flakes were noted. In addition to these seven plunger flakes struck from blade cores were recorded. It is open to speculation whether or not these are deliberate products and they are certainly not easily explained. No flake was found which could represent the conversion of a single platform into a two platform blade core.

2. (i) *Unspecialised waste*

Flints numbering 4,084 may be classified within this group. Their principal characteristics appear in Table 2:

2. (ii) *Blade production rubbish*

Fragments numbering 771 appear to represent waste from blade production. Their main characteristics are summarised in Table 3.

In addition to these there were 1,904 spalls, that is unspecialised debris with a maximum dimension of less than 20 mm.

Commentary The principle feature demonstrated by these figures is the overall smallness of the industry. That so much of the blade production rubbish was broken (40%), is taken as an indication that it was often utilised. When the various forms tabulated above were expressed as an histogram plot on a transect diagram no form seemed to be concentrated in any one area.

3. (i) *Blades* (Fig. 5, 6)

One hundred and twenty complete blades were recorded and are classified in Table 4. Whereas B (i) blades in this scheme are

TABLE 3.

	Maximum dimension	Number	(as %)
(a) Unbroken	>71 mm	2	(0·7)
	70–51 mm	20	(6·5)
	50–31 mm	155	(50·2)
	31–21 mm	132	(42·7)
	total all sizes	309	(100·1)
(b) Broken	total	240	
(c) As above, not differentiated	total	222	
Total of all pieces		771	

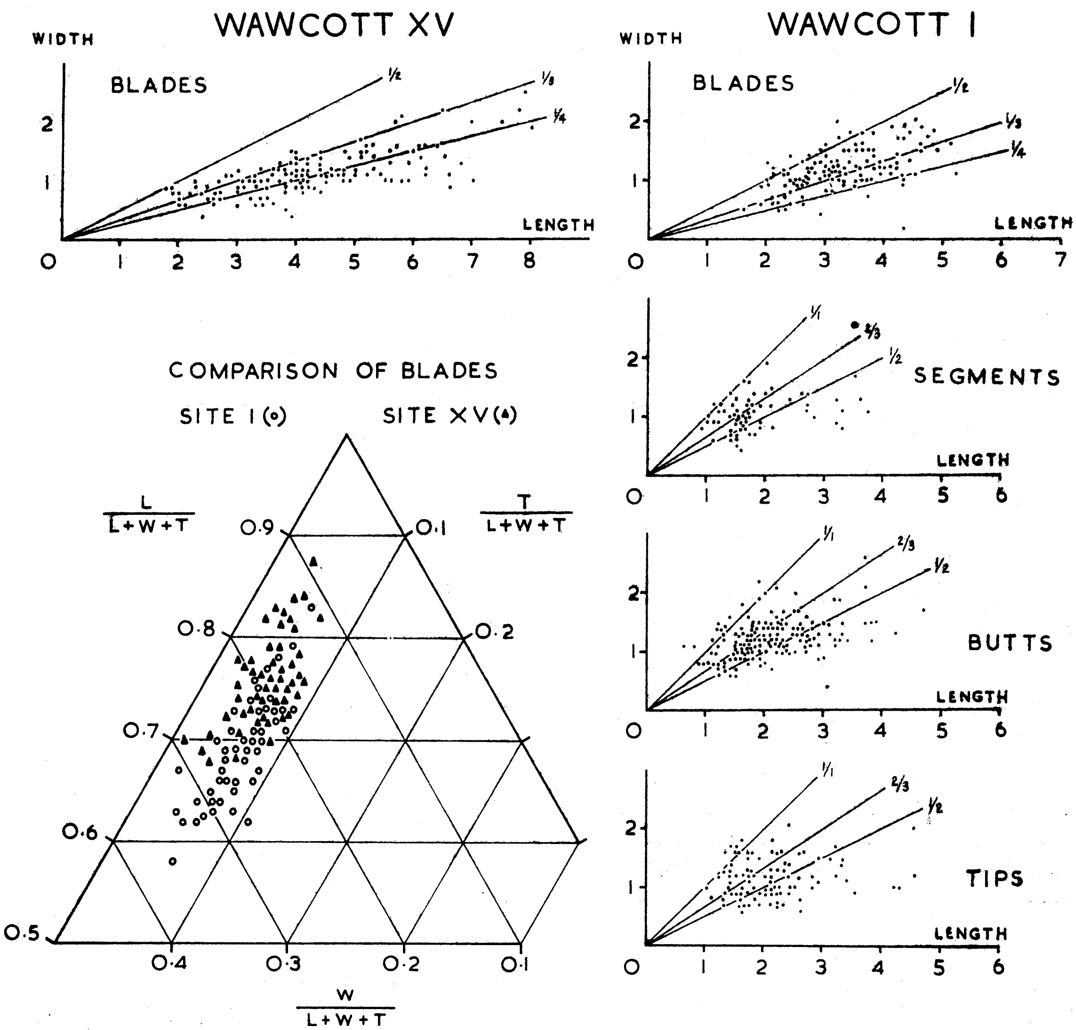


Fig. 6. Dispersion diagrams, blades and derivatives. Note that the axes of the two dimensional diagrams are marked in centimetres.

elliptical or pointed, B (iv) types are much broader and blunted in outline.

Commentary Dispersion diagrams, not reproduced, indicate that both the size limits and the ratio of length to width do not vary significantly from one group to another. The blades may therefore be summarised as one unit. This has been done in two ways. Firstly a simple length against width dispersion diagram demonstrates both aspect and absolute size range. Secondly a triangular dispersion diagram has been prepared in order simultaneously to portray the relative proportions of length, width and thickness. The method is set out on p. 21. In both cases similar diagrams for blades from a probable maglemosian site are given for comparison. It is observed

TABLE 4.

		Number	(as %)
Class A			
Blades parallel sides for at least second and third quarters of length:			
A (i) blunt ended Fig. 5	No. 15–17	42	(35)
A (ii) point ended	No. 18–19	15	(13)
Class B			
Blades not parallel sided as above:			
B (i) maximum width in second-third quarter	No. 20	5	(4)
B (ii) maximum width in first quarter	No. 21–22	15	(13)
B (iii) bulbar half essentially parallel sided, remainder pointed	No. 23–24	13	(11)
B (iv) broadly oval shape	No. 25–26	11	(9)
Unclassified		19	(16)
Total		120	(101)

that the maglemosian blades are longer both absolutely and relatively; approximately one-third of these exceed 5 cm in length while in a sample of 100 from this industry this figure is less than two. Using the triangular co-ordinates it is possible to obtain the following:

length:width:thickness= 10·5:3·9:1·0 Wawcott I

length:width:thickness= 15·4:3·6:1·0 Wawcott XV.

(Thickness is used as an arbitary reference here).

A further difference is that significant traces of the striking platform are much more commonly observed in the case of the blades from Wawcott I than in the case of the blades from Wawcott XV. (The actual figures being 38% and 23% respectively; there are also qualitative differences in the amount of platform present, much more on average with the Wawcott I blades).

(Due to development of the technique (1972), the blades from Wawcott I have been re-measured and recalculated. The definitive values may now be quoted as: length function, mean value 0·702 S.D. 0·044; width function, mean value 0·240 S.D. 0·041.)

S.D.=standard deviation.

3. (ii) *Blade fragments* (Fig. 6)

Blade fragments numbering 344 appear in this group and are classified in Table 5.

Commentary The blade segments appear to be deliberate products and in some cases there are clear signs that they were snapped by a blow directed at the dorsal face of the blade.

TABLE 5.

Type	*Number*	*Comments*
Blade segments, i.e. blades from which both bulb and tip end have been clean/squarely detached	65	See Fig. 6 for size range
Butt fragments of blades—largely detached by clean square fracture	154	Of these 63 exhibit a width/length >0·66, i.e. represent <½ average blade
Tip fragments of blades—ditto	92	Of these 30 exhibit a width/length >0·66, i.e. represent <½ average blade
Miscellaneous fragments, not classified above, often the remains of calcined blades	33	
Total of all blade fragments	344	

It seems reasonable to suppose that at least some were mounted in groups in a composite tool in order to produce a lengthy cutting edge. It is also possible that they represent blanks for future microlith production. Certainly they often fall into the correct size range.

The butt and tip fragments may be further divided by reference to the length-width dispersion of blades when it appears that the typical blade is about three times as long as it is wide; if the fragment is to represent less than half the average blade, its width must be more than two-thirds of its length. If a line is drawn on the appropriate dispersion diagram of gradient 0·66 it automatically divides the points into the two groups which may then be counted. It may be argued that the detachment of less than half the blade leaves a usable residue. An alternative procedure might be to use two dividing lines which would split the blade fragments into three groups representing less than one-third, less than two-thirds and more than two-thirds of the blade respectively.

As so often in the Kennet Valley the number of butt fragments is larger than the number of tip fragments, which in turn is larger than the number of true blade segments. If the rarity of blade segments is real rather than apparent, it could be explained by their removal as part of some tool or weapon head. However, blade segmentation, as defined by the writer, requires the production of equal numbers of blade segments, butt and tip fragments and so there remains the excessive number of butt fragments to be explained. It is possible that some butts were detached during microlith production particularly since microburins are usually outnumbered by microliths. This imbalance is the more striking if microliths were weapon tips, the majority of which might be lost in the chase away from the site. If so those found there might represent a small fraction of the total manufactured.

4. *Microliths and associated forms* (Fig. 7)

One-hundred and twelve items fall within this group. Details are in Table 6.

TABLE 6.

(i)	Microliths, complete	Class A:2	
		B:2	
		C:1	
		D:20	
		rod:3	
		Total	=28
(ii)	Microliths, major fragments, apparently all Class D		=11
(iii)	Microliths, minor/unidentifiable fragments		=8
	Total number of microliths represented		=47
(iv)	Unfinished microliths		=4
(v)	'Microburin failures'		=16
(vi)	Microlith production debris		=15
(vii)	Microburins		=30
	Total of microliths and associated forms		=112

Commentary Each of the seven classes separated above requires some explanation.

(i) The complete microliths may be divided into minor, non geometric, group and the major, geometric, group. The classification devised by Professor J. G. D. Clark (1934 and 1939) will be used.

Two microliths may be classed as obliquely blunted points, both of type A 1a. Two more examples have blunting along the whole or nearly the whole of one edge and are assigned to class B 1. However, these four microliths do not closely resemble those examples which characterise the typical maglemosian, for example those figured in the Thatcham reports, (Wymer 1962). By contrast two neighbouring sites, Wawcott III (SU 400679) and Wawcott XV (SU 417672) have produced simple elegant and much larger examples of class A microliths, which do seem to be typically maglemosian. A single example of a class C microlith is also present. Three rod microliths complete the non geometric group, all eight of which have been drawn.

Twenty complete microliths belong to class D, an unusually large geometric complement. What is even more remarkable is that they are all quadrangular. This homogeneity is

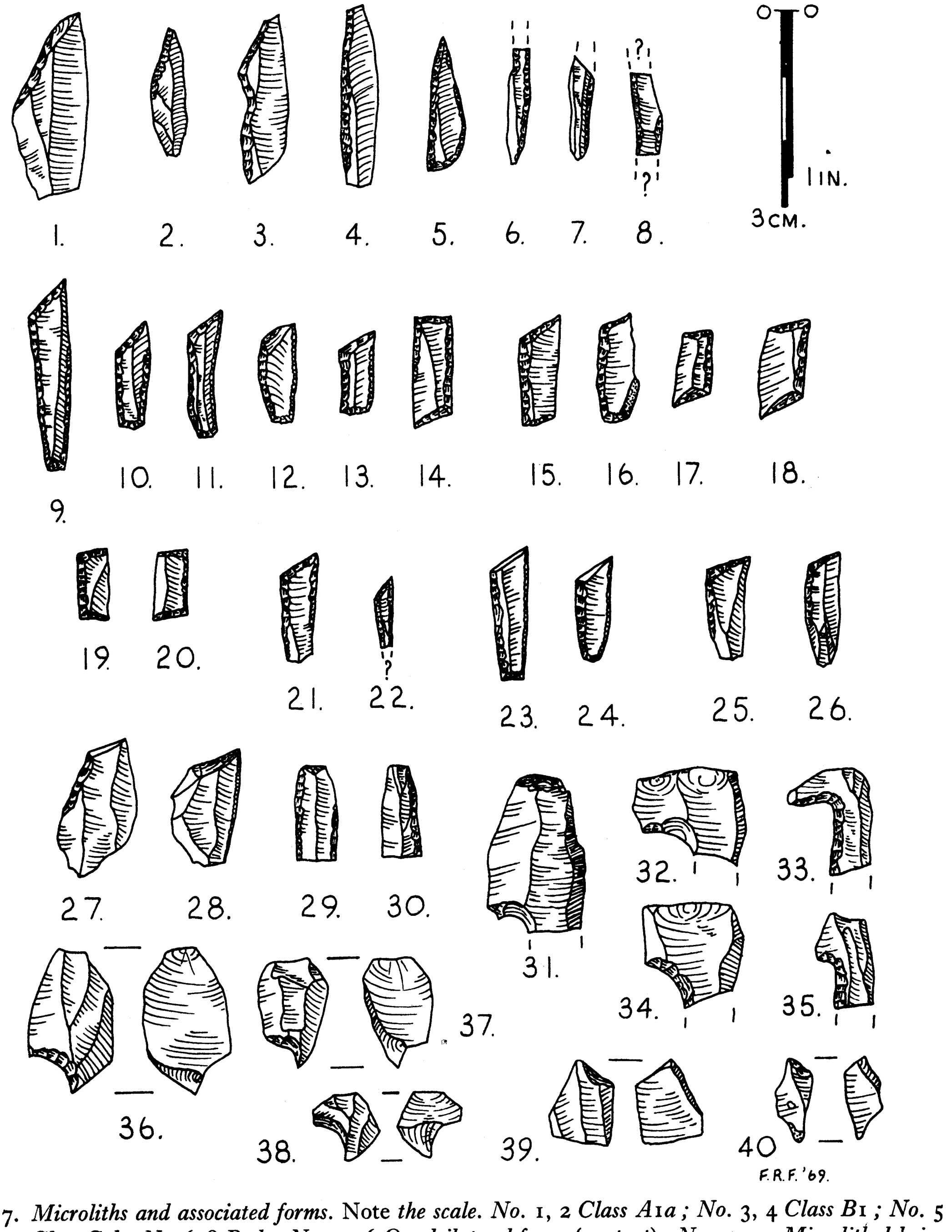


Fig. 7. Microliths and associated forms. Note *the scale. No.* 1, 2 *Class A1a ; No.* 3, 4 *Class B1 ; No.* 5 *Class C1b ; No.* 6–8 *Rods ; No.* 9–26 *Quadrilateral forms (see text) ; No.* 27–30 *Microlith debris ; No.* 31–35 *'Microburin failures' (see text) ; No.* 36–38 *Bulb-microburins ; No.* 39, 40 *Tip microburins.*

further enhanced by their size range, with nineteen between 1 and 2 cm in length. Of these, sixteen are between 0·50 and 0·55 cm in width.[2] They may be divided into the following groups:

(a) all four sides blunted (seven examples); (Fig. 7, No. 9–14).
(b) one side and both ends blunted (six examples); two of these closely approximate to rectangles; (Fig. 7, No. 15–18 and 19–20).
(c) both sides and the oblique end blunted (two examples; Fig. 7, No. 21–22). No. 22 closely parallels a microlith of the local late maglemosian in the middle level of the stratified sequence at Wawcott III, which itself begins with typical maglemosian.
(d) both sides and the distal end blunted (two examples); this group is almost certainly an extension of group (a) where it was unnecessary to blunt after parting the microlith from the blade residue. (No. 23–24).
(e) one side and the oblique end blunted (two examples; No. 25–26).

All examples in Fig. 7 have been drawn bulb end towards the top of the page. There are in fact three microliths where the narrow or 'square' end has been made on the bulbar end of the blade.[3] Two are illustrated (No. 17–18). In general the oblique end or point is usually formed on the bulbar end of the blade. No advantage is gained since such short lengths of blades are usually of constant thickness[4] but the bulbar end of a blade is of course the thickest and strongest part. Some of the geometric microliths show clear evidence of microburin technique.

(ii) There are eleven major fragments of microliths all clearly geometric forms or of class D. They do not suggest the existence of any form not already discussed.

(iii) Eight unidentifiable microlith fragments are present in the assemblage, four butts and four mid sections. The absence of tip fragments is noteworthy, again emphasising the scarcity of classes A and B. In most cases where obliquely blunted points are present in quantity the broken tips are commonly found.

(iv) Unfinished forms are discussed with the remaining classes below.

(v) The manufacture of a microlith is achieved most easily by rasping away one or more edges of a blade, using a suitably strong edged tool applied roughly at right angles to the underside of the blade. It is only necessary to detach individual spalls when the blade is thick and a fair amount of pressure must be applied. When the process of shaping is advanced, especially with thick blades, there is a danger of the part-finished microlith snapping off the blade residue. This bulbar blade fragment will frequently be identical to a microburin failure (Fig. 7, No. 31–35) and yet there remains the possibility that such artifacts were occasionally deliberately produced; the other fragment, the unfinished microlith, has not been found and presumably was completed. Consequently there are three possible origins for this artifact: accidental breakage, deliberate breakage, or microburin failure. In the assemblage there are sixteen examples, eleven of which differ from microburins only by the absence of a true curving microburin scar. Of the sixteen all but one correspond to microliths blunted on the left hand side.

(vi) Nineteen pieces have been identified as the debris of microlith manufacture; they appear to be unsuccessful or otherwise discarded work.

(vii) Thirty pieces are clearly the product of a true microburin technique and retain *traces of both a notch, and a curving scar*. Although there are varying opinions about the method of production (Leakey 1951; Lacaille 1942), the writer has managed to twist off typical microburins from blades when the latter were firmly wedged into splits in two pieces of wood holding one piece of wood in each hand. Blades are too small and sharp to be held directly in the fingers, but when each end of the blade is firmly held this way considerable torsion can be applied.

Twenty-three of the microburins represent the detached bulb ends of blades, all from microliths blunted on the left hand side (Fig. 7, No. 36–38). Two microburins represent the detached tips of blades (No. 39–40). The remaining five pieces are fragments of blades, one of which is double ended.

The quantity of items in groups (iv) to (vii) clearly suggests frequent microlith production on this site.

5. *Finished and utilised forms* (Fig. 8 and 9)

This class embraces the following 74 items which appear in Table 7.

TABLE 7.

Axes	
core (two unfinished)	4
flake	2
sharpening flakes	2
Scrapers	4
Gravers	4
graver spalls	4
Saw	1
Choppers	2
Flint working tools	6
Backed blade	1
Utilised flakes-blades	
group (i)	9
group (ii)[5]	35
Total	74

Commentary The tool element is not well represented, although surface finds indicate that the scarcity may be more apparent than real. Details are as follows:

Axes (Fig. 8) The three core axes recovered from the mesolithic levels are marked by their smallness and crudeness, and two are probably unfinished (No. 5). A fourth core axe was found in the primary silt of the Roman ditch. This example is small and finely worked and lacks an obvious tranchet blow at the blade end. (No. 2). The apparent butt is heavily bruised perhaps from vibration within an antler sleeve. Another slight possibility is that this implement is a blade presser (Semenov 1957). Surface collection has produced two large flint tranchet axes in addition to the chert specimen already mentioned. Two flake axes were found, one complete and the other lacking the butt end (No. 3–4). The smaller, complete, specimen has a tranchet flake detached while the larger example has an edge produced by careful dressing in which the plane surface of the original flake acted as the tranchet blow so that this tool closely resembles a giant end scraper. Two axe sharpening flakes were also found.

Scrapers (Fig. 9, No. 2–4). Few scrapers were found. Of the two end scrapers one used a thick secondary flake and the other a thermal flake. There is one relatively well made side scraper on a secondary flake while a fourth scraper is represented by a small calcined fragment. These do not compare with the end scrapers which typify the Thatcham, or Wawcott maglemosian sites.

Gravers Gravers are also rare. There are two gravers in which the cutting edge has been produced by the intersection of two sets of burin facets (Fig. 9, No. 5, 6) while the other two gravers are made on coarse blade like flakes and exhibit some battering resulting from use. Of three gravers found on the surface, one is figured here (Fig. 9, No. 7) while another was published elsewhere (Froom 1963, p. 83). Four possible graver spalls have been identified, none of which show evidence for the removal of previous spalls.

Saw A single saw is present, made on a rather coarse blade (Fig. 9, No. 10).

Choppers Two implements best described as choppers are recorded. These are very similar to each other but were found widely separated. They have been made from fairly small flattish nodules by bifacial flaking along one side. A useful cutting edge has been produced while the unflaked portion fits comfortably into the hand.

Flint working tools (Fig. 9, No. 8, 9). Six flint working tools have been identified including three hammer stones, one of the latter made from a thick retouched secondary flake.

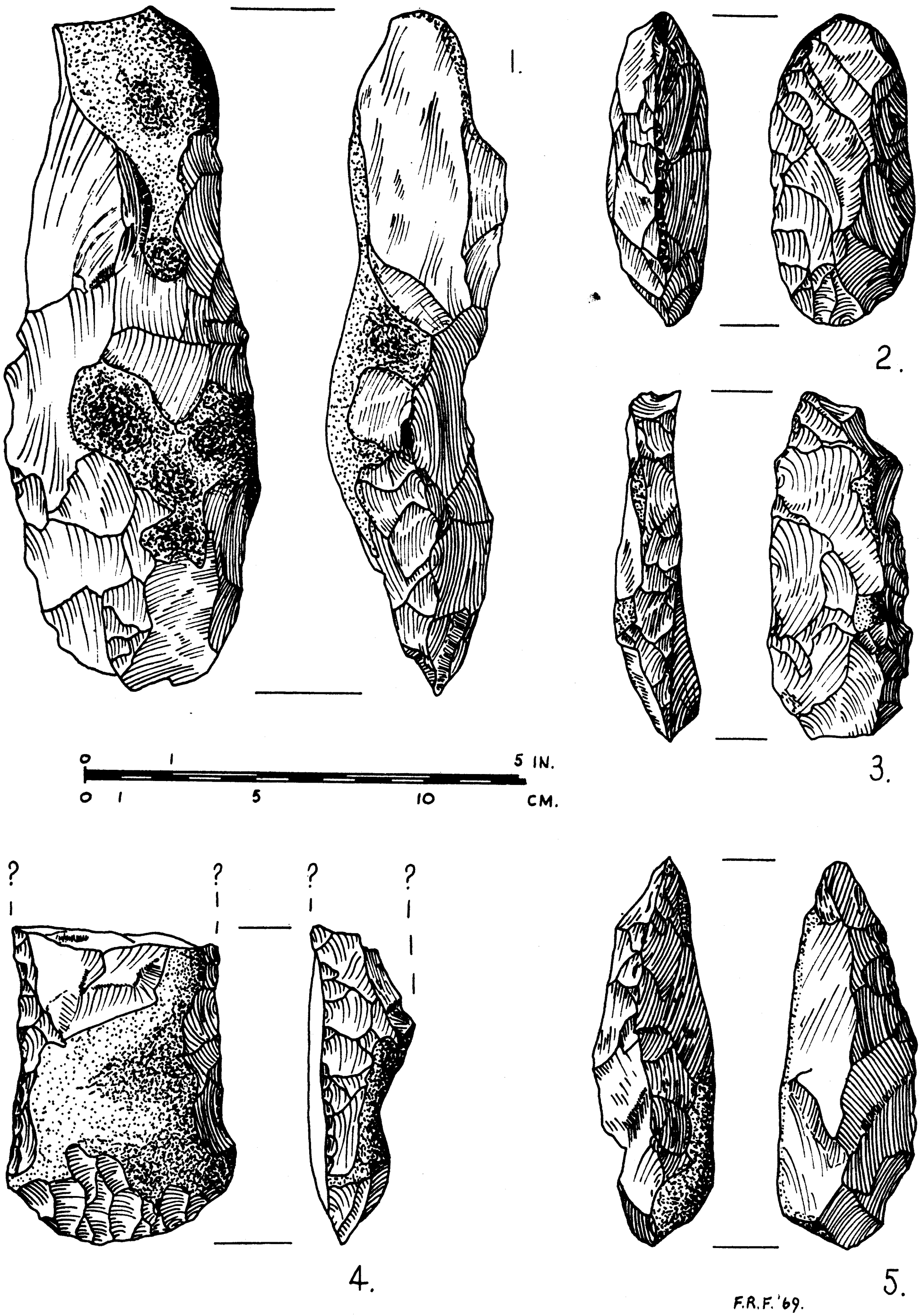


Fig. 8. *Axes. No.* 1 *Found in the top soil during* 1966 *excavation ; No.* 2 *Small axe from the primary silt of ditch ; No.* 3 *Small flake axe from main mesolithic layer ; No.* 4 *Larger flake axe* (?), *from mesolithic layer ; No.* 5 *Crude pick or unfinished axe, also from mesolithic layer.* (*If pick, conceivably figured upside down !*)

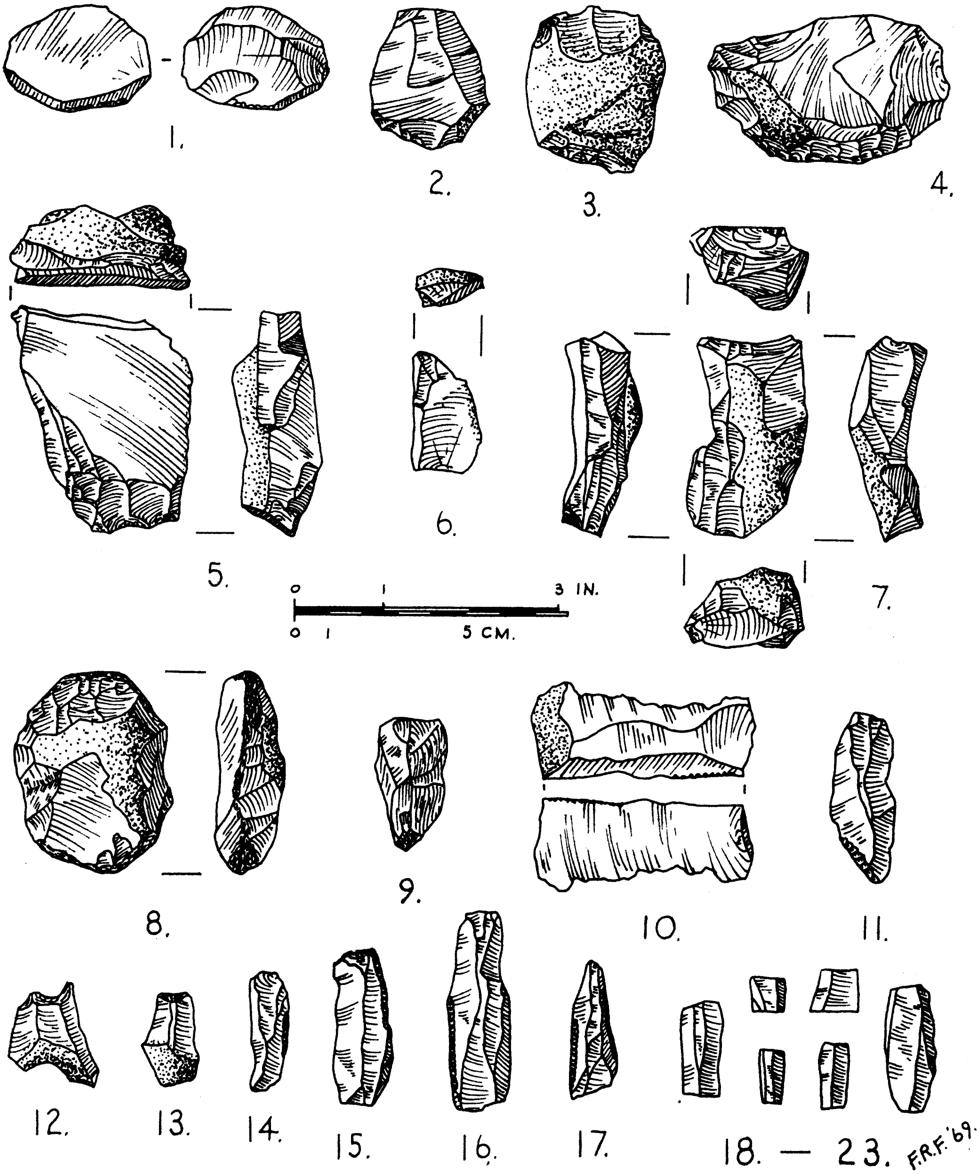


Fig. 9. *Tools. No.* 1 *Axe sharpening flake ; No.* 2–4 *Scrapers ; No.* 5, 6 *Gravers, main excavation ; No.* 7 *Graver, surface find prior to excavation ; No.* 8, 9 *Flint working tools ; No.* 10 *Crude saw ; No.* 11 *Retouched blade ; No.* 12, 13 *Utilised pieces ; No.* 14–17 *Pieces showing pseudo microlithic blunting ; No.* 18–23 *Blade segments.*

This may have served partly or entirely as a blunt-ended punch. Another thick secondary flake had been heavily dressed along three sides and these edges are also heavily bruised suggesting that the tool was a fabricator for moderately heavy work. The remaining two items are flint punches, both exhibiting much battering at both ends.

Utilised (Fig. 9, No. 12–17). The largest group is of utilised flakes and blades. In this assemblage two distinct sections may be distinguished. First are a miscellaneous collection in which there are four crude flakes of varying size and character which appear to have been used for scraping. Five pieces of blade production rubbish also exhibit varying retouch and trimming, of which two may well have been concave scrapers used for paring down shafts and points. Finally one blade has been retouched along the distal part of one side and would serve admirably as a knife (No. 11). The second group contains thirty-five pieces, one primary flake, nine pieces of blade production rubbish and twenty-five blades. All of these exhibit pseudo-microlithic blunting along one or both edges.[5] It is not clear whether this blunting is deliberate trimming or results from use. Eleven of the blades are incomplete and may have broken in use. The complete examples all range in size from 35 to 70 mm. It will be seen that the distribution of this group within the excavated area is far from random.

DISTRIBUTION DIAGRAMS

Reference has already been made to the distribution of the various forms of unspecialised waste. For strict comparability these distribution diagrams do not include all the artifacts recovered from the pit fill, but only those from the first eight inches. Although distribution plots have been drawn for all implement types and cores no overall trends were apparent, and they are not reproduced. This result was not unexpected in view of their small number. However the density plot of the microlith and blade elements is drawn (Fig. 10). This suggests the following conclusions:

(1) Whereas complete microliths are scattered more or less at random, the products of microlith manufacture are relatively concentrated in transects K–L/26–27. This area is also notable for the large number of blade fragments, although tips are relatively scarce.[6] This suggests a partial correlation between blade segmentation and microlith manufacture, that is to say that blade segments were retouched into microliths, particularly those of geometric type.

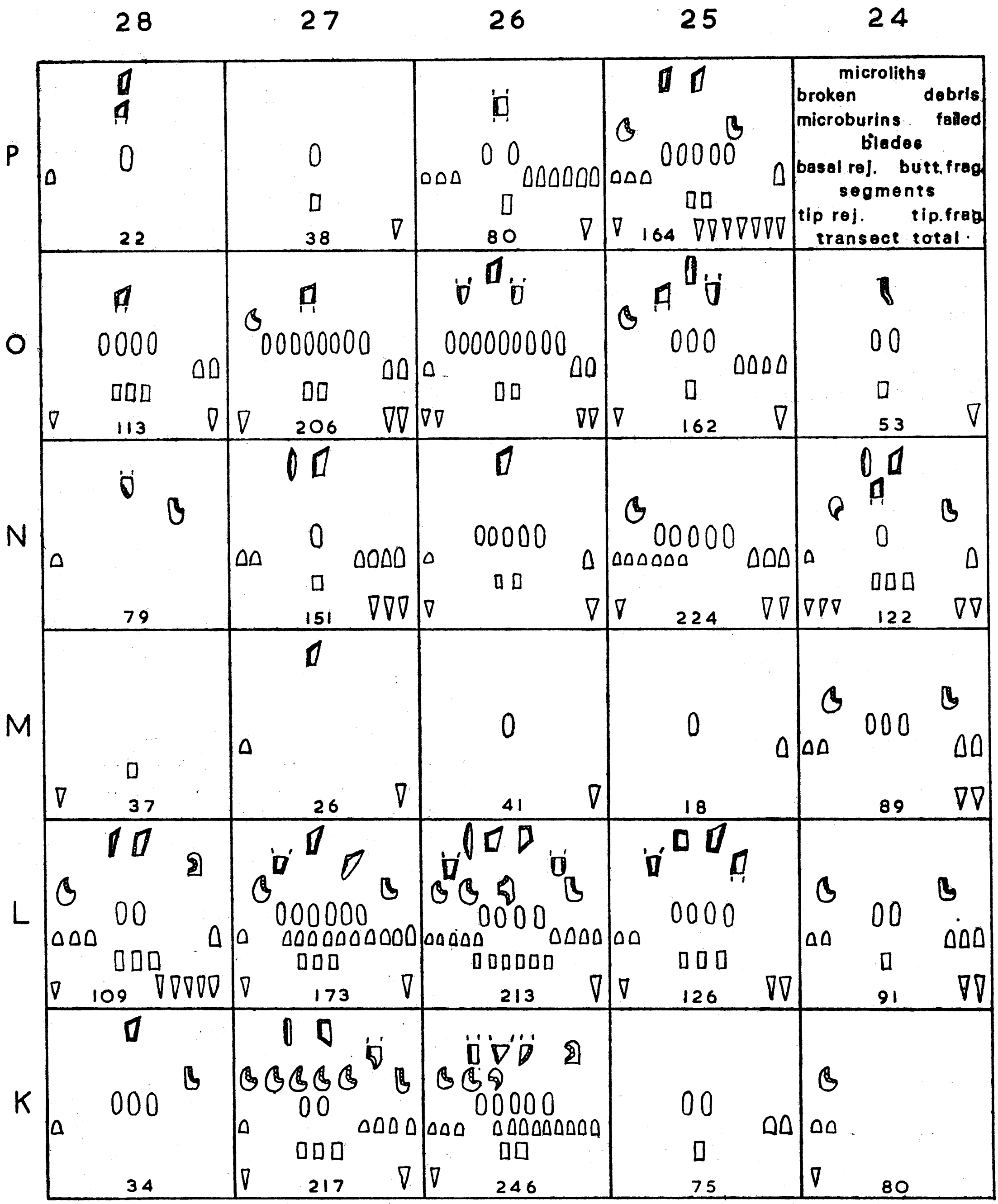
(2) Blade segmentation is also notable in transects N24, 25 and P25, 26 but here tip fragments are much more common and there is no concentration of the microlith element.

(3) Whole blades are not scattered entirely at random but frequently occur in groups of four to six.

(4) The distribution of the thirty-five utilised flakes and blades displaying pseudo-microlithic blunting is once again non random. Details are as follows:

No. of examples	*No. of transects*
0	20
1	4; (L24, 25; O24; P25)
2	2; (K24, 25)
3	2; (N25; O27)
7	1; (K27)

Fig. 10 (*opposite*). *Distribution diagram for undisturbed mesolithic layer*, not *including true pit fill. Top row : complete microliths ; 2nd row : L.H.S. broken microliths ; R.H.S. microlith debris ; 3rd row : L.H.S. microburins ; R.H.S. 'microburin failures' ; 4th row : complete blades ; 5th tow : blade derivitives* (1) *L.H.S. basal rejects, R.H.S. butt fragments ; 6th row : blade derivitives* (2) *blade segments ; 7th row : blade derivitives* (3) *L.H.S. tip rejects, R.H.S. tip fragments ; 8th row : total of all pieces of worked flint for that transect* (*no total for N-O* 26 *since they were excavated as a single unit, see text*).


28
27
26
25
24
P
O
N
M
L
K
microliths
broken debris
microburins failed
blades
basal rej. butt.frag.
segments
tip rej. tip.frag.
transect total
22
38
80
164
113
206
162
53
79
151
224
122
37
26
41
18
89
109
173
213
126
91
34
217
246
75
80

THE DENSITY PROFILE AND FREQUENCY OF OCCUPATION

The basis of this discussion has already been outlined (p. 32). One obvious difficulty in this test is the fact that the pit did not silt up by the addition of perfectly horizontal layers, while artifacts might arrive in the pit as part of the silt, even when the site was unoccupied. At the same time the collapse of the gravel superstructure resulted in the addition of a large quantity of sterile material. Consequently only half of the expected number of artifacts was eventually recovered, the fifteen two inch spits producing about nine hundred pieces of worked flint instead of the hoped-for two thousand. The density per two inch level is shown in Fig. 11. This suggests, not entirely convincingly, four or five occupations while the structure was silting up and in decay.[7] The relative scarcity of artifacts sealed by the gravel spoil suggests that the structure dates to an early occupation of the site, possibly even the first. The hearth is broadly in the depth range of ten to sixteen inches, which corresponds to the third occupation.

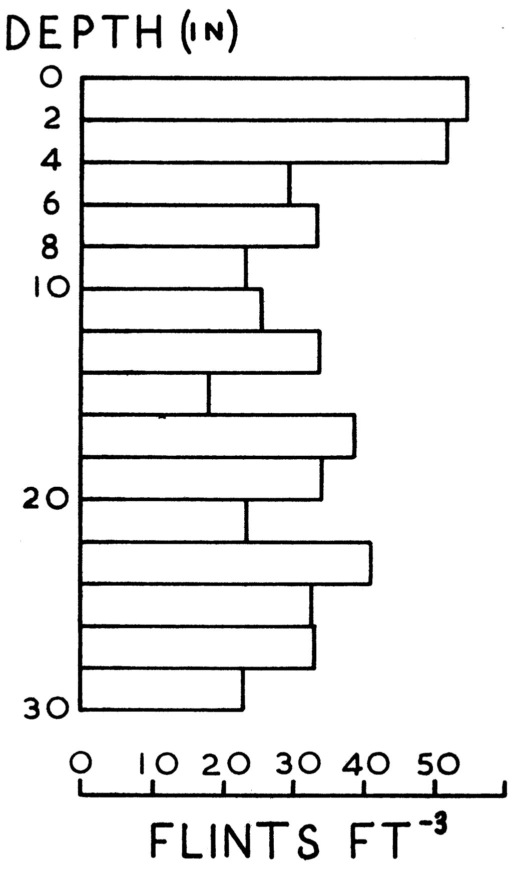


Fig. 11. *Density profile.*

ABSOLUTE DATE

As noted above a sample of charred wood was found at the base of the hearth. This was submitted to the British Museum Research Laboratory and gave the following radiocarbon date: 5260±130 B.P., or 3310±130 B.C. (BM–449).

This is a date for the hearth and therefore post-dates the pit and its associated features. However, despite careful analyses of separate samples of flints from the pit fill and from the overlying sand, only a single homogenous flint industry was identified. At the same time this charred wood pre-dates the final occupation of the site. Finally it may be pointed out that the total duration of mesolithic occupation of this site is likely to be of the same order, or more probably less than, the statistical error associated with this radiocarbon date at one standard deviation. This date may, therefore, be regarded as one for the site as a whole and not for any particular aspect.

CONCLUSIONS

It would appear that a group of mesolithic people arrived at the site to find a low gravel spur, in part at least covered by sand. Some form of substantial structure was built on or near the crest of the ridge. The origin of these people can only be guessed but the axe of Dorset chert may be as significant as the apparent absence of chalk outcrop flint. The site was probably reoccupied several times after the desertion and decay of the structure.[8] There is no evidence to suggest maglemosian affinities for this group. The restricted tool element and the apparently specialised microlith component could suggest that the site had been occupied for a particular activity although the building of a large structure could imply lengthy periods of occupation. In this context it should be borne in mind that the River Kennet is still a very fertile chalk stream river, capable of supporting very large populations of fish and wild fowl. Thames salmon would have run up the Kennet and the shallow stretches existing around Kintbury would offer perfectly satisfactory spawning grounds.[9] It is even possible that such a group may have led a semi-permanent way of life with an economy based on fish and wild fowl. In this the quadrangular microliths could have been used as harpoon barbs.

APPENDIX I

SOIL SAMPLES

Four soil samples, two from the pit fill and two from the ditch fill, were submitted to Dr I. W. Cornwall, of the University of London, Institute of Archaeology. The following extracts are drawn from his report, for which the writer is very grateful.

"The mineral fraction is essentially the same in all four samples: a medium sandy flood-loam with a fair proportion of clay. The coarser sand-grains are exclusively quartz, mostly well rounded and some of them matt-surfaced. These are probably wind-formed in periglacial conditions during the last and preceding glaciations and are derived in their present position. Some are water-lustred and all are *in situ* since their last transport."

Both samples from the ditch fill ". . . are brown loams. Both contain much humus." That from the upper part of the ditch fill, ". . . has numerous burnt clay crumbs, crackled flint chips and fire reddened quartz and flint grains, but no charcoal was seen. This suggests that it is a natural fill containing a proportion of drifted burnt material. This does not necessarily mean an occupation-site nearby, but is probably due to human activity e.g. slash-and-burn clearing for agriculture". The second sample, from the lower part of the ditch fill, is not significantly different.

Sample 3, from the mesolithic pit ". . . is a very clean yellow medium sandy loam, locally patched, rather than veined, with limonite. It contains very little organic matter, but nevertheless reduces acid permanganate, so is probably not fully oxidised. It seems to contain little or no foreign matter."

The other sample from the mesolithic pit ". . . contains more humus than No. 3 and slightly more iron, but in any case not much." "The sample contains small crumbs of burnt clay and tiny fragments of charcoal throughout—evidence of hearths nearby."

"The clean sandy material was evidently deposited, probably directly in flood-time from the river, before the digging of the ditch, whatever its date. The ditch must, thus, be later than the mesolithic pit, but *how much* later does not appear. The brown loamy fill looks like surface-soil of the floodplain gradually washed, blown and perhaps spread by agricultural operations from the immediate surroundings, not by the flooding river. The large amount of humus in it suggests a vegetation-cover during the whole of its formation."

APPENDIX II

GLOSSARY OF TERMS USED

Bashed Lump: a piece of humanly worked flint, with a maximum dimension greater than 20 mm, which cannot be further identified. This includes shattered and rejected pieces, but excludes flakes.

Primary Flake: an undifferentiated flake whose upper surface is at least a quarter cortex or original nodular surface.

Secondary Flake: as 'primary flake' but the upper surface has less than one quarter cortex or original nodular surface.

Blade Production Rubbish: flakes which represent the final trimming of a core prior to blade production, and further trimming and reshaping during this process including blade failures and blades which run out short, narrow or thick, etc. Any piece directly referable to blade production.

Spalls: undifferentiated pieces whose maximum dimension is less than 20 mm.

Blade Core: a core from which at least three blades were struck.

Working Face: that part of the core from which blades were detached.

Conical Core (e.g. Fig. 6–1): single platform, struck for blades around at least 70% of its circumference and in one direction.

Sub Conical Core: as above but struck for less than 70% of the circumference.

Two Platform Typical (e.g. Fig. 6–5): Two platforms inclined to each other and joined by a single working face, the latter struck in both directions (antiparallel).

Paraboloid (e.g. Fig. 6–8): a single plane striking platform somewhat elliptical in plan, serving two working faces which intersect giving the core an approximate parabola outline in elevation. The intersection of the working faces gives rise to a linear striking platform; consequently both working faces are struck in two directions, antiparallel when fully developed. Its general symmetry is not unlike a tea-cosy!

Blade: a flake of regular outline, normally with two or more arrises on the dorsal surface and little or no cortex (none along either edge). The width does not exceed half the length and the thickness should be less than half the width.

Blade Segment: blade from which both the bulb and tip have been removed by clean square fractures.

X>Y: x greater than y.

X<Y: x less than y.

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FOOTNOTES

[1] The colour is probably due to iron compounds existing in a reduced (ferrous) state.

[2] The actual limits are 0·27 and 0·65 cm.

[3] Two examples are of type (b) and one of type (a).

[4] This might not apply to obliquely blunted points.

[5] Microlithic blunting is usually steeper.

[6] This thinner part of the blade is easily worked away with a fabricator and need not be detached as such.

[7] Or possibly six levels since the upper silts will accumulate more slowly as the surface stabilises. The top few inches do have much the highest artifact density.

[8] Naturally it is always conceivable that the site was continuously occupied and that the density profile only reflects local variations in the intensity of occupation on one part of the site.

[9] After the Second World War when the rivers were not maintained the keeper of a two mile stretch at Kintbury, Mr James Brown, for several years killed many hundredweight of pike in the spring and the writer can still take 30 lb in three hours angling.

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It is a pleasure to record here the kindness and cooperation extended to the writer by Mr C. Moore, the farmer in whose field the site is situated; Mr F. Howes the resident agent and Mr C. R. Sutton the resident director of Sir William Suttons' Settled Estate.

Finally tribute must be paid to the author's wife who has put up with and sustained a husband who spent the weeks teaching chemistry, the weekends excavating or otherwise working in the field, the holidays sorting and recording flints and who finally kept the children away from him enough to allow the compilation of this report.

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