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THE EXCAVATION OF A NEOLITHIC SITE AT CANNON HILL, MAIDENHEAD, BERKSHIRE, 1974–75

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With a contribution by M. L. Shackley

INTRODUCTION

The site, Cannon Hill (SU 89647926) in the parish of Bray, lies on the south-east bank of a tributary of the Thames, 0·75 kilometres from its original junction with the river (Fig. 1). Cannon Hill rises above the Thames floodplain and is composed of a cap of gravel at 93 ft (30 m) OD on the Taplow Terrace which stretches eastwards toward Windsor. On the north-east side of the hill is a scarp which drops down to the floodplain.

In 1973 planning permission was granted for the development of the Cannon Hill Estate. In the following year a large house of c. 1750, situated close to the highest point on the hill, was demolished. During removal of the cellar walls a partly destroyed Neolithic shaft (Pit 1) was discovered by a member of the Maidenhead Archaeological and Historical Society (MAHS). This shaft was excavated by the MAHS under the direction of Mr Weng. In 1975 the site came to the notice of the Berkshire Archaeological Unit who, with the co-operation of the MAHS, invited Mr Startin to undertake excavation of the area threatened.

The description of the excavations has been written by Mr Startin, incorporating a full report by Mr Weng on the excavation of Pit 1. Mr Weng and Mr Over undertook a preliminary study of the finds and the flint report is by Messrs Bradley and Weng and the pottery report by Mr Bradley with Mr Over. A fuller analysis of the flints by Mr Weng will be deposited with the finds. The concluding discussion is by Mr Bradley and incorporates the results of sediment analysis by Dr M. L. Shackley. Plans and sections were drawn by Mr D. Batchelor, Mr Startin, Mrs J. Startin and Mr Weng. The pottery was drawn by Mr Batchelor and the flints by Mr M. J. Rouillard. Mr Batchelor also supervised on site, while the bulk of the labour force was provided by the MAHS. Special thanks must go to Royco Ltd for willingly granting permission for the excavation and for their assistance throughout.

THE SITE

The area had been heavily landscaped for gardens during the occupation of the eighteenth century house; in consequence, the overburden, including much demolition debris, was removed by machine, (a Drott removing most of the material and a JCB tidying up). Initially, trial areas were cleared in order to assess the possible importance of the site; these revealed three potential Neolithic shafts. On the comparable site of Eaton Heath (Wainwright, 1973) smaller features had been found associated with similar shafts and such features, if present at Cannon Hill, would have been particularly vulnerable during development. For this reason it was decided that a larger area (Fig. 2) (c. 1,100 sq m) should be cleared and excavated. The excavations took place in September 1975 and were funded by the Department of the Environment through the Berkshire Archaeological Unit.

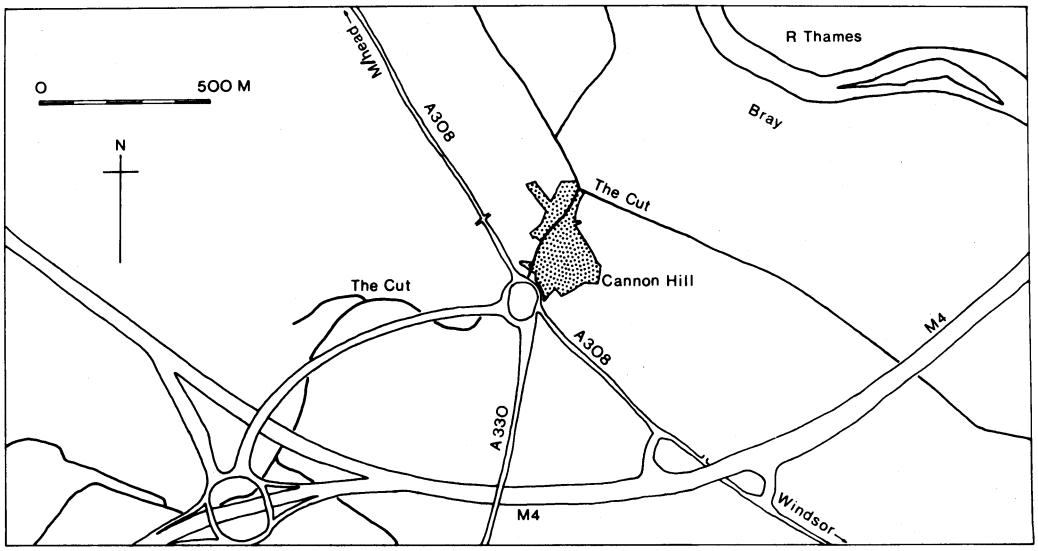

Fig. 1. The location of Cannon Hill.

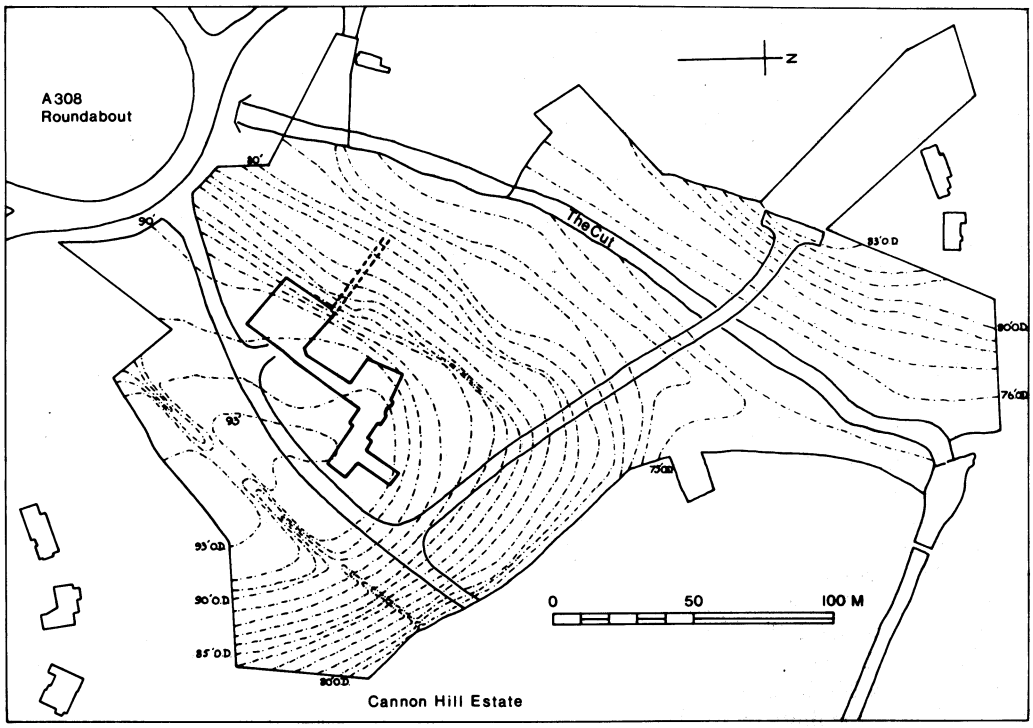

Fig. 2. Trench location plan.

THE EXCAVATIONS

The majority of the features uncovered were the result of gardening activities associated with the eighteenth century house. These are shown on plan (Fig. 3) but have been left largely unlabelled. Two of the potential Neolithic shafts (Features 1 and 2) proved to be other garden features, possibly associated with shrub planting. There was no way to determine this without excavation since Neolithic pits also included bricks in their highest levels. Similarly some of the recent features contained residual flints.

Two Neolithic shafts (Features 4 and 25) and one shallower Neolithic pit (Feature 8) were eventually excavated in addition to the work of the MAHS on Pit 1 and another small feature nearby (Pit 2). No other features could be dated to the Neolithic period and most were definitely later, although the gully (Feature 24) can perhaps be paralleled in Neolithic contexts. One feature (F. 23) produced a fragment of possibly Iron Age pottery and some of the other features in this area of the site (e.g. features 10, 11, 15, 18, 22 and 23) *might* belong to this period.

Pit 1 (Fig. 4)

The remaining portion of the pit suggested that it was originally oval or circular. The sides were heavily eroded. The maximum dimension at the top was c. 3·5 m. It was excavated to a depth of c. 3·4 m below undisturbed gravel; further excavation was considered to be too dangerous without complex shoring. A 1 in. auger encountered gravel at a depth of over 4·0 m, but it was not clear whether this was the base of the pit or a gravel pocket.

Layers 1–3: These layers represent horizontal spits removed at arbitrary depths. They consisted of light brown sandy soil with a scatter of stones, knapped flint (Table 1), and charcoal flecks. Sherds of Fengate ware (Fig. 6:10) were excavated from well within this material.

Layer 4: Black layer containing charcoal, potsherds (Fig. 6:1–9), knapped flints (Table 1), a few small bone fragments, and some unfired clay. Material from this layer gave a carbon date of 3320±110 bc (HAR 1198). The presence of Mesolithic material may imply a residual element and this date *could* be too old (cf. p. 15 below).

Layers 5 & 6: Layer 5 was taken as the top 25 cm of layer 6. This consisted of similar material to layers 1–3 and contained knapped flint (Table 1).

Layer 6a: Gravel layer with some soil admixture.

Layer 7: Similar material to layer 6. This layer included charcoal flecks throughout and contained knapped flint (Table 1).

Layer 8: Material excavated during augering (Table 1).

Interpretation: Apart from the burnt layer (Layer 4), the pit seems to have filled largely as the result of natural agencies. Material within the pit must be derived mostly from surface material on the area directly around the pit. The charcoal layer included unfired clay and is likely to have been a tip thrown into the pit rather than a hearth which formed *in situ*.

Pit 2

This was an oval pit with a rounded bottom. It measured 70 cm by 35 cm and was 70 cm deep. Its filling was similar to the upper filling of Pit 1. Knapped flints (Table 1).

Feature 4 (Fig. 4)

This was a roughly circular feature which could be safely excavated to a depth of c. 2 m. Brick was discovered in the apparently undisturbed upper filling to a depth of over 30 cm.

Layer 1: Light-brown, compact sandy soil with some gravel and including a layer of gravel collapse. Flint (Table 1) and a few pottery fragments (Fig. 6:II) were recovered.

Layer 2: Redeposited gravel.

Interpretation: The part of the filling excavated seems to have been deposited by natural agencies.

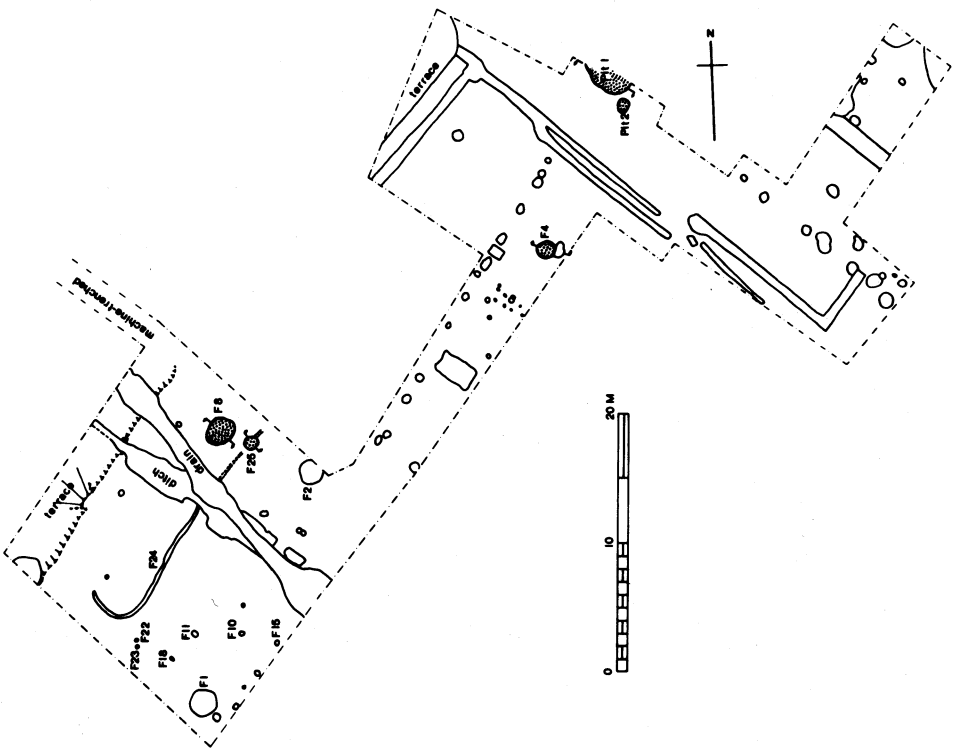

Fig. 3. Plan of the excavated features. Neolithic features are stippled.

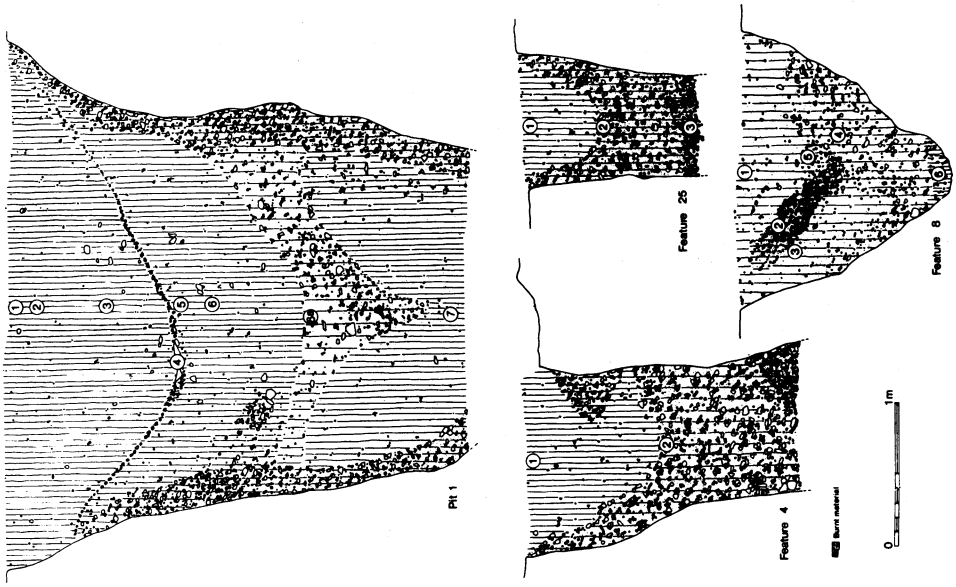

Fig. 4. Sections of the Neolithic pits.

Feature 8 (Fig. 4)

This pit was oval in plan, with a maximum dimension of 2·4 m, and roughly conical in section. It was fully excavated and had a depth of 1·5 m.

Layer 1: Brown, sandy soil with some gravel admixture. A few flint flakes (Table 1).

Layer 2: Redeposited gravel.

Layer 3: Brown, sandy, compact soil with occasional charcoal flecks. A few struck flakes.

Layer 4: Similar, and stratigraphically equivalent, to layer 3 but containing a higher proportion of gravel. One fragment of pottery (Fig. 6:12).

Layer 5: Layer of darker material with a few charcoal flecks at the base of layer 1 in the centre of the pit.

Layer 6: Basal layer of pit consisting of compact material similar to layer 5.

Interpretation: The fill of the pit was deposited largely by natural agencies. Layers 3 and 4 demonstrate more silt being deposited from the uphill side and more gravel from downhill (cf. sediment analysis p. 18 below).

Feature 25 (Fig. 4)

This was a roughly circular feature less than 1 m in diameter and was excavated to a depth of 1·2 m.

Layer 1: Brown, sandy soil with occasional charcoal flecks.

Layer 2: Redeposited gravel.

Layer 3: Cleaner redeposited gravel.

Interpretation: The excavated fill had been deposited by natural processes.

Feature 24

This was a steep-sided, flat bottomed gully with an average width of 30 cm and an average depth of 20 cm. The fill was similar to the upper fill of the pits. No post-pipes could be discovered to support its interpretation as a post trench. This gully survived as a soil mark near feature 25 but no certain relationship could be determined. Finds included a flake and a core but also a small fragment of coal.

Sediment Colour: The sediments within the Neolithic features were all very similar in colour and were classified by Munsell colour charts as 10 YR 4/4 or 5/4 (Lab. dried).

THE FLINT INDUSTRY

A rather limited flint industry was found in the excavation. Residual flakes from Post-Medieval features are omitted. The provenance of the remaining items is summarised in Table 1. Bracketed numbers refer to illustrations (Fig. 9).

TABLE 1

Feature	Pit 1						Pit 2			F.4	F.8	F.24		
Layer	1	2	3	4	5	6	7	8	1	1	1	3	1	Total
Cores	1	—	2	8(20)	2	6	—	—	—	3	—	—	—	22
Flakes and blades	9	63	4	206	27	65	6	3	26	22	30	10	—	471
Do. retouched or serrated	—	—	—	4(6–9)	2	—	1(10)	—	2(4)	—	—	—	—	9
Scrapers	—	—	1(11)	4(12–14)	1	—	—	—	—	—	—	—	1	7
Hollow scrapers	—	1(15)	1(16)	—	—	—	—	—	—	—	—	—	—	2
Microliths	—	—	—	1(2)	1(1)	—	—	—	—	—	—	—	—	2
Microburin	—	—	—	—	1(3)	—	—	—	—	—	—	—	—	1
Burins	—	—	—	2?	—	—	2(17–18)	1?	—	—	—	—	—	5
Fabricator	—	—	—	1(19)	—	—	—	—	—	—	—	—	—	1
Arrowhead	—	—	—	1(5)	—	—	—	—	—	—	—	—	—	1
Total	10	64	8	227	34	71	9	4	28	25	30	10	1	521

It will be seen that most of this material came from Pit 1, the greater part from Layer 4. This layer contained 53% of the total from the pit. 19% came from Layers 1–3 and 28% from the remaining part to be excavated.

Raw Material: Although few of the flints retained any cortex, it was clear that the raw material was a mixture of gravel flint and nodules taken from the chalk. The flints from the chalk could have been obtained from an outcrop north-west of the site; the maximum dimension of this material is about 9 cm, which may indicate that medium-sized pieces were being gathered. Most of the material is of good quality and varies in colour from black to light mottled grey.

Cores: There are 22 regular cores from the site as well as 5 irregularly worked lumps. Some of these may be regarded as blade cores and it is clear that the smallest items could have produced pieces of microlithic character. The three disc cores would have provided rather broader flakes (20), but none seem to have been intended for the production of arrowhead blanks. Two cores had subsequently been used as hammers. The regular items may be classified as follows:

One platform	Flakes removed all round	—
	Flakes removed part way round	10
Two platforms	Parallel	3
	At right-angles	2
	At an acute angle	2
Three platforms		1
Keeled, single platform		3
Keeled, with two or more platforms		1

Flakes and blades: All the unbroken flakes and blades on the site have been measured, with the exception of groups of less than 50 items. The resulting size distributions (not reproduced) seem to be so skew that more than one class of material may be present. It seems that an early Neolithic narrow-flake industry may be mixed with a considerable quantity of material of Mesolithic character. Of the items from Pit 1, 49 are complete unused blades, and 133 flints have a length:breadth ratio of 2:1 or more. The long flakes and blades have been examined in detail by Mr Weng and in dimensions and proportions resemble well-published material of Mesolithic date from the Kennet Valley (Froom, 1972 a & b). There are no clear metrical changes among the blades from different layers of Pit 1, most of these coming from Layer 4. Some of the flakes from Feature 8, Layer 1, are broader than the others at Cannon Hill. 18% of the material on the site showed possible signs of use. The proportion of utilised items was greatest in Pit 1, Layer 4.

Blade segments: The finds from Pit 1 certainly included 57 blade segments (Fig. 5:4). Another 11 were found in Pit 2. There is some imbalance amongst this material which could imply that some centre and distal sections were removed from the site for use elsewhere. These items were most common in Pit 1, layer 4.

Serrated and retouched flakes and blades: Two long flakes with serrated edges (Fig. 5:6 & 7) might well belong to the early Neolithic tradition. One backed fragment at least could be earlier (Fig. 5:8).

Core trimming flakes: Pit 1 included up to 14 core trimming flakes. A number of these would certainly be in place in a Mesolithic context.

Scrapers: The assemblage included one core scraper and six flake scrapers. They may be classified as follows:

Long end (broken) (Fig. 5:11)	1
Short end (one on an irregular triangular flake) (Fig. 5:12 & 13)	2
Short side (one on flake, one on core)	2
Disc (Fig. 5:14)	1
Burnt and broken fragments	1

One flake scraper (12) was notably thick and steeply worked.

Hollow scrapers: There are two examples, one on a small irregular flake (Fig. 5:16), and the other a flake tool with one retouched edge and a notch or hollow formed in the distal end (Fig. 5:15).

Microliths: There were two small microlithic points, one on a snapped blade and the other retaining its bulb (Fig. 5:1 & 2).

Microburin: There was one clearly defined microburin (Fig. 5:3) with a roughly worked notch.

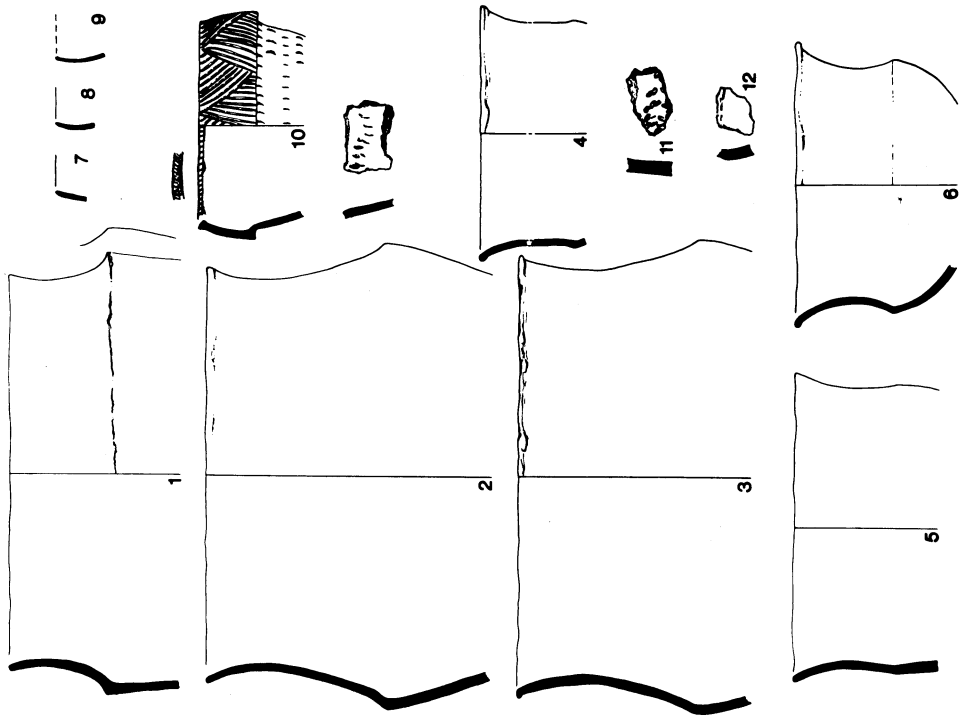

Fig. 6. Neolithic pottery from the excavation.
Scale: ¼. Drawing: D. Batchelor.

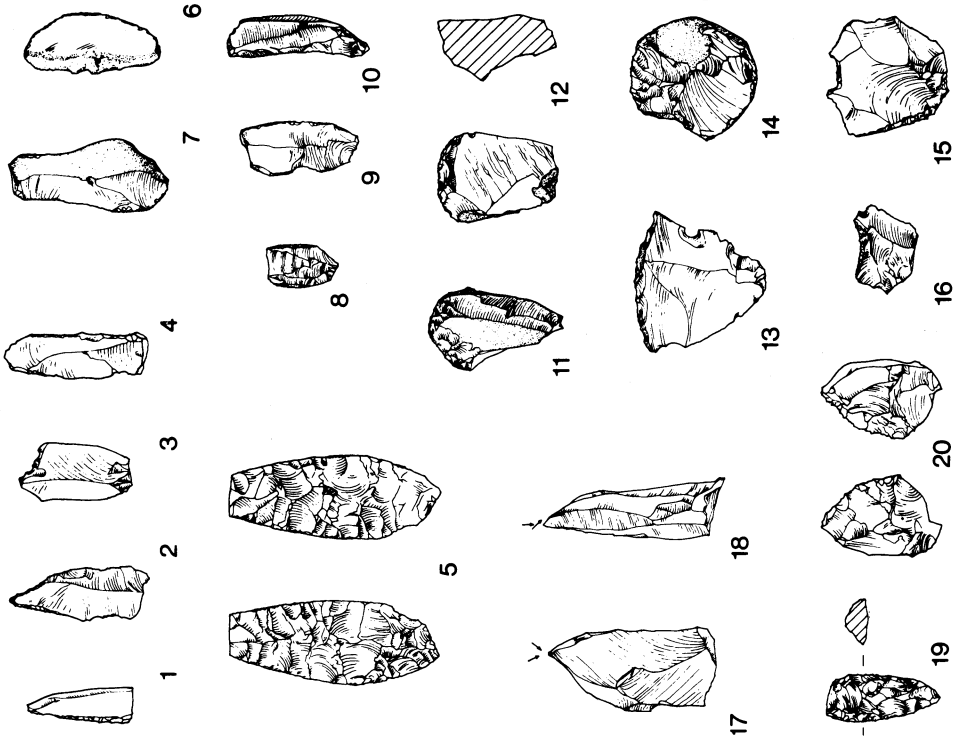

Fig. 5. Worked flints from the excavation.
Scale: 1–5 full size; remainder ½. Drawing: M. Rouillard.

Burins: There were two probable burins (Fig. 5:17 & 18) on narrow flakes or blades with well defined facets, and three other possible examples.

Fabricator: One abraded implement (Fig. 5:19) was probably a D-section fabricator.

Arrowhead: Part of a long leaf-shaped arrowhead was found; it lacked both tip and base and was defined by flat flaking on either side (Fig. 5:5).

Discussion

On the evidence of the associated pottery, there seems little doubt that the greater part of this material came from features of Neolithic date. Charcoal from the burnt layer (Layer 4) in Pit 1 gave a carbon date in the fourth millennium bc and a vessel of Fengate Ware was found in a secondary position. Another of the pits (Feature 4) had a sherd of later Neolithic Ebbsfleet or Mortlake Ware in its upper filling. Apart, perhaps, from the broader flakes from Feature 8, there is no material which need be particularly late. The earlier Neolithic preference for long narrow flakes is now well established and serrated flakes are a common component of flint industries of this period, but on this site both types are found with blades of Mesolithic character. The one steeply retouched scraper (12), however, is a characteristic Neolithic form, as is the leaf-shaped arrowhead (5). There are no implements on the site which need be as late as the latest Neolithic pottery.

There remains an uncertain, but considerable, Mesolithic element. The writers differ as to its significance; Mr Weng prefers to consider it in terms of the survival of Mesolithic traits into the Neolithic period, but Mr Bradley feels less confident that all the material is of one date. The excavated items include a microlith (2) and some regular blades for which a Mesolithic context is certainly acceptable; and the presence of segmented blades and blade cores is also striking. These blades, some of the cores, and the core trimming flakes do resemble Mesolithic finds from the Kennet Valley (Froom, 1972 a & b). One of the burins (18) should also be of this date. The hollow scrapers (15 & 16) and the other burin (17) could, however, belong to either period.

In conclusion it would appear that material in two traditions is present on this site, one Neolithic and the other Mesolithic. While there is ceramic evidence associated with the Neolithic use of the site, it is not clear whether the remaining material indicates an earlier, or even a separate, occupation.

THE POTTERY

Sherds belonging to a minimum of twelve separate vessels were recovered in excavation, ten from Pit 1 and one each from two other pits, Feature 4 and Feature 8. They are described in detail below (Fig. 6).

Large shouldered bowls:

Pot 1 (Pit 1, Layer 4) Sharp shouldered bowl with simple upright neck and rim. Black to dark brown internally and externally. Hard rough body with scattered large and medium flint filler. There are traces of diagonal wiping above the shoulder and the interior has been roughly smoothed below this point. There are slight traces that the external surface was burnished from the rim to the shoulder. The vessel was probably ring built.

Pot 2 (Pit 1, Layer 4) Shouldered bowl with rounded neck and simple rim. Some sherds suggest that the profile might slope more inwards than illustrated. Red-brown to buff externally, black to light grey internally, with red-buff to grey core. Scattered medium to large flint filler, mostly above and below the shoulder, with scattered fine to medium flints on the rim. Very scattered large flint filler internally and in the core. The surface of the vessel shows signs of horizontal wiping which is most regular above the shoulder. The interior is far rougher and shows signs of less regular wiping. Only the inside of the rim is properly smoothed. The entire exterior surface has been burnished. The vessel was again ring built.

Pot 3 (Pit 1, Layer 4) Shouldered bowl, similar in form and size to Pot 1. Black to buff

and light grey externally, black to light grey internally, with red-buff to light grey core. Medium to large flint filler externally, mainly on the shoulder and only scattered on the neck and rim. Internally flint filler is principally found inside the shoulder angle, and locally inside the rim and to the base of the section. There are some scattered medium to large voids in the interior surface. The interior is roughly formed with irregular squeezes of clay. The outside has been smoothed from the rim to the shoulder and may originally have been burnished. There are traces of horizontal wiping here, and some diagonal wiping is also seen below the rim. Parts of the interior show less effective horizontal wiping. This vessel was possibly ring built.

Smaller carinated bowls:

Pot 4 (Pit 1, Layer 4) Slack shouldered bowl with irregular pulled over rim. Red-buff to grey-black externally, pink-buff to light grey internally, buff to light grey core. Scattered medium to large flint filler, mainly below the rim and on the shoulder externally, internally mainly below the rim. Roughly smoothed below the rim externally with possible traces of horizontal wiping on the shoulder. Irregular horizontal wiping internally. Possibly ring built.

Pot 5 (Pit 1, Layer 4) Very slack, possibly deep, shouldered bowl with simple rim. The drawn angle seems to be correct, although some sherds could suggest that the profile slopes rather more inwards. Buff to black externally, grey-black to black interior and core. Fine and medium flint filler with larger pieces in the core. Externally the grits are most prominent about the shoulder. Internally they occur in patches of all sizes. The exterior surface has been smoothed and wiped horizontally and retains possible grass impressions. There are also signs that the interior had been smoothed. Traces of burnish, applied horizontally, survive below the rim and towards the shoulder, and may have been more extensive originally. Possibly ring built.

Pot 6 (Pit 1, Layer 4) Fine shouldered bowl with hollow neck and slightly out-turned rim. This rim is generally quite plain but is locally lipped as drawn. Evenly fired, grey black to dark brown throughout, with one patch buff-brown. Sparse scattered fine flint filler, occasionally in patches, on the exterior surface and more commonly with medium flints beneath the shoulder. Internally the grits can be of medium flint and are more scattered, except for a concentration under the shoulder. The core contains medium and large crushed flints. The outside surface is smooth but less regular below the shoulder. The internal shoulder angle has been emphasised by rough grass wiping and is notably irregular. The exterior retains horizontal burnish over the whole of the drawn profile. Internally the vessel has been burnished down to the shoulder. Again it had been ring built.

Small thin walled cups:

Pot 7 (Pit 1, Layer 4) Diameter uncertain. Light brown to buff throughout with a very little sand filler. The exterior has been smoothed, but the inner surface has been formed more clumsily and includes accidental fingernail imprints.

Pot 8 (Pit 1, Layer 4) Diameter uncertain. Red buff externally and internally with grey buff core. Sparse fine sand filler, with one piece of flint grit and some small voids. The exterior is rough and shows signs of finger moulding, while the interior has been smoothed and shows non decorative fingernail imprints.

Pot 9 (Pit 1, Layer 4) Diameter and rim angle uncertain. Yellow-buff throughout with scattered medium rounded sand grains and medium to large irregular voids. The rim is rather irregular.

(Unillustrated) Pot 9a (Pit 1, Layer 4) Two body sherds, *possibly* from a further vessel of this form. Unevenly fired with grey-black exterior, grey-buff interior and blacker core. Hard body with fine sand filler, together with occasional medium sand and medium to large flints, the latter confined to the exterior surface. Some attempt has possibly been made to smooth the rough outside surface.

Miscellaneous:

Pot 10 (Pit 1, Layer 3) Collared vessel, illustrated with a body sherd from the lower part of the profile. Black to greyish white on both surfaces and core, over the upper part of the vessel. The body is less evenly coloured, grey-black to grey-buff. Sparse medium flint filler and fine rounded sand, with slightly more large flint filler in the main part of the body. There are also a few fine voids. The vessel is quite well fired but both surfaces are irregular and the exterior profile is slightly corrugated. The vessel may have been ring built. It has an inturned collar with a slightly lipped rim and shows a faint bevel internally. The surface of the collar is decorated by V profile incised lines up to 1 mm deep, arranged in triangular panels. These incised lines cut the lip of the vessel and are balanced on the rim top by an arrow pattern formed in the same technique. The main body of the vessel is decorated by horizontal zones of fine fingernail impressions, emphasising the rather corrugated surface. On one body sherd, the exact position of which is not clear, a loop of fine fingernail imprints is cut by a line of heavier impressions of similar type.

Pot 11 (Feature 4, Layer 1) Body sherd. Its position on the vessel is not certain. Buff externally and black internally with a black and grey core. Scattered medium flint externally with medium and large flints in the core. The interior surface lacks any grit and shows signs of horizontal wiping. The exterior is decorated by two opposed rows of twisted cord impressions.

Pot 12 (Feature 8, Layer 4) Shoulder sherd. The diameter and angle are uncertain. Black to dark-grey exterior, dark-grey interior, and dark red core. Fine flint filler internally and larger flints in the core.

Discussion

All but three of these vessels were found in a single deposit which has given a carbon date in the earlier Neolithic. The associated flint assemblage was consistent with this date, although some items may have been survivals from an earlier occupation. Pot 10 was found above the burnt deposit (Layer 4) and, to anticipate further discussion, belongs in the late Neolithic.

Three types of vessel were found together in the burnt deposit: delicate carinated bowls; much larger and coarser shouldered bowls and a series of very small cups. There are at least some differences of fabric and technique between these different groups and a single source does not seem likely. The smaller shouldered bowls belong to Smith's Grimston-Lyles Hill series (1974), for which a long series of radio-carbon dates are now available, ranging from the early to the final Neolithic (Green, 1975). The fine ware bowl (Pot 6) is paralleled at the Hanging Grimston type site (Newbiggin, 1937), while the slacker profile of Pot 5 is found on vessels from the shafts at Eaton Heath, Norwich (Wainwright, 1973). The general profile of Pot 4 is also found on decorated Mildenhall ware on the East Anglian settlement of Hurst Fen (Clark, 1960). It is no longer thought that this style of decorated pottery has a later beginning than the plain forms.

The small cups are far more unusual. While there is nothing to preclude their reconstruction as simple bowls, the vessel walls are probably too thin. They can, however, be matched at Windmill Hill (Smith, 1965), where an earlier Neolithic date is again appropriate.

The three large bowls give other difficulties. Pot 2 and Pot 3 are almost alike and their pronounced shoulders and basically upright stance are not easy to parallel. They must take their dating from the associated material. There was no evidence from the loose sherds in Layer 4 for any flat bottomed vessels and one wonders if bowls of this size would last for long unless they were set in the ground. Their dimensions approach those of some 'storage pits', and upright pots were in fact found in such pits at Hurst Fen (Clark, 1960). A specialised function again seems likely at Cannon Hill. The third of these bowls, Pot 1, has a wider history and occurs without

decoration as part of the Grimston-Lyles Hill material at Broome Heath in Norfolk (Wainwright, 1972), and again at Hurst Fen decorated in the Mildenhall style. The form has a long lifespan and also occurs at Thorpe in Surrey, decorated in Ebbsfleet style (Grimes, 1960, Fig. 71).

The main affinities of this group lie with the early undecorated wares of eastern England. None of the vessels have features in common with the Hembury style, which extended as far east as Wiltshire, and the absence of decoration make a further contrast with the early Neolithic pottery of the south coast and East Anglia. In the latter case, however, parallels of general form can be seen. The difference is not likely to be a chronological one. More interesting is the absence of Abingdon ware. The type site has now given radiocarbon dates which indicate a beginning in the fourth millennium bc and some sherds of this type are known from Staines to the east of Cannon Hill (Robertson Mackay, 1962 and 1965, 320). Staines also included a quantity of decorated Mildenhall ware and other bowls with perforations below the rim. The contrast between these groups remains to be explained but could reflect no more than the size of the present sample. On both sites fabric analysis suggests that the fine bowls were introduced from another area.

The remaining pottery was not found in association, although Pot 10 was stratigraphically later than the group already discussed. It is not possible to estimate the time interval involved. This vessel is completely typical of Fengate ware and belongs to a developed stage of the later Neolithic sequence. The single shouldered sherd from Feature 8 (Pot 12) can only be compared with the forms represented on this site by finds from the burnt layer in Pit 1. It should again be emphasised that individually these forms could have a long lifespan and any date in the Neolithic might be appropriate for this sherd. Finally, the body sherd from Feature 4 (Pot 11) again belongs to the later Neolithic. Too little of the present vessel survives for any firm conclusion, but the decoration and the fabric are compatible with either Ebbsfleet or Mortlake ware. It is at least possible therefore that it occupies an intermediate position between the finds from the burnt layer and the Fengate vessel.

DISCUSSION

This information does not require a lengthy treatment since two fairly full discussions of comparable pits and shafts have recently appeared (Wainwright, 1973; Bradley, 1975). Pit 1 at Cannon Hill is much larger than other shafts of the Neolithic period, which do not often exceed 1 to 2 m in diameter. It is also of apparently early date. In fact, on the evidence of the single radiocarbon sample, Pit 1 would be the earliest excavated shaft of this type in Britain. The closest parallel is with Eaton Heath near Norwich (Wainwright, 1973), where some of the pottery has features in common with vessels at Cannon Hill, but the radiocarbon dates there did not appear in stratigraphic order and it is possible that some of the charcoal employed had its origin in an earlier occupation. The excavator concluded that the shafts at Eaton Heath probably belonged in the second half of the third millennium bc.

There remain two problems with the chronology of the present site. It is certainly true that the pottery and flints in the burnt layer (Layer 4) are consistent with the carbon date, but they were also found only a little below a vessel of Fengate ware. Although the pottery from the burnt layer could be placed later in the Neolithic, this vessel cannot be dated any earlier. However, the possible presence of residual material in Pit 1 may mean that the radiocarbon date is too old.

There are three other ways of resolving the difficulty. It is possible that the offending vessel had occupied an intrusive feature cut from a higher level, or that there had been a period of stability over the site of Pit 1 during which no silt had gathered. The excavation records do not support either of these views and the comparable sediments in Feature 8

seem to have accumulated quite fast (cf. p. 18 below). A third possibility would be that, like the Post-Medieval items in the tops of the shafts, the later Neolithic vessel had sunk in the soil, aided by the action of roots and the movement of earthworms. This is not a wholly satisfactory answer and some doubt must remain—either for Neolithic chronology or for the exact date of this site.

The second problem concerns the Mesolithic material. The exact contribution of Mesolithic natives to early Neolithic culture is an apparently insoluble problem. Items of Mesolithic type are certainly known in Neolithic contexts, but it is still not clear whether or not these are rubbish survivals. At the same time most of the radiocarbon evidence for late Mesolithic activity lies in the fifth millennium bc. Where this is not the case, for example in parts of Scotland, the Neolithic itself may have a late beginning. Indeed the 'Early Neolithic', as normally defined, may only be a mature adaptation to a landscape settled rather earlier (cf. Case, 1969). One exception to this confusing pattern is found in the Kennet Valley. At Wawcott Site 1, a Mesolithic occupation has given a radiocarbon date of 3310±130 bc (BM 449). This date is very similar to another for the Lambourn long barrow, only 10 km away, and on this basis the presence of Mesolithic material in the late fourth millennium bc might be expected elsewhere in the region.

The view that the two industries at Cannon Hill were contemporary with one another depends on a detailed understanding of the stratification. It is certainly true that flints of Mesolithic aspect were most frequent in Layer 4 of Pit 1, which also included a group of Neolithic pots. If this is understood as a hearth formed *in situ,* the case for connecting the 'Mesolithic' and 'Neolithic' material is certainly strengthened. On the other hand, this layer may simply be a tip of material from the surrounding area. This view is now taken of the 'hearths' in the ditches of causewayed enclosures and, if this second interpretation were appropriate, a residual element could still be possible. Since most of this layer had been destroyed before the site was known and the surface in the surrounding area had been removed in landscape gardening, there is no way of resolving this problem.

This question of chronology has a bearing on the explanation of the site. Pit 1 would appear to belong to the earlier Neolithic, while the Ebbsfleet or Mortlake sherd from Feature 4 came from its highest layer and does not preclude a similar context for this pit. The other Neolithic features could be just as early. The real problem is that the explanation of similar prehistoric pits has usually been based on extrapolation from field and literary evidence relating directly to ritual sites of Iron Age and Roman date (Ashbee, 1963). There is certainly some affinity between La Tène shafts in Germany and one Middle Bronze Age example in Hampshire, but to extend the argument back to Cannon Hill would more than double the chronological distance again. In fact the main group of British sites are later Neolithic and Early Bronze Age and, in discussing these, Wainwright (1973) has shown some reluctance to extend the ritual interpretation back without additional evidence. Such evidence was lacking at Eaton Heath, where settlement features were recorded close to the shafts. Here it was perfectly possible that they had really functioned as wells.

There have been two developments since Wainwright's paper. There has been the discovery on the Fen edge at Peterborough of undoubted Neolithic wells, associated with Grooved Ware (Prior, 1975). These retained a waterlogged lining of brushwood, but, had this not survived, the profiles of these features would have been like those of the shallow pits at Eaton Heath or Cannon Hill. Secondly, analysis by the writer of St. George Gray's excavation at Maumbury Rings has only emphasised the non-utilitarian nature of the ring of shafts on that site (Bradley, 1975). These were also associated with Grooved Ware. These pits contained a number of unusual deposits, including a stag's skull

complete with antlers, and had been deliberately refilled, at least in part. The shafts belonged to the formal layout of a henge and also included human bones in their filling.

The excavated features at Cannon Hill do nothing to suggest a solution, and it was for this reason that a detailed analysis of the filling of the one fully excavated pit was undertaken by Dr M. L. Shackley (p. 18 below). A number of specific questions were asked concerning the origin, composition and textural variation of the sediments in the pit. It was particularly important to establish whether the lowest filling could have formed in standing water, and whether there was any evidence for an organic deposit on the base of the pit or any systematic variation in phosphate contents. The analytical results were, on the whole, inconclusive, but there was no evidence indicating that the lowest filling had formed under standing water, nor that it had contained any special deposit, although the latter practice has been suggested from the Neolithic site of Dorchester on Thames (Atkinson, Piggott and Sandars, 1951). The phosphate content of the sediments was variable, and seems to be related to leaching from the Post-Medieval garden soil. There was no convincing evidence for settlement close to this shaft, and the acidity of the sediments made them unsuitable for the preservation of molluscan remains. One observation does, however, seem particularly relevant. It is likely that the water table on the site has been subject to considerable fluctuation, and has at times been much higher than it is now, this changing level partially accounting for the transport and dispersal of fine material (clays and silts) within the filling of the shaft. This will also have disseminated pollen grains. In itself this evidence cannot be used as an argument that the shafts were dug specifically to obtain water, but it does not negate this possibility and could indeed suggest that shafts dug here for ritual purposes might easily have flooded. If the water table did vary, this could even explain why all the pits are not the same depth, and this may also apply to Eaton Heath, where only the shallower pits contained Ebbsfleet ware. If this were of chronological significance, it could again be related to local fluctuations of the water table.

There remain two objections to this interpretation. Most serious is the absence of a contemporary settlement. In fact the results of sediment analysis only demonstrate that the area around Feature 8 was not in domestic use and pollen samples would have been needed to show if this applied more widely. Pit 1 did in fact contain a quantity of Neolithic debris and Pit 2 alongside it resembles the shallow 'storage pits' characteristic of contemporary settlements. Even the possible palisade, Feature 24, *could* be matched in a later Neolithic context (Bradley and Ellison, 1975, 160). The site had been so badly damaged in earlier centuries that many shallower features might have been lost. Indeed the evidence from Eaton Heath seems to show that the shafts there were at the *edge* of a settlement area. Certainly the Cannon Hill pits follow the limits of level ground.

Finally the form and siting of the pits at Cannon Hill may raise other doubts. The pits were not far from an area of flood plain and also quite close to a stream. Could a well serve any purpose in this setting? One explanation might be that these pits were dug not just to collect water but to obtain a supply which was free of the muddy silt which follows periods of rainfall (cf. Musty, 1973). The Thames gravels do include a series of Roman wells in very similar positions and, in some cases, their dimensions compare with those of the pits at Cannon Hill. This analogy, like any other, could be misleading, but this hypothesis has the virtue of economy. It is rash to endow these sites with magical properties unless good reason is shown. The problem can only be settled by excavation of a more generous site.

APPENDIX

REPORT ON SEDIMENT SAMPLES

by Myra L. Shackley

1. A series of samples were taken at 10 cm intervals from Feature 8 and examined in the laboratory, together with samples from levels 1–6 (Feature 8) and control samples from both the western and eastern areas.
2. The colour of the air-dry samples was recorded using a Munsell soil-colour chart. pH measurements were taken from each sample, which was then examined under a stereomicroscope at magnifications from X6–X50 to detect the presence of organic material or alien particles. Qualitative phosphate determinations were carried out by the Gundlach method (Shackley, 1975) and expressed on a scale from 0–5.
3. The results of these tests are summarised in Table 1.
4. The sediments varied in colour from 10 YR 5/4 (dark yellowish brown) to 10 YR 4/4 (yellowish brown) but this was both unsystematic and insignificant.
5. pH measurements, which record the relative acidity or alkalinity of the sediment, were carried out using an electronic pH meter. The values obtained clustered around the normal (pH 7·0), with very little variation. Under such conditions it is unlikely that pollen or mollusca will be preserved, or that the analysis of such preserved environmental material is likely to be significant.
6. Phosphate values were, on the whole, rather high, but again showed no systematic variation.
7. Physical examination showed all the samples to be principally composed of gravels, with lesser quantities of sand and a little very fine material. The gravel fraction included rounded pebbles, max. 7–8 cm in length, together with smaller particles patinated yellow or white. Most particles were heavily waterworn and abraded and gave every appearance of having been redeposited from river gravels. The sand fraction consisted of clean, well-rounded waterworn quartz grains, with few heavy minerals. No signs of burning or other evidence of human activity could be observed. No mollusc shells, bone fragments or seeds were present. A few microscopic pieces of charcoal appeared in each sample, but none large enough for identification. This is not necessarily an indication of nearby human activity.
8. Samples 1–8 had a relatively small proportion of fine material (silt and clay), and that present seemed to be coarse silt rather than clay. The proportion of fine material increased with depth, reaching a maximum in sample 13. It still, however, remained an insignificant part of the sediments as a whole and it is estimated that in sample 13 the combined silt and clay fraction is less than 5% of the total sample.
9. The lower fill of the pit (samples 7–13) seems to be derived from weathering of the walls. The upper fill, which is less clay-rich, probably includes topsoil-derived material. It has been subject to a considerable degree of leaching which has resulted in the movement of fine particles down the pit. All the deposits are likely to have accumulated rather rapidly, and there are no indications of human activity.
10. The uneven phosphate content of the pit is related to leaching, the addition of phosphates from cultivation of the above soil and the differential movement of water.
11. It seems likely that the water table was once much higher than it is now, and this will have assisted in the movement of

water through the pit, consequently resulting in differential transport of clay, phosphate and humus. Much of the fine material might have been washed through into the surrounding gravels.

12. No identifiable palaeoenvironmental remains were recovered from the pit, but this does not mean that they were never present. It is unlikely, under the conditions outlined above, that anything at all could be deduced from further analysis. A superficial examination of samples from Features 4 and 25 showed them to be very similar, but this was the only pit whose basal layers were available for examination.

TABLE 1: FEATURE 8

Sample No.	Munsell colour	Description	pH	Phosphates
1	10YR 4/4	dark yellowish brown	6·9	3
2	"	"	6·9	4
3	"	"	6·9	5
4	"	"	6·9	4
5	10YR 5/4	yellowish brown	7·0	1
6	"	"	7·1	3
7	"	"	7·2	2
8	"	"	7·4	3
9	"	"	7·4	3
10	10YR 4/4	dark yellowish brown	7·2	3
11	"	"	7·2	3
12	"	"	7·1	5
13	10YR 5/4	yellowish brown	7·0	5

Control sample, western area: 5
Control sample, eastern area: 4

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