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THE EXCAVATION OF BARROWS V–IX AT WEST HEATH, HARTING, 1980

by Peter Drewett

with contributions from C. R. Cartwright, L. Wilkinson, R. I. Macphail, R. Scaife, P. Hinton and R. Otlet

The West Heath barrow group consisted of a nucleated cluster of nine mounds together with three outliers. Barrows I–IV were excavated during 1973–5. This report describes the excavation of Barrows V–IX undertaken prior to their destruction by sand quarrying in 1980. Barrows V, VIII and IX contained no burials and were simple turf mounds. Barrow VII consisted of two ditches encircling a disturbed burial pit. Barrow VI, although only a simple turf stack, covered a multiple burial pit containing collared urns and cremations. Considerable environmental data was recovered from a study of the soils, pollen and macroscopic plant remains. A series of Carbon 14 dates suggests a date range of c. *2100–1450 B.C. for the development of the cemetery.*

INTRODUCTION

This report records the excavation of the remaining five round barrows within the central cluster of barrows at West Heath. The report on the excavation of Barrows I–IV was published in 1976 (Drewett 1976). The three outlying barrows probably related to this group (Drewett 1976, fig. 1) have not been excavated. For a location map for the barrow group (SU 786226) see Drewett (1976, fig. 1). The excavation was entirely funded by the Department of the Environment. The Department also funded the post-excavation work and provided a grant for this publication. For this reason the report is presented, in accordance with current D.O.E. policy, partly on microfiche. The finds have been deposited in Chichester District Museum.

THE EXCAVATION

Barrow V (Figs. 1–3)

Barrow V originally consisted of a turf mound some nine metres in diameter. It was, however, extensively disturbed by root and rabbit action together with two large robber trenches (Fig. 2). Three small patches of turf stack did, however, survive. From these it was possible to establish that the barrow was constructed in an area perhaps first cleared in the Mesolithic. This clearance resulted in the podzolization and erosion of the soil cover. However, this erosion had stabilized long enough for a turf cover to develop prior to the construction of the mound (microfiche, pp. 20–9). The pollen analysis suggests that the barrow was constructed in open woodland dominated by oak, hazel and lime (see below, Palynological Analyses). The little charcoal obtained from Barrow V is entirely oak (microfiche, pp. 37–8). This charcoal was partly scattered through Context 1 but also came from a patch to the north-west of the centre of the mound. An attempt to locate possible burial areas with phosphate analysis produced inconclusive results (microfiche, pp. 42–3). Sixty pieces of indeterminate struck flint, together

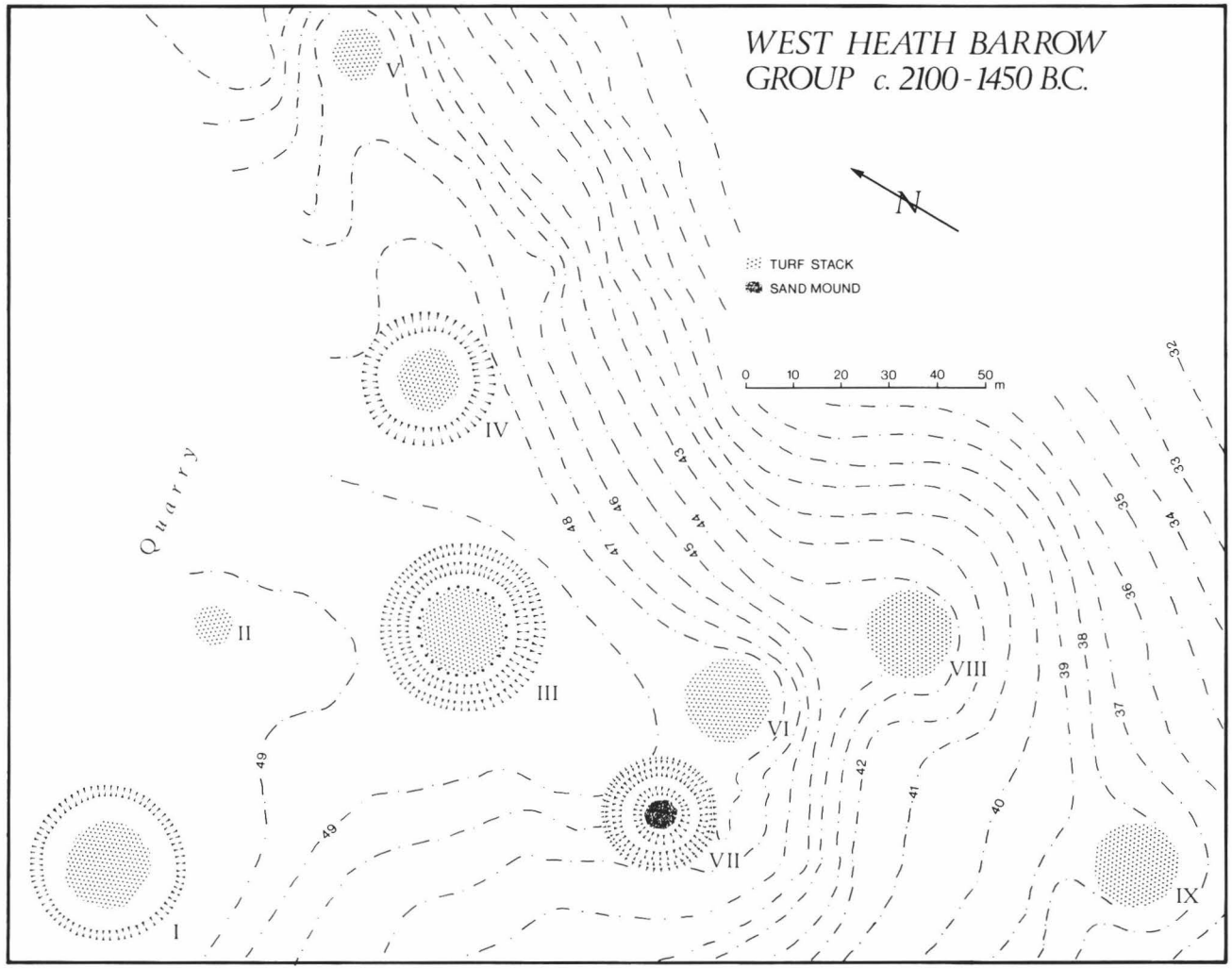

Fig. 1. West Heath, 1973–80. Plan of barrow group as excavated. Contours at metre intervals.

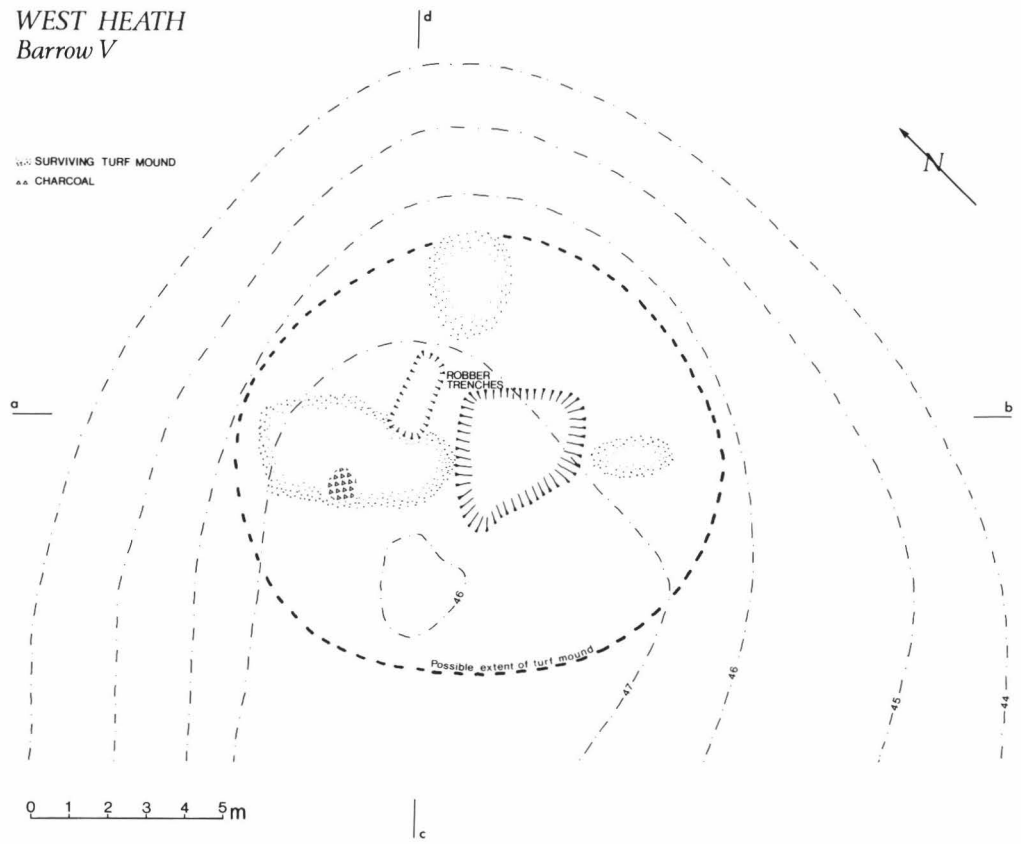

Fig. 2. West Heath, 1980. Barrow V. Contours at metre intervals.

with two fire-cracked flints, were found in Context 1 (microfiche, pp. 4–13). A ferruginous sandstone arrow-straightener or awl sharpener (microfiche, p. 14) found in Context 1 may have been a casual loss or perhaps may have been deposited with a burial disturbed by the robber trenches.

Barrow VI (Figs. 1, 4–6)

Barrow VI consisted of a turf mound 19 metres in diameter surviving to a maximum of two metres in height. The turf mound appeared to be a single phase construction with most of the turves being stacked on a highly degraded soil which, because of the clay-rich bands in the Folkestone Beds, is a surface water gley (microfiche, pp. 20–9). Samples taken for pollen analysis have not yet been analysed, but some identification of local vegetation may be obtained from the carbonized macroscopic plant remains spread over the surface of the buried land surface. This probably indicates the clearance of the site by fire prior to construction of the mound. The charcoal consisted of oak, hazel and birch (microfiche, pp. 37–8). Also present were the leaves, buds and flowers of bell heather (*Erica cinera*) and ling (*Calluna vulgaris*). The flowering period of both these species is from July to September but the greater number of buds and immature seed capsules are typical of the earlier part of the flowering period (microfiche, pp. 39–41). Burning of the heather and therefore probably the construction of the barrow in mid summer appears likely.

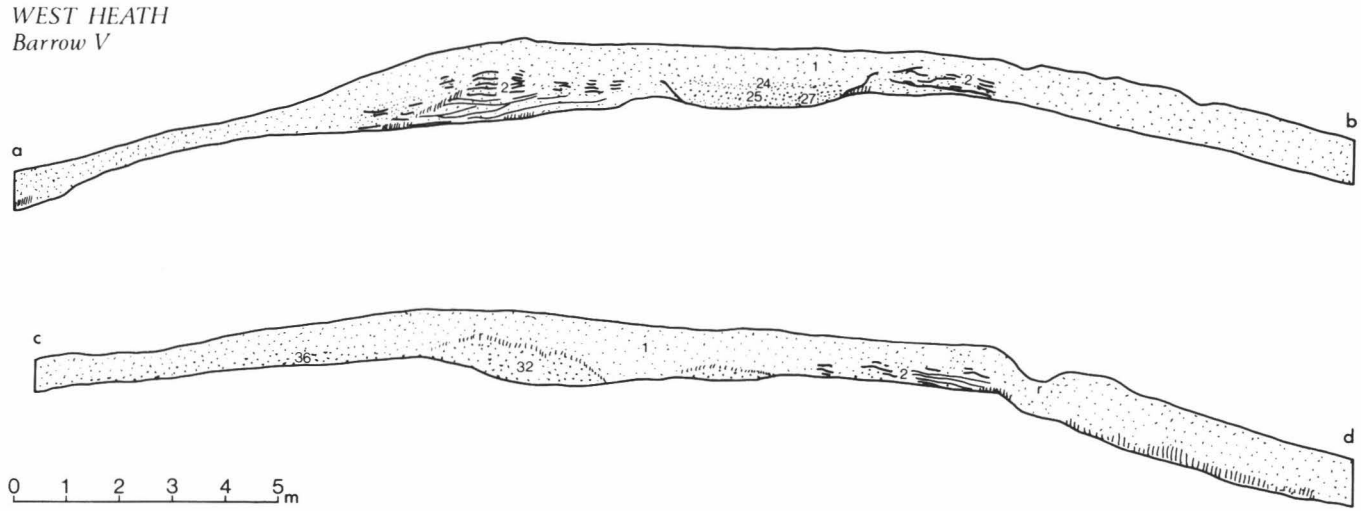

Fig. 3. West Heath, 1980. Barrow V sections. Key: 1, dark grey loose sand; 2, black, grey and white sand (turf stack); 24, light grey loose sand (robber trench); 25, grey loose sand (robber trench); 27, grey loose sand with shattered flints (robber trench); 32, loose grey sand.

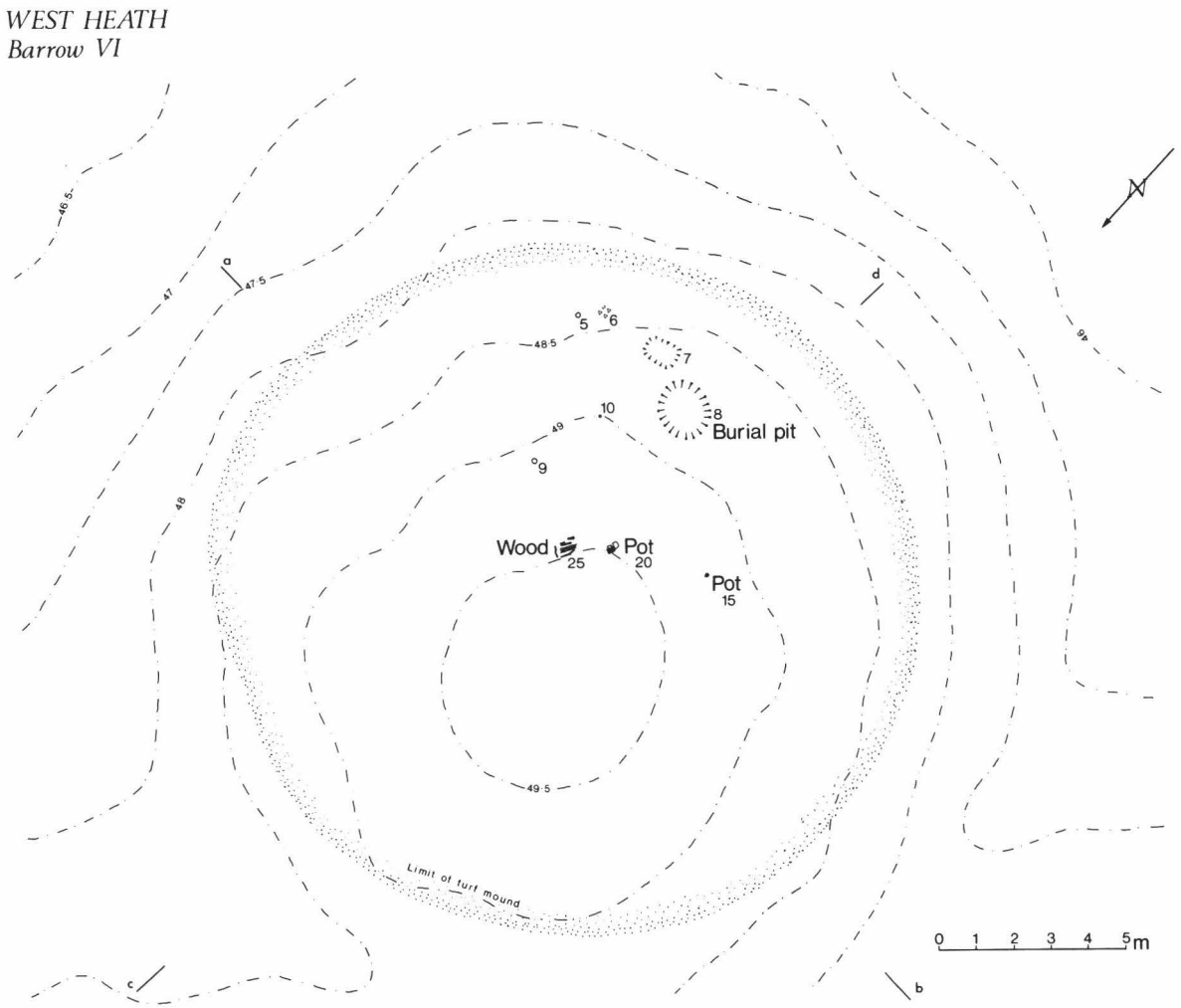

Fig. 4. West Heath, 1980. Barrow VI. Contours at 0.5-metre intervals.

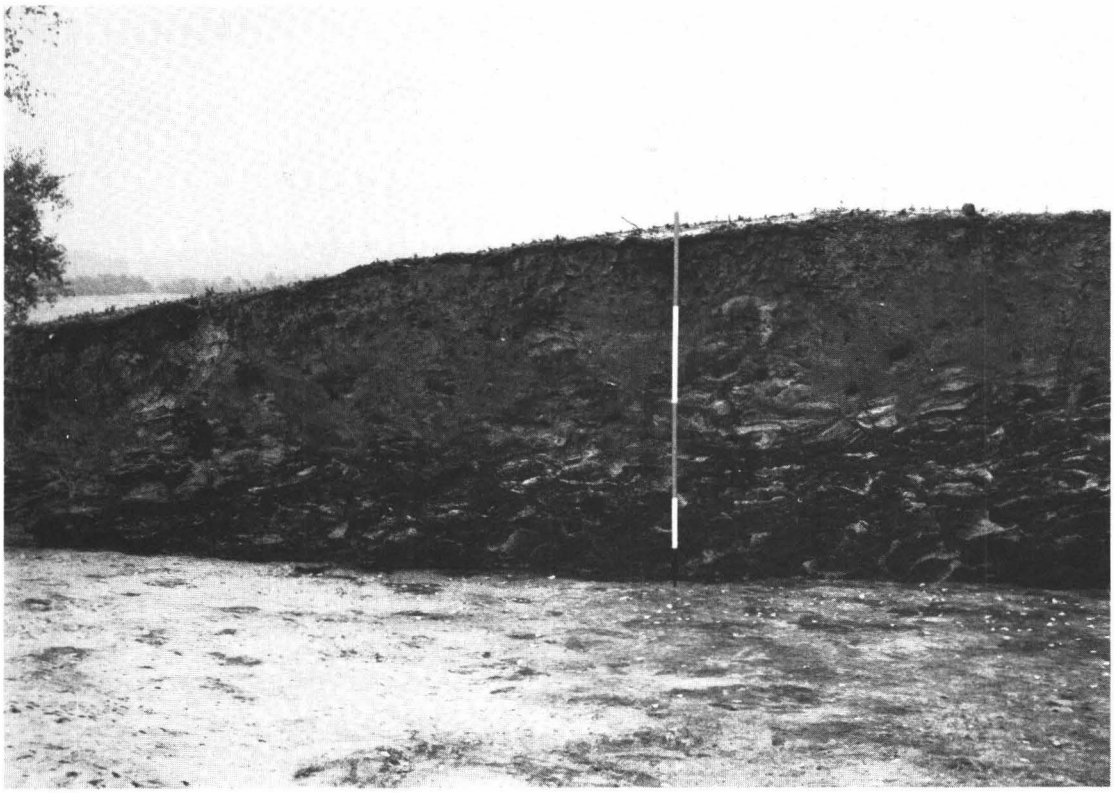

Fig. 5. West Heath, 1980. Barrow VI. Turf stack from the west. Scale 2 metres. (Photo. P. L. Drewett)

The construction of the barrow may well have taken place some time after the burial of three individuals in a pit well south of the centre of the mound (Fig. 4, Context 8; Fig. 13). This pit was 1.5 metres in diameter and 1.1 metres deep. The contents of the pit were packed around Context 11 (Fig. 13) which consisted of a conical deposit of black sandy clay, similar to the buried land surface under the mound. It is possible that this material replaced a post left to rot *in situ*. About two thirds of the way up the pit two collared urns were set upright in the top of Context 17 (Fig. 13, Contexts 23, 24). Context 23 contained the cremated remains of a mature adult male (microfiche, pp. 15–19).

A firm black layer of sand was packed above Context 17 (Fig. 13, Context 13). Within this were two collared urns (Fig. 13, Contexts 21, 22). Within Context 21 (Fig. 7) were the remains of an adult male lacking all skull bones (Fig. 8), suggesting the removal of the head prior to cremation (microfiche, pp. 15–19). Context 22 contained a few fragments of cremated bone including one unfused suture, suggesting a child (microfiche, pp. 15–19). The top of the pit was finally filled in with several turves (Fig. 13, Context 14).

Adjacent to the burial pit was a small subrectangular pit some 8 cm. deep (Fig. 4, Context 7). This pit was filled with dark grey sand, large pieces of charcoal and fire-cracked flints. The charcoal consisted of 2,120 g. of oak and 5 g. each of birch and hazel (microfiche, pp. 37–8). East of this pit was a patch of finely powdered charcoal, too small to identify (Fig. 4, Context 6). Adjacent to this patch was a small plain pot

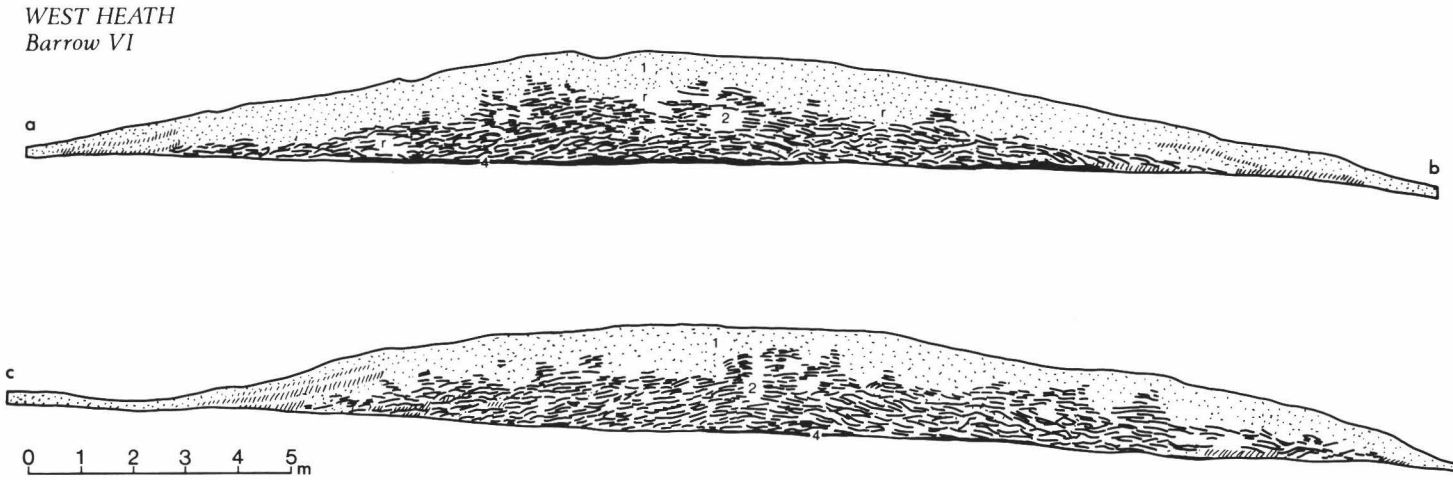

Fig. 6. West Heath, 1980. Barrow VI sections. Key: 1, loose grey sand; 2, white sand with black rectangles (turf stack); 4, compact black sand with fine grit (buried land surface).

Fig. 7. West Heath, 1980. Barrow VI. Collared urn from Context 21 prior to conservation. Scale 5 cm. (Photo. J. Porter)

Fig. 8. West Heath, 1980. Barrow VI. Cremation within collared urn from Context 21 during conservation. Scale in cm. (Photo. J. Porter)

with applied lugs (microfiche, pp. 2–3) set into a small hollow.

To the north-east of the burial pit were two small, black circular patches. Context 9 was a small pit 30 cm. in diameter, but only 1 cm. deep. North-west of Context 9 was a patch of large pieces of carbonized wood (Fig. 4, Context 25). This wood was entirely oak (microfiche, pp. 37–8). Adjacent to this a collared urn had been placed on the burial land surface (Fig. 4, Context 20) and mound turves packed around it (microfiche, pp. 2–3). During the construction of the mound a satellite burial in a collared urn (microfiche, pp. 2–3) was incorporated into the turf stack (Context 15). This contained a few cremated bone fragments, possibly of an immature individual (microfiche, pp. 15–19).

Details of what appears to be essentially a residual Mesolithic flint assemblage, mainly from the base of the turf stack and the old land surface, are on microfiche (pp. 4–13).

Barrow VII (Figs. 1, 9–12)

Barrow VII consisted of two concentric ditches, the outer ditch being 21 metres in diameter and the inner ditch 11 metres in diameter. The upcast from the inner ditch was probably piled up in the central area while traces of an outer bank (Fig. 9) suggest that the upcast from the outer ditch may have formed a bank. No sign of a turf mound was recorded. No contexts suitable for pollen analysis were located and little charcoal was found, except in the central burial pit. A few fragments of oak and birch charcoal came from the ditches (microfiche, pp. 37–8).

The central sand mound covered an oval burial pit. This pit had clearly been robbed and later disturbed by rabbits. A minimum of two collared urns were found by the robbers and thrown back into the grave with the backfill (microfiche, pp. 2–3). The cremated bone mixed with the backfill consisted of very small, abraded, unidentifiable fragments (microfiche, pp. 15–19).

The flint assemblage from Barrow VII indicates some rough core preparation (indicated by 31 cores and 231 flakes), perhaps contemporary with the construction of the barrow. Several blades and retouched flakes may however be residual Mesolithic material (microfiche, pp. 4–13).

In the late medieval or early post-medieval period a field bank was built over the edge of the mound (Fig. 11; indicated by contours on Fig. 9).

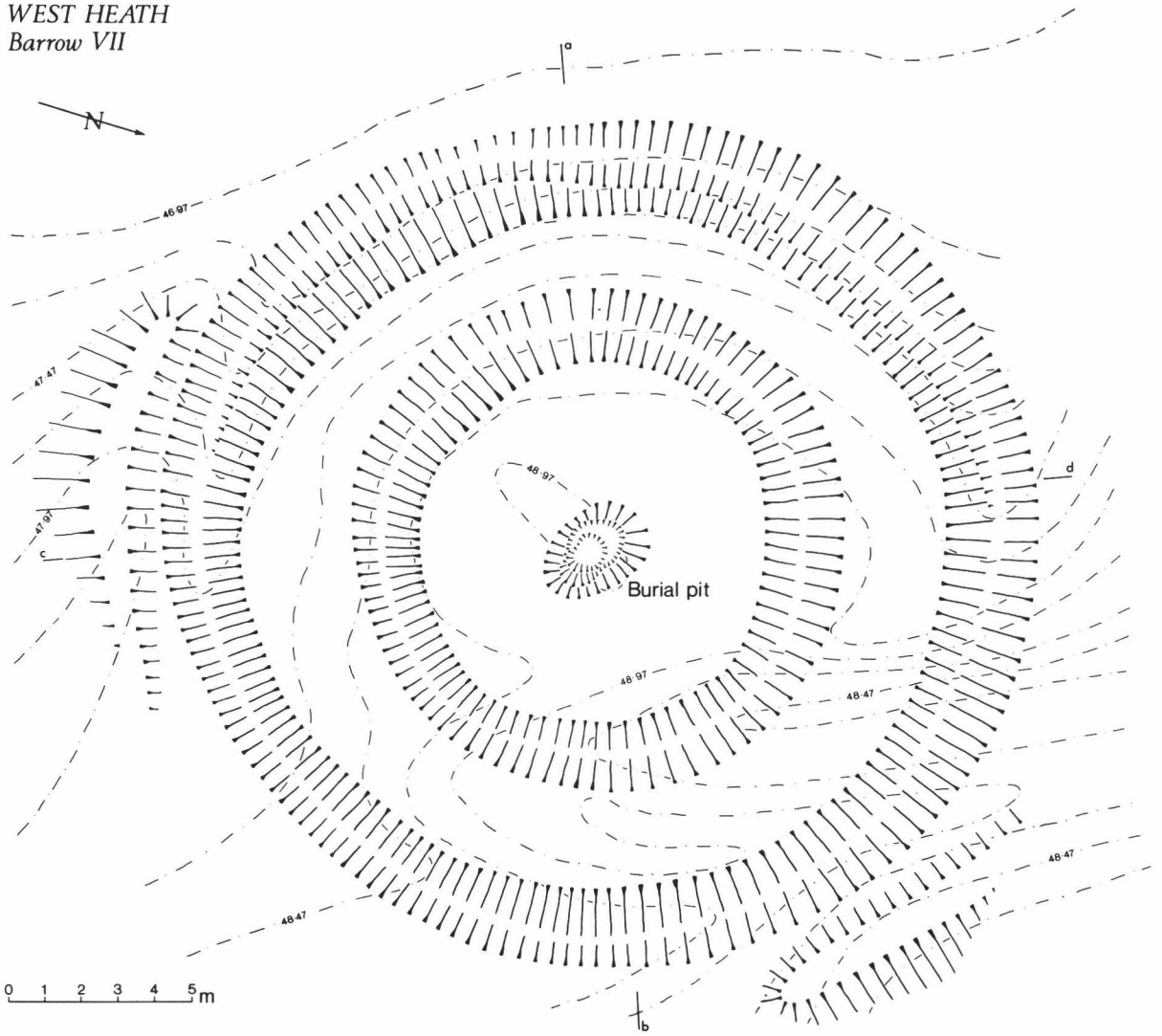

Fig. 9. West Heath, 1980. Barrow VII. Contours at 0.25-metre intervals to emphasize field bank on north-west side of barrow.

Fig. 10. West Heath, 1980. Barrow VII during excavation from the north. Scale 2 cm. (Photo. P. L. Drewett)

Barrow VIII (Figs. 14–16)

Barrow VIII consisted of a simple mound of turf 12 metres in diameter and 1.7 metres high. Slightly off-centre were two patches of oak charcoal (microfiche, pp. 37–8). Pollen analysis suggests that the barrow was constructed in an area dominated by hazel scrub with a ground flora of heather (see below, Palynological Analyses). The turves used to construct the barrow indicate a vegetation essentially similar to the buried land surface but with some evidence of hornbeam and holly.

Phosphate analysis was undertaken on the old land surface in an attempt to locate possible burial areas, but no significant concentrations were located (microfiche, pp. 42–3).

As with Barrow VII, the flint assemblage indicates some rough core preparation (indicated by 25 cores and 201 waste flakes) but also a residual Mesolithic element including blades and a microlith (microfiche, pp. 4–13).

Barrow IX (Figs. 17–19)

Like Barrow V, this barrow was extensively disturbed by root and rabbit action. The surviving extent of the turf stack as shown on Fig. 17 is likely to be much smaller than originally constructed. In its surviving state the barrow was only some nine metres in diameter and one metre high. As with Barrow VIII the mound was constructed on heathland dominated by hazel scrub and a ground flora of heather. The turf of the mound contains similar pollen, but in addition pollen of ribwort plantain, buttercup, dock, spurrey, *Gramineae* and cereal-type pollen (see below, Palynological Analyses). This

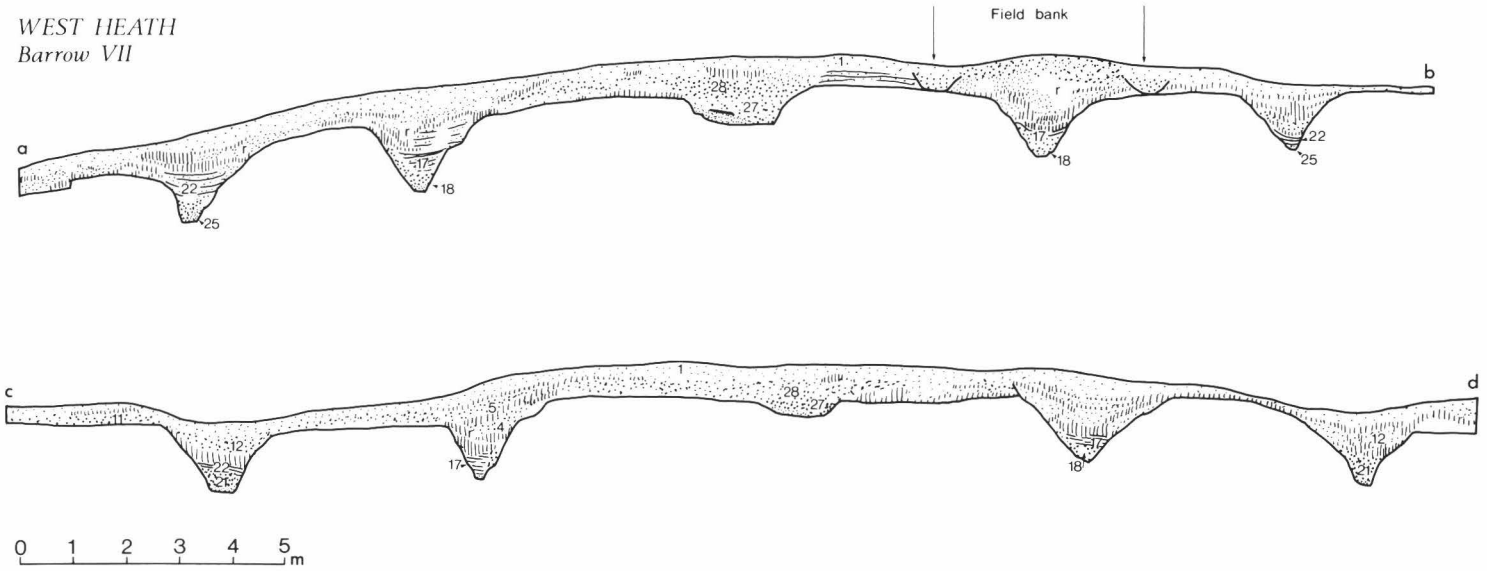

Fig. 11. West Heath, 1980. Barrow VII sections. Key: 1, dark grey sand with shattered flints; 4, light brown loose sand; 5, hard compact banded black/dark brown sand; 12, hard black sand; 17, greyish-yellow coarse sand with flints; 18, mottled yellow-brown sandy clay; 21, similar to 18; 22, similar to 17; 25, compact grey/brown sand; 27, loose yellowish-grey sand with flints; 28, dark grey sand.

Fig. 12. West Heath, 1980. Barrow VII from the north. Scale 2 metres. (Photo. P. L. Drewett)

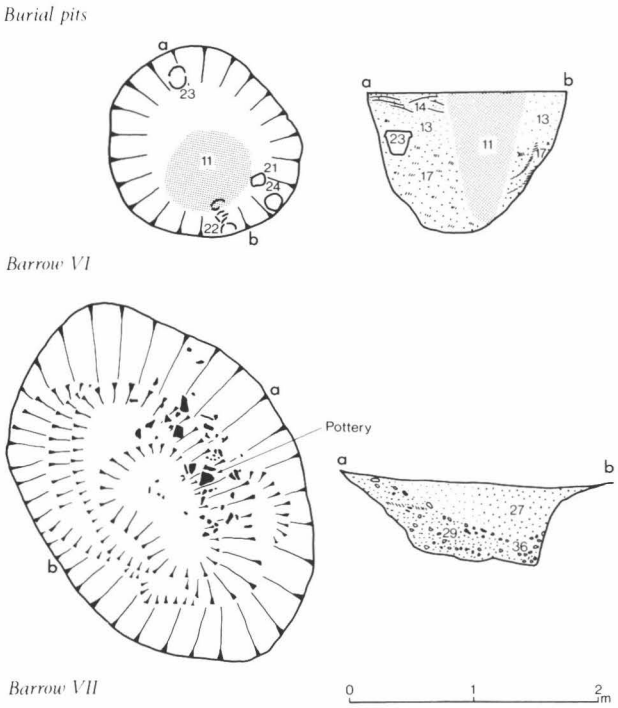

Fig. 13. West Heath, 1980. Burial pits under Barrows VI and VII.

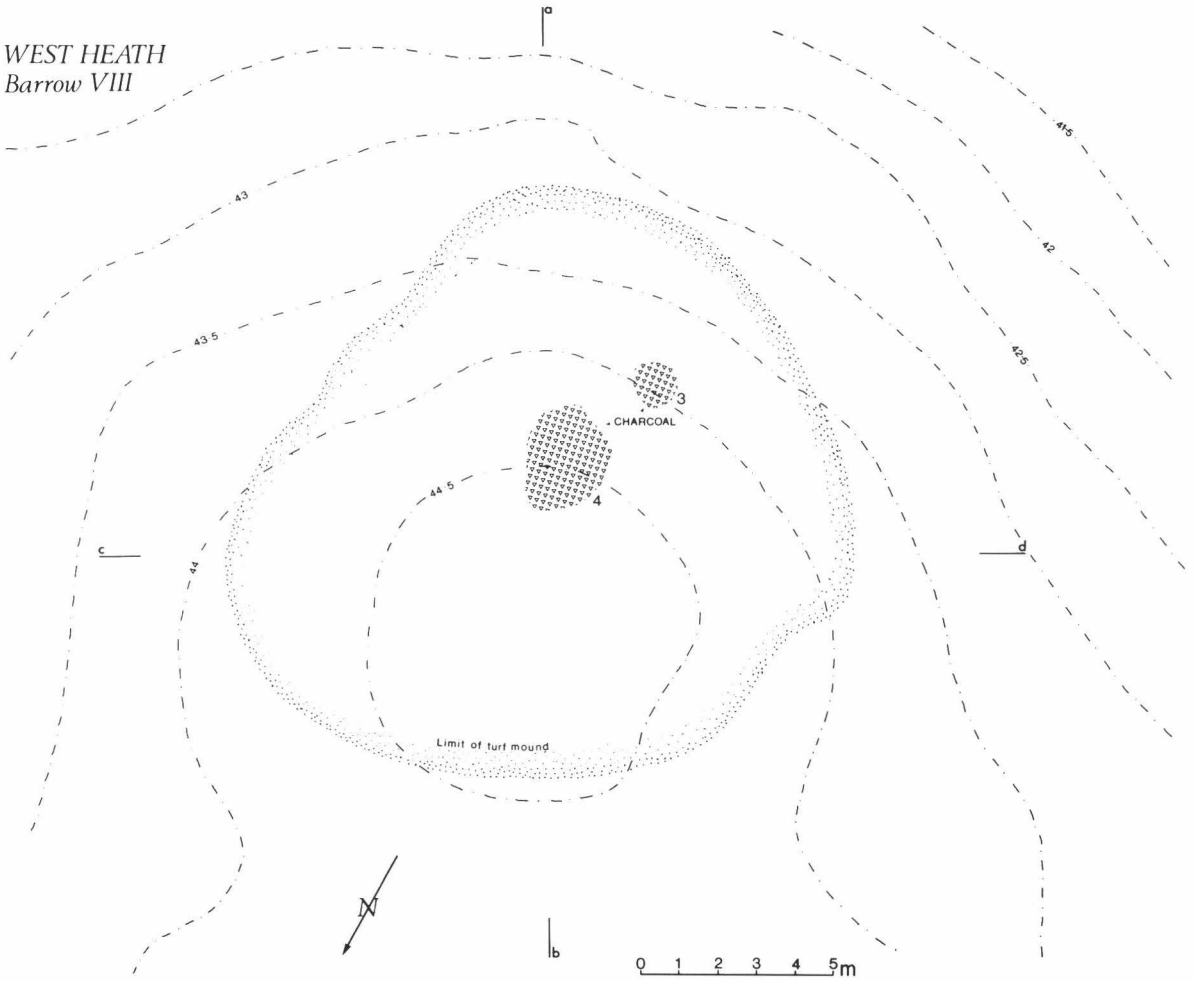

Fig. 14. West Heath, 1980. Barrow VIII. Contours at 0.5-metre intervals.

Fig. 15. West Heath, 1980. Barrow VIII. Turf stack from the west. Scale 2 metres. (Photo. P. L. Drewett)

may indicate turf being brought up from the wetter valley floor to the south of Barrow IX. This is the most likely area for agricultural activities and even settlement.

A patch of charcoal in the base of Context 3 consisted wholly of oak (mircrofiche, pp. 37–8). Phosphate analysis again proved inconclusive (microfiche, pp. 42–3) and only ten pieces of struck flint were found (microfiche, pp. 4–13).

The Field Banks

A series of field banks divide West Heath into large, irregular blocks. As one bank clearly cuts through Barrow VII (Drewett 1976, fig. 2) and was constructed over its filled-in ditch (Fig. 11), it may be assumed that they are considerably later than the barrow cemetery. Three areas of these banks have now been excavated. In 1974 a section was cut through the bank between Barrows II and III, while in 1980 the bank cutting through Barrow VII was totally excavated. In addition the small mound to the east of Barrow IV was excavated in 1980 (Drewett 1976, fig. 2) and found to be the surviving corner of a field bank. This bank had clear turf revetment on one side and contained the only artefactual evidence, in the form of a sherd from a late medieval sagging-based cooking pot (microfiche, pp. 2–3). This, together with cereals and weeds of agriculture and pasture located in the pollen under the 1974 bank section, suggests some late medieval activity on West Heath. Mr. F. Aldsworth has attempted to follow up the suggestion put forward in the first report that these enclosures may date to the enclosure award of 1632 (Drewett 1976, 136). The earliest map he has found indicating

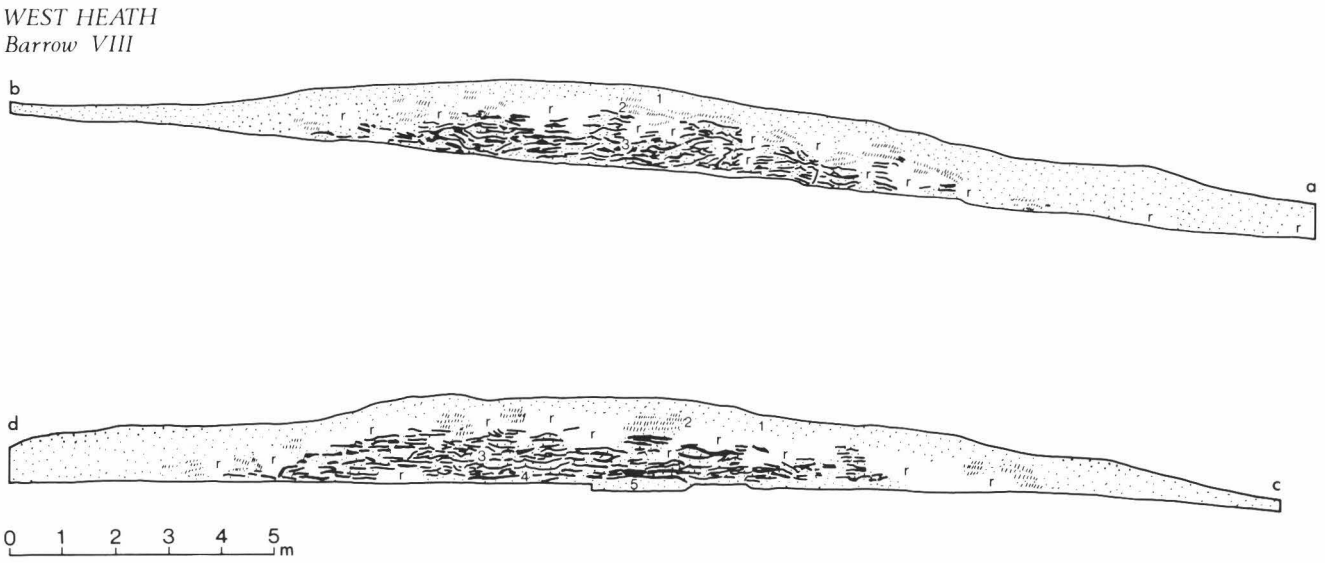

Fig. 16. West Heath, 1980. Barrow VIII sections. Key: 1, loose dark brown sand; 2, brownish-yellow mottled sand; 3, white sand with black rectangles (turf stack); 4, compact black sand (buried land surface); 5, fine white sand.

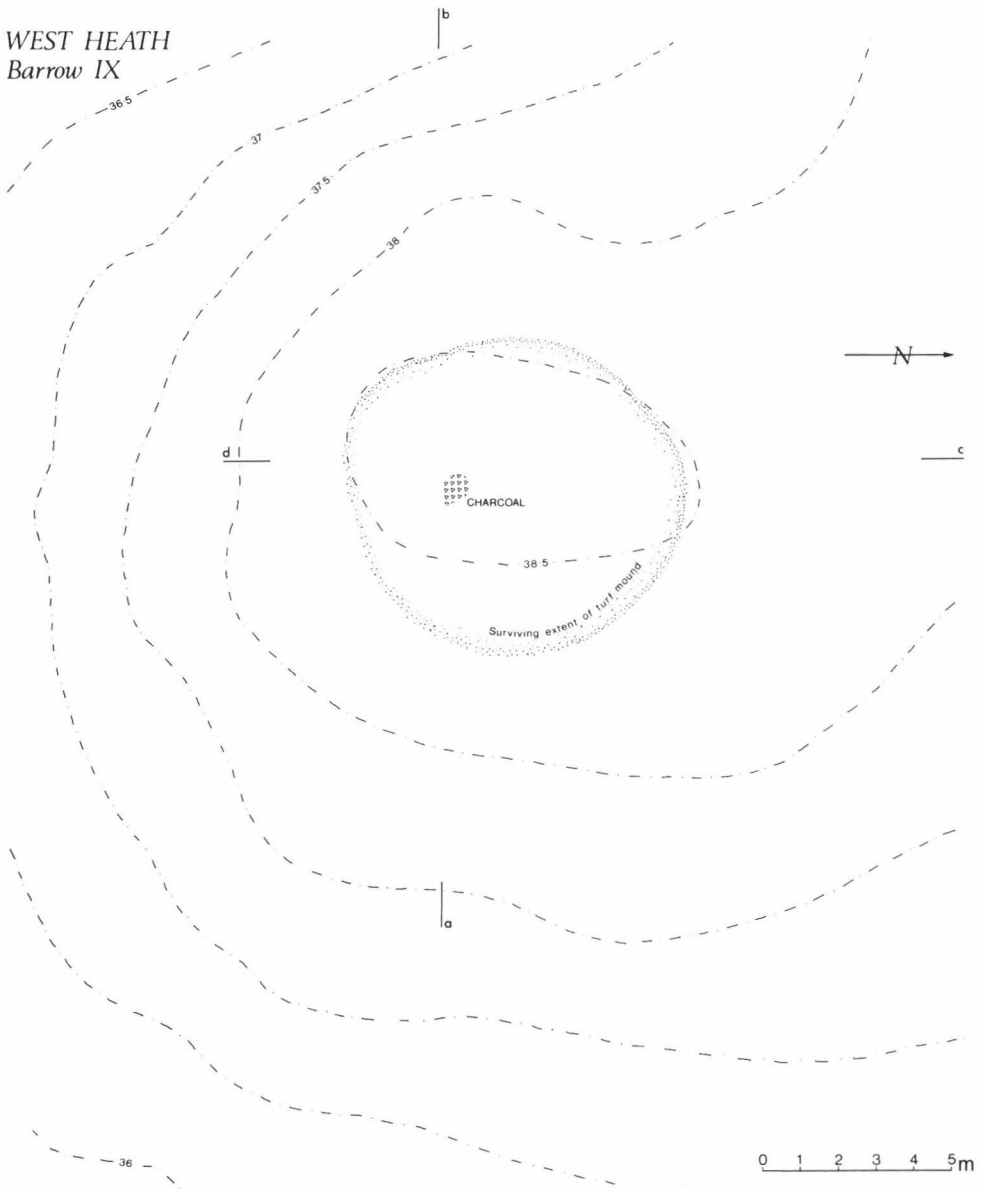

Fig. 17. West Heath, 1980. Barrow IX. Contours at 0.5-metre intervals.

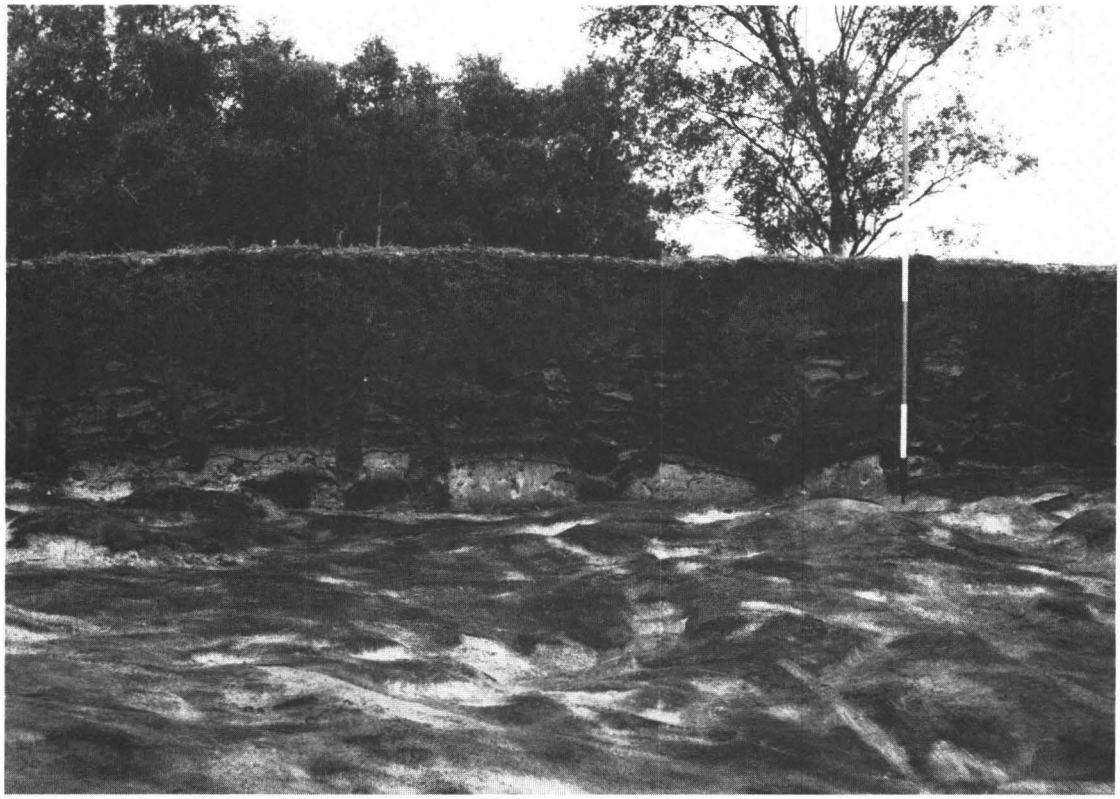

Fig. 18. West Heath, 1980. Barrow IX from the south-west. Scale 2 metres. (Photo. P. L. Drewett)

enclosure is, however, the first edition of the Ordnance Survey 1-in. map (1813). Earlier maps, like Gardner's of 1795, show West Heath unenclosed (microfiche, p. 44).

PALYNOLOGICAL ANALYSES OF WEST HEATH BARROWS V, VIII, IX (by R. Scaife)

Samples for pollen analysis were taken from Barrows V, VIII and IX spanning the sub-barrow soil, the old land surface (O.L.S.) and into the turf stacks forming the barrows' construction. The unconsolidated white sands of the Ea horizons (Macphail 1981) were sampled contiguously at 2-cm. intervals. The more organic *in situ* Ah horizons were sampled at closer (1-cm.) intervals to provide greater resolution of vegetation changes occurring just prior to burial of the old land surface by construction of the barrows. Standard techniques were used for concentrating the sub-fossil pollen and spores (Faegri & Iversen 1974; Moore & Webb 1978). Measurement of the absolute pollen frequencies (A.P.F.) was carried out using the addition of known numbers of an exotic pollen type (*Garrya elliptica*) to a known sample weight at the start of the preparation. A pollen sum of 500 grains at each level (excluding spores) was counted for Barrow VIII and 400 grains each for Barrows V and IX. These are average totals for, depending on the absolute pollen frequencies and the extreme dominance of some pollen taxa, the resulting sum ranged from 200 to 1,100 grains. These counts have been expressed as a percentage of total pollen (T.P.) and are represented graphically in pollen diagrams (Figs. 20–2). Findings of these analyses are discussed individually.

Barrow V

In the palynological analysis of this barrow certain problems have become apparent, making interpretations less straightforward than with the ensuing two barrows described. Samples were taken throughout the soil profile from the top of the Bhs into the second turf of the barrow's construction. To aid description of the apparent changes, seven zones from 1 at the base (40 cm.) upwards to 7 in the turf stack at 0 cm. have been recognized (Fig. 20). These are characterized as follows:

Zone 1: Absolute pollen frequencies are relatively high in the upper part of the Bhs reaching 250,000 grains per gram. Because this is the upper part of the Bhs zone and the constituent pollen types are similar to those in the overlying Ea profile, the junction between Zone 1 and 2 at 36 cm. is not thought to represent an old land surface. A period of some partial clearance or opening of the forest is indicated by the presence of *Calluna* (ling), *Erica* (heather), *Gramineae* (grasses) and *Pteridium* (bracken). The dominant vegetation

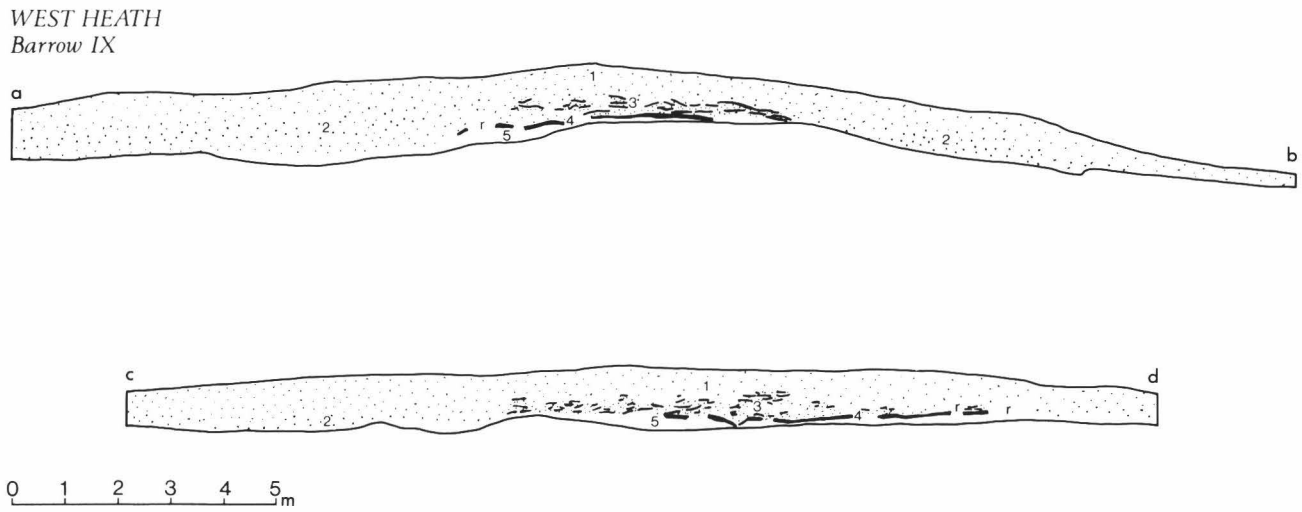

Fig. 19. West Heath, 1980. Barrow IX sections. Key: 1, dark grey loose sand; 2, coarse grey sand; 3, black, grey and white sand (turf stack); 4, compact black sand (buried land surface); 5, loose white sand.

at this site during this period was *Corylus* (hazel) with deciduous woodland at farther distance composed of *Quercus* (oak), *Tilia* (lime), *Ulmus* (elm) and *Betula* (birch). The latter is more frequent in this pollen profile than in Barrows VIII and IX.

Zones 2–4: These are the unconsolidated sands of the podzolic Ea horizon. Within this section of the soil profile, a number of anomalies occur. At 28–30 cm. (Zone 3) there are high absolute pollen frequencies of up to 415,000 grains per gram. This feature may be viewed as either a standstill horizon or buried soil whose original soil morphology has subsequently been obscured by podzolization. Alternatively it may be due to the presence of organic matter laminations containing higher numbers of pollen (Macphail 1981). The latter is likely because no apparent major pollen discontinuities or changes occur across this zone. At 22 cm. there is evidence for soil truncation. Below this level absolute pollen frequencies are higher (207,000 grains per gram), with the vegetation dominated by *Corylus* (hazel) with other woodland elements present including *Betula, Quercus, Tilia, Fraxinus* (ash) and *Alnus* (alder). The latter is likely to have derived from alder Carr woodland in adjacent wetter valley bottoms. In addition to *Corylus, Calluna* percentages are higher and in response *Hedera* (ivy), *Betula* and *Quercus* are reduced. Should this truncation be a 'real feature' the levels below 22 cm. may be of Mesolithic date.

Zone 5: Here the character of the pollen spectrum changes markedly for one level at 14–16 cm. *Quercus* (26% T.P.) and *Allium* (ramsons—32% T.P.) are dominant with *Calluna* remaining important. This therefore indicates mature oak woodland with a ground flora dominated by *Allium* such as is found in southern England today. Two hypotheses may be suggested to explain this anomaly. Firstly, there is the possibility of contamination by the movement of pollen down the soil profile in root hollows. Secondly, it can be seen that the level immediately underlying this pollen spectrum has low absolute pollen frequencies. It is possible that a phase of truncation caused the removal of humic Ah horizons with consequent destruction of pollen near the surface. The soils of Zone 5 may have been derived from elsewhere through natural or anthropogenic processes. This second hypothesis is substantiated by the presence of a peak of *Allium* pollen at 10–12 cm. in the turf stack and by the anomalously high iron content of the soil at this level (Macphail 1981). Contemporaneous soil material of this unusual character was therefore used in the construction of the barrow and is reflected in the inverted barrow turf sequence at 10–12 cm.

Zone 6: This is an Ah horizon of compact, highly humic character with absolute pollen frequencies of up to 350,000 grains per gram. In view of the above discussion, it is likely that the truncation of the *in situ* soil is overlain by an inverted turf such that A.P.F. values, being inverted, decline upwards from 14 cm. Although not *in situ* the pollen is therefore representative of vegetation prior to the barrow's construction. The vegetation, as in the other Ah horizons, is one of *Calluna* heath associated with dominant *Corylus* scrub. Other pollen taxa associated with a heathland ecology include *Ulex* (gorse), *Potentilla* (cinquefoil), *Rubus* (bramble), Gramineae (grasses) and spores of *Pteridium*. The inverted Ea of this turf is of similar character to the *in situ* profile discussed above, with the presence of *Allium* and *Hedera,* but with less *Quercus.*

Barrow VIII

Fig. 21 represents the results of the analysis of samples taken from the base of the Ea horizon though the *in situ* Ah and into Turf 4 of the barrow's structure. For discussion purposes the principal changes in the soil pollen diagram have been zoned from the base (Zone 1) at 40 cm. upwards into the turf stack from 24 cm. to 0 cm.

Zone 1: Below this zone pollen frequencies were too low to enable adequate counts of pollen to be made. It is likely that the pollen below this section of the profile has been lost because as Macphail (1981) has suggested, there is a 'flush zone' above the iron pan. Although pollen frequencies were low, there is a marked difference between this and the subsequent zone. Percentages of *Corylus* pollen are high, attaining 60% T.P., with *Quercus, Tilia* with some *Betula,* and *Ulmus* also present. Pollen of *Calluna* and Gramineae and *Pteridium* spores may be indicative of the initial clearance of the natural forest and early soil degradation causing some soil acidification and therefore pollen preservation. Few herbaceous taxa are represented and it seems likely that this early phase was one of limited spatial extent, with *Corylus* becoming dominant as colonizing scrub.

Zone 2: The significant changes in taxa at 37 cm. (Zone 1/2) is evidence for the truncation of soils represented by Zone 1. The most evident changes are the sharply rising values of *Tilia* (54%) and *Hedera* (75%), whilst those of *Corylus* and other arboreal elements decline.

Zone 3: A hiatus at 29 cm. between Zones 2 and 3 is indicated by stepped curves of *Alnus, Corylus, Hedera,* and *Calluna* and by slightly higher pollen frequencies in the upper level of Zone 2. This zone spans the immediate pre-barrow *in situ* soil consisting of the Ea and Ah horizons. Characteristically, absolute pollen frequencies rise sharply into the Ah horizon at the old land surface (27 cm.). Vegetation remained dominated by *Corylus* scrub or woodland within a background of other deciduous elements, with evidence of *Calluna* heath on site. *Calluna* frequencies are lower than might be expected for pure Callunetum and its presence as a ground flora to open *Corylus* scrub is more likely.

Zone 4: The turves lying above the *in situ* Ah at 24 cm. are presumed to be coeval with the Bronze Age soils underlying the barrow, but which were taken from areas surrounding the barrow's site. These turves, therefore, provide further evidence for the local vegetation of the West Heath area. Four turves are represented in the analysis, all of which appear to be inverted and separated by the white sands of the Ea horizon. The Ah horizons have high absolute pollen frequencies due to their greater organic content and compaction. The character of the vegetation as indicated from these turves is essentially similar to that seen in the *in situ* profile. Minor differences that can be noted are slightly more dominant *Calluna* in Turves 3 and 4 and the sporadic occurrences of *Carpinus* (hornbeam) and *Ilex* (holly) pollen within these turves.

Barrow IX

Fig. 22 shows a sequence of pollen samples extending from the top of the *in situ* Ea, and mor humus (Ah) horizons into Turf 1 which was placed inverted directly upon the old land surface. As in the barrows already described, the pollen diagram may be considered as two separate and contemporaneous sequences of vegetation development. Absolute pollen frequencies rise sharply in the Ah horizons of the old land surface reaching frequencies of up to 520,000 grains per gram. This diagram is therefore described in two sections:

(a) the *in situ* profile: the podzolic nature of the soil and the presence of *Calluna* (20%) and *Erica* (5%) pollen show the presence of heathland. As in previous barrows, *Corylus* frequencies are high (55%), being indicative of extensive *Corylus* scrub on the site. *Hedera,* as in Barrows V and VIII, is important (up to 50% T.P.). Whether this is natural

Fig. 20. West Heath, 1980. Barrow V pollen diagram.

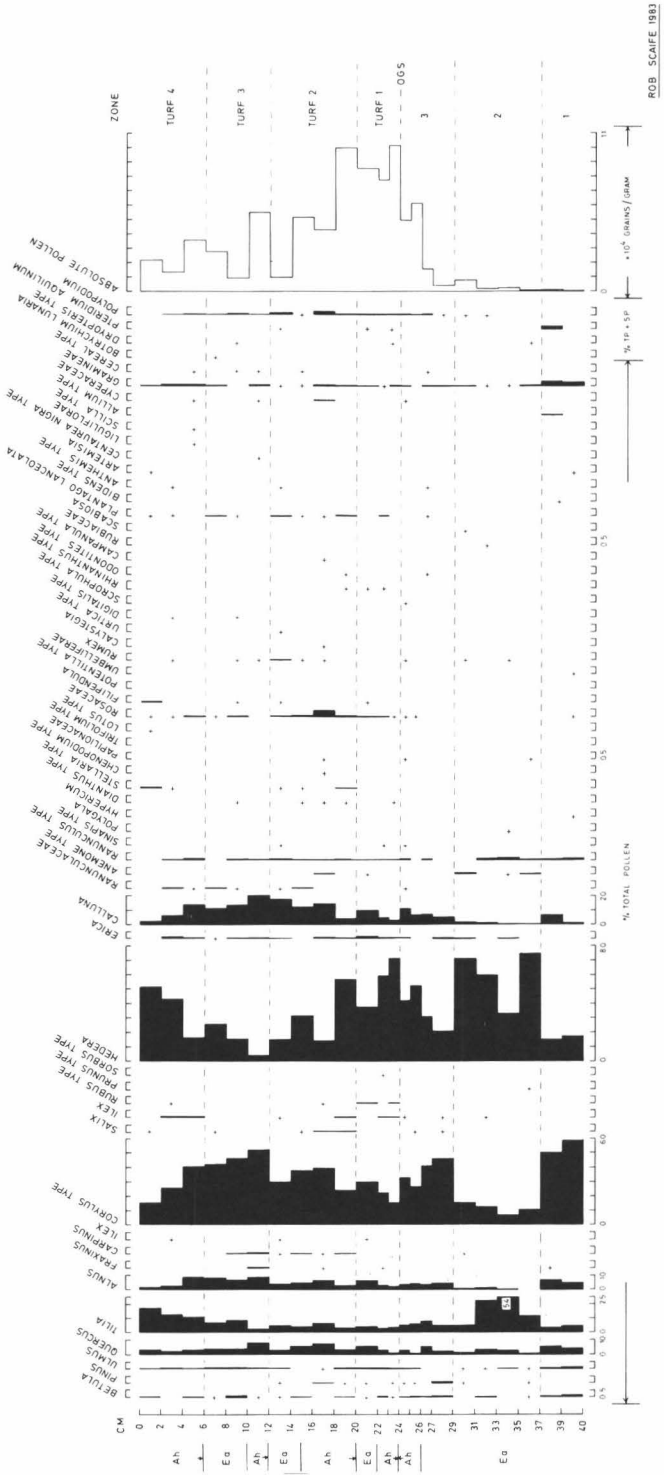

Fig. 21. West Heath, 1980. Barrow VIII pollen diagram.

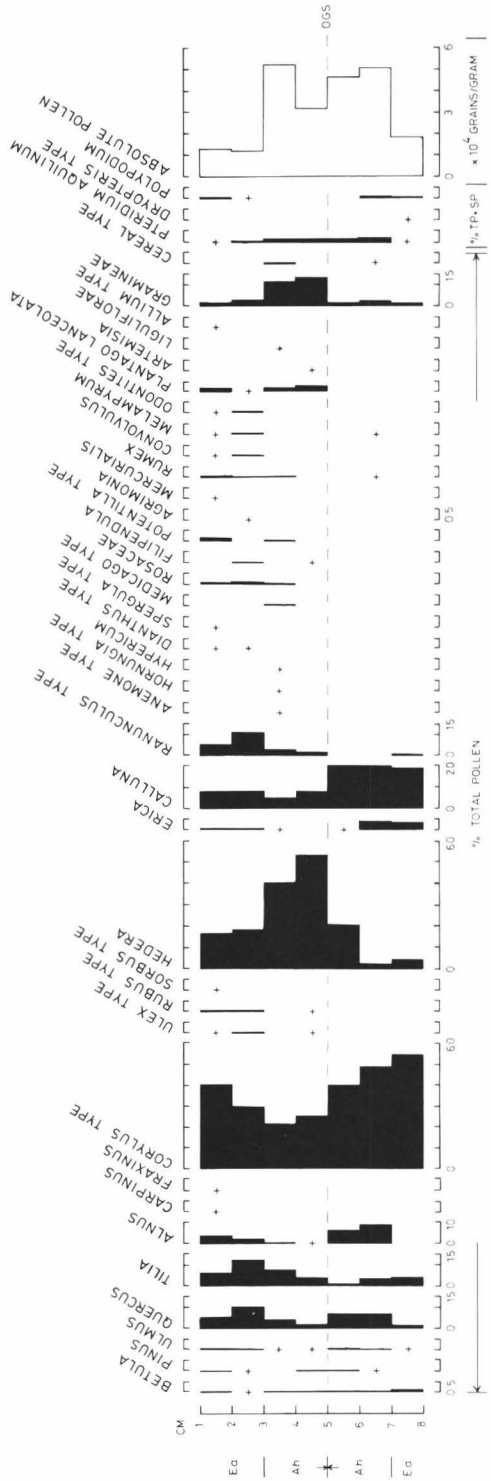

Fig. 22. West Heath, 1980. Barrow IX pollen diagram.

growth or due directly to man is discussed below. However, unlike the previous analyses, *Hedera* percentages are at their maximum at the old land surface and are therefore of early to middle Bronze Age date. In consequence, the high pollen percentages of *Corylus* in the Ea horizon are depressed although its actual abundance possibly remained the same. (b) the inverted turf: the principal characteristics of the above descriptions are present in the inverted sequence. Minor but significant differences between the two can be seen. Pollen of herbaceous taxa are more clearly represented with occurrence of *Plantago lanceolata* (ribwort plantain), *Ranunculus* (buttercup), *Rumex* (dock), *Rosaceae* spp., *Spergula* type (spurrey), Gramineae and cereal-type pollen.

As shown for Barrows V and VIII, the environment in which this barrow was constructed was apparently within an area of *Corylus* scrub surrounded by woodland. This barrow has higher numbers of *Calluna* than at Barrows V and VIII. Whilst *Corylus* scrub must have been important, the slightly higher *Calluna* percentages may indicate a locally more dominant patch of heathland. The overlying turf was evidently taken from an area which was closer or adjacent to an area where agriculture may have been practised. Assuming that the turf was not transported for any great distance, and considering the low percentages of those agricultural taxa, it is likely that such agricultural activity was of only limited extent.

Discussion

The three pollen profiles presented here are taken from barrows contained within a cemetery comprising eleven barrows. Pollen analyses of Barrows I–IV and from below a medieval bank were published by Baigent (1976). Certain problems have become apparent relating to the pollen profile from Barrow I and discussion of these can be found in archival records and by consultation with the present author. Comparative pollen analyses from other Bronze Age barrows within the region include those of Moor Green, Hampshire (Ashbee & Dimbleby 1976), Minsted near Iping, Sussex (Dimbleby 1973), Trotton Common (Keatinge unpublished) and Ascot, Berkshire (Bradley & Keith-Lucas

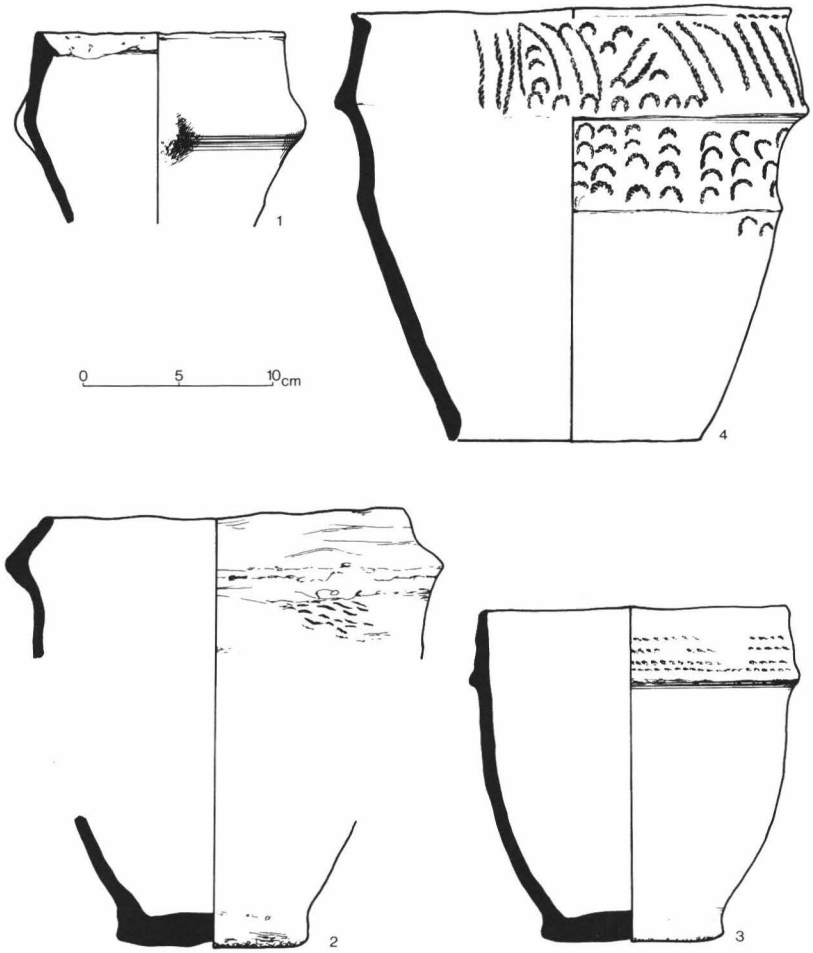

Fig. 23. West Heath, 1980. Collared and other urns.

1975). Dimbleby (1962) has also contributed much to the understanding of the development of heathland through the application of pollen analysis to soils.

From the interpretation of the pollen diagrams (Figs. 20–2) and from the earlier analyses of Baigent a view of the changing ecological character of West Heath can be outlined. Initially, the natural vegetation cover during the Atlantic period (not represented in the soil profile or pollen spectra) is likely to have been deciduous forest on sandy brown earth soils. These soils occurring under mixed oak woodland (Quercetum mixtum) or possibly under stands of *Tilia*, would certainly have been subject to faunal (especially earthworm) mixing, and have a pH and nature not conducive to pollen preservation. Early anthropogenic activity, possibly corresponding with the Mesolithic artefactual material and a C14 dated hearth at West Heath (Drewett 1976) resulted in the opening up of the forest, subsequent soil acidification and extension of acidophilous ericaceous heathland. *Corylus* woodland or scrub became an important colonizer in the area. Soil acidification allowed the preservation and to some extent stratification of pollen in the Zones 1 of Barrows V and VIII in the top of the Bh and base of the Ea horizons. In the Ea horizons of Barrows V and VIII there is evidence for possible truncation of the soils, on a number of occasions during the late Mesolithic or Neolithic. The vegetation of this early anthropogenic phase was forest consisting of *Quercus, Tilia, Ulmus* and *Fraxinus*. Clearings were present which contained abundant *Corylus* and possibly *Betula* scrub with patches of pure heathland or *Erica* and *Calluna* as a ground flora to the woodland of open aspect.

It is evident from the analysis of the pollen diagrams and from Dr. Macphail's pedological work that a number of periods/phases of soil truncation may have taken place. It is suggested here that a major hiatus may be present with early to middle Bronze Age soil formation being superimposed on

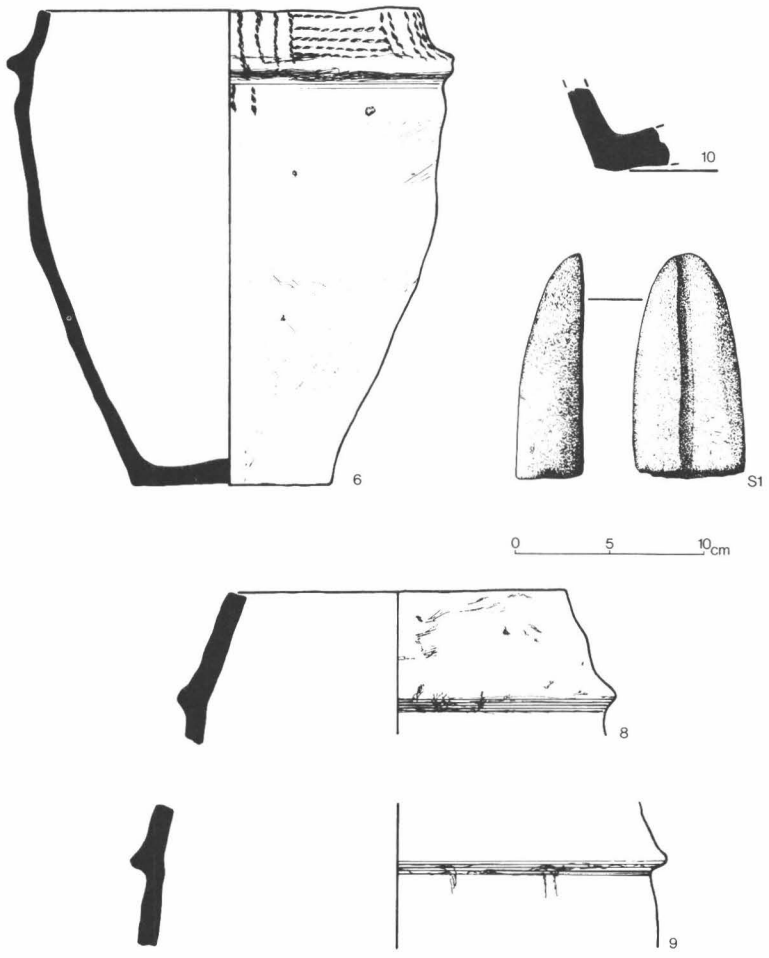

Fig. 24. West Heath, 1980. Collared urns and sandstone sharpening-stone.

the earliest periods of soil acidification and vegetation described. The soil formation and its contained pollen, represented in zones *in situ* at the old land surface and in the humic turves, which is presumed to be coeval with or just to pre-date the construction, is again one of open woodland with clearings in which ericaceous shrub communities were the dominant ground flora. The matrix of arboreal vegetation surrounding the site comprised *Quercus, Tilia* and *Corylus* with some *Fraxinus, Ulmus,* and *Betula. Alnus* is present throughout the pollen sequences and may be representative of Carr woodland (Alnetum) in the wetter valley bottoms adjacent to the site.

Tilia and *Hedera* have poor pollen dispersion characteristics due to their entomophily and are therefore usually poorly represented in pollen spectra. The presence of these taxa, often in relatively high frequencies (*Tilia* in Barrow VIII, for example), indicates that these genera must have been dominant elements in the local vegetation. In the three pollen diagrams presented here and in those of Baigent (1976) percentages of *Hedera* pollen are high. This is especially so in the lower sections of the soil profiles of Barrows V and VIII which may correspond to the Mesolithic period. These high pollen frequencies, reaching 720,000 grains per gram soil, are exceptional and not generally encountered in normal circumstances of pollen deposition. An anthropogenic cause has been invoked by Dimbleby (1976), Dimbleby & Simmons (1974) and Simmons *& al.* (1981). It has been suggested that *Hedera* might have been collected in the autumn and placed in forest clearings as fodder to attract red deer. As this taxon flowers in autumn its pollen would be liberated in higher quantities and deposited on the ground surface. Similarly, high numbers have been noted at the Mesolithic sites of Addington, Kent (Dimbleby 1963), Iping Common, Sussex (Keef *& al.* 1965), Winfrith Heath, Dorset (Dimbleby 1976) and in the Mesolithic levels of the Bronze Age barrows of West Heath (Baigent 1976) and Minsted, Sussex (Dimbleby 1973). These sites were similarly in open scrubby woodland. Natural causation might also be suggested in view of the frequency of this phenomenon. In such open woodland, with abundant light, *Hedera* could be expected to flower profusely, having a substantial number of dead and growing trees on which to establish itself. This would result in a more consistent presence of *Hedera* for longer time periods, a theory which is supported by the presence of its pollen in all zones shown including those of the Bronze Age (especially Barrow IX). Dimbleby (pers. comm.) has, however, carried out pollen sampling under modern stands of flowering *Hedera* and found that, even under its canopy, pollen percentages of this taxon are low.

Some variation occurs between the *in situ* profiles and the turves used in construction. These dissimilarities could be viewed as temporal variations resulting from barrow construction at different time intervals. Alternatively they may be minor spatial variations through turves being gathered from the local area and therefore representing minor differences in vegetation. The second hypothesis seems more plausible as the construction of Barrow IX shows the greatest difference between the *in situ* soil profile and the turf stack although both sequences are assumed to be coeval. Any differentiation between the periods of construction of these and earlier barrows excavated is not felt to be possible. Variation between the vegetation of the different profiles is likely to be a function of spatial variability of that vegetation.

THE RADIOCARBON DATES (by R. Otlet)

Eight samples were submitted to Harwell for C14 dating. Results are shown in Table 1.

Contents of Microfiche

Pottery (by P. L. Drewett) (pp. 2–3)
Flintwork (by C. R. Cartwright) (pp. 4–13)
Stone object (by P. L. Drewett) (p. 14)
Human skeletal material (by L. Wilkinson) (pp. 15–19)
Soil report: (a) soils (by R. I. Macphail) (pp. 20–9)
Soil report: (b) micromorphology (by R. I. Macphail) (pp. 30–6)
Charcoal (by C. R. Cartwright) (pp. 37–8)

TABLE 1

Context		*b.p.*	*b.c.*
Barrow VI			
2	Har-5281	3400±70	1450
7	Har-5282	3330±70	1380
15	Har-5283	3310±70	1360
17	Har-5322	3650±100	1700
20	Har-5323	4240±120	2290
21	Har-5321	3560±100	1610
22	Har-5285	4340±70	2390
Barrow VII			
29-35 (burial pit)	Har-5320	3620±100	1670

Macro plant remains (by P. Hinton) (pp. 39–41)
Phosphate analysis (by C. R. Cartwright) (pp. 42–3)
The field banks: documentary evidence (by F. G. Aldsworth) (p. 44)

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Author: Peter Drewett, Institute of Archaeology, University of London.

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