

Round Barrows at Squirrel's Cottages East Holme, Dorset

Archaeological Evaluation Report



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**ROUND BARROWS AT SQUIRREL'S COTTAGES, EAST HOLME, DORSET
ARCHAEOLOGICAL EVALUATION**

31572

Wessex Archaeology
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SUMMARY

The evaluation of two of a group of three round barrows was undertaken in order to provide adequate information for the deliberation of an application for Scheduled Monument Consent for the total excavation of the group in advance of ball clay quarrying. This was done by locating and re-excavating pits dug into their centres in the last century and by cutting single sections across each ditch. Both barrows were built of turves, capped with a relatively thin skin of sand dug from shallow surrounding ditches. They had been built on intact, untruncated old land surfaces, the soils of which were well-drained humo-ferric podzols. Pollen, abundant and well-preserved in both the old land surfaces and the turf stacks, showed that the environment in which they were constructed was already one of heathland, dominated by heathers, with hazel scrub but only a very few trees, all of them deciduous.

The two barrows investigated proved to be in good condition, surviving to at least 0.90m and 0.70m respectively above the old land surfaces preserved beneath them. Nineteenth and twentieth century excavations had removed only some 12% of their total area. Tree root penetration was more lateral than vertical and no animal burrows were observed.

ACKNOWLEDGEMENTS

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The project was managed by Roland Smith and directed in the field by Frances Healy, assisted by Rebecca Montague, Rod Brook, Jacqueline McKinley, Andrew Murray and Julie Lovell. Soils were studied by Dr Richard Macphail and pollen analysis was undertaken by Dr Rob Scaife. Soil and pollen work was co-ordinated by Mike Allen. Illustrations for this report were drawn by Julian Cross. The report was compiled by Frances Healy. Finds were recorded and the archive prepared by Rebecca Montague.

1 INTRODUCTION

1.1 Background to the Project

In 1990 English China Clays International Limited applied for planning permission for the southward extension of an existing ball clay quarry into an area which contains a group of three round barrows centred at NGR SY 9066 8528, which together comprise Dorset Scheduled Ancient Monument 698. Following discussions with English Heritage, Dorset County Council and Dr Colcutt, Scheduled Monument Consent was obtained in March 1991 for a programme of evaluation, with the provision that new ground disturbance within the scheduled area should be kept to the absolute minimum needed to assess the nature, quality and extent of surviving remains. The evaluation was to be conducted by Wessex Archaeology under the overall archaeological supervision of Mr L. Keen of Dorset County Council. The programme began with tree- and scrub-clearance followed by a contour survey (Wessex Archaeology 1991). The limited excavations described in this report were then conducted, concluding with back-filling and the laying of an interim protective covering.

1.2 Geology and Topography

Local soils are well-developed, humo-ferric podzols with incipient localised iron pan formation. They are formed on Tertiary Bagshot Beds (Arkell 1947, 216-221, 224-227) which incorporate towards their base the ball clay currently quarried to the north of the site. The uppermost part of the section exposed in the quarry face some 10m north of the barrows shows, in descending order, approximately 0.10m of raw humus, 0.10m of topsoil, 0.30m of fine, almost gravel-free pale grey-yellow sand, and 0.50m of coarser sand with much gravel, including cobbles up to 0.12m across, most of them of flint with some ironstone and other rocks. This coarser sand was marked intermittently by dark panning.

The barrows lie at approximately 25m OD, overlooking the Frome valley, on a northward-pointing spur the tip of which has now been quarried away. They stand within a coniferous plantation, the understory of which is dominated by rhododendrons with some bracken.

1.3. Nomenclature (Fig. 1)

Here, as in the report on tree-felling and contour survey (Wessex Archaeology 1991), the mounds are referred to as Barrow 1 (SY 9069 8528, Royal Commission no. 11, Austen's Barrow A), Barrow 2 (SY 9067 8529, Royal Commission no. 10, Austen's Barrow B) and Barrow 3 (SY 9064 8528, Royal Commission no. 9, Austen's Barrow C).

1.4 Previous Archaeological Investigations

Austen's 1857 excavations located 'no remains' in Barrow 1 and 'only ashes' in Barrow 2. In Barrow 3, then planted with conifers, he 'sank a shaft and at the depth of three feet came upon some small thin sand stones, such as are obtainable from the neighbourhood. The largest of these covered a cist sunk in the native sand, which contained an inverted urn wedged round with flints. It measured about a foot in height, but was much injured by the roots of the trees.

About a foot and a half south of this deposit, and one foot from the top, I found another small urn unprotected, which measured about six inches in height and the same in diameter and was of the coarsest kind of manufacture without any pattern'.

The Royal Commission on Historical Monuments (England) included the barrows in their Dorset inventory (1970, 445), recording numbers 1 and 3 as bowl barrows and number 2 as a ditched bowl barrow.

Some of the numerous unscheduled small mounds also present in the plantation were excavated at the same time as the barrows (Austen 1860). Another was excavated in 1956 by the Royal Commission: 'It was found to be built of sods piled direct on an old ground surface. There was no ditch and no internal feature of any sort. The only find, a rough flint scraper in the body of the mound, had no significance since similar artefacts can be picked up on the heath around. . . . Professor Dimbleby, then of the Commonwealth Forestry Institute, examined pollen samples from a further mound (also barren of archaeological finds) and concluded that "the raw humus was buried not later than medieval times and not earlier than the Iron Age." ' (Royal Commission on Historical Monuments (England) 1970, 481-482).

SQUIRREL'S COTTAGES

Q u a r r y

90650
+ 85300

90700
+ 85300

BARROW 2

121

116

14

BARROW 1

1

BARROW 3

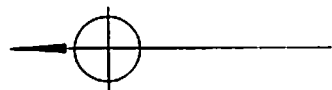


Fig. 1: Contour survey of the three barrows, showing areas investigated in Barrows 1 and 2

Two more small mounds were sectioned in 1988, in the course of an evaluation of the area by test-pitting. Both mounds were disturbed by tree stumps and roots but preserved a thin dark organic layer beneath a mottled but predominantly light grey sand up to 0.26m thick. No archaeological features or deposits were identified in the test pits (Farwell and Richards 1988).

The contour survey undertaken by Wessex Archaeology in 1991 and partly reproduced in Figure 1 showed Barrow 1 to be rounded and compact to the north and irregular, elongated and more gently sloping to the south, with an apparent transverse depression running across it from north-west to south-east. From the surface, it appeared to measure approximately 14m x 9m and to be 0.90m high, with no clear trace of a surrounding ditch. Barrow 2 was of regular, rounded form with a central depression, approximately 10m in diameter and 0.75m high, and was probably surrounded by a ditch. Barrow 3 measured approximately 12m from north to south and 10m from east to west and stood to 0.80m high, with no clear trace of a surrounding ditch. It was flat-topped, and without obvious sign of previous excavation (Wessex Archaeology 1991).

2. METHOD

2.1. Excavation

The specification originally prepared for English China Clays by Dr Colcutt (1990) provided for the excavation of a radial trench from the exterior to the centre of each barrow, preferably within its southern part, with such trenching possibly replaced in the case of Barrow 3 by the re-excavation of Austen's central pit. Modifications to the excavation strategy, based on information provided by the contour survey, were proposed by Laurence Keen at a site meeting with Roland Smith on 10 July 1991:

2.1.1. Barrow 1. Here, where previous excavation appeared to have taken the form of a transverse trench, it was decided to remove raw humus and topsoil from the south-west quadrant of the mound, clean and record the exposed surface, identify Austen's excavations, and re-excavate the apparent transverse trench and any central pit sufficiently to provide a radial section of the mound, if necessary cutting a narrow trench across *in situ* deposits in the ditch. Decisions as to the minimum of further excavation necessary if the

extent of Austen's cuttings proved insufficient were to be taken in the field.

Once the south-west quadrant was stripped it was clear that there was no transverse trench, although part of a central pit was exposed. At a site meeting on 26 July 1991 between Mr P.H. Chesterfield, Dr Simon Colcutt, Paul Gosling, Laurence Keen, Roland Smith and Dr Frances Healy Mr Gosling and Mr Keen agreed that the appropriate way to proceed in these circumstances was to extend the stripped area eastwards to expose the whole of the central pit, to re-excavate the pit, extending the cutting into *in situ* mound material if the earlier excavation did not extend to the old land surface, and to cut a section through the line of any possible ditch and into the edge of the mound. This was done. The area stripped (Fig.1: cutting 1) amounted to 53 sq m, including a trench measuring 3.20m x 1.00m cut across the ditch (Fig. 1: cutting 14).

2.1.2 Barrow 2. Here, where Austen's excavation remained visible as a central depression, Mr Keen decided that it would be appropriate to ask for the removal of raw humus and topsoil from a rectangular area on the top of the mound, clean and record the exposed surface, identify Austen's pit, re-excavate it, and record at least one of the exposed faces, cutting that face back if necessary. An additional trench was to be excavated across *in situ* deposits in the ditch and in the edge of the mound. Decisions as to the minimum of further excavation necessary if, for example, Austen's pit did not extend to the old land surface, were to be taken in the field. This procedure was followed without modification. The area stripped on the top of the mound measured 4.00m x 3.50m (Fig. 1: cutting 121), the trench across the ditch 2.80m x 1.00m (Fig. 1: cutting 116).

2.1.3. Barrow 3. Here, where no previous excavation was visible on the surface, Mr Keen decided that a decision on whether to excavate should depend on the results of investigations in Barrows 1 and 2. If excavation was thought necessary the south-west or south-east quadrant was to be stripped, as for Barrow 1. If a central pit was then identified excavation was to proceed as for Barrow 2.

At a site meeting on 9 August 1991 between Mr P.H. Chesterfield, Dr Anne Johnson of Oxford Archaeological Associates, Paul Gosling, Laurence Keen, Andrew Lawson, Roland Smith and Dr Frances Healy it was agreed by Mr Gosling and Mr Keen

that sufficient information had been obtained from investigations in Barrows 1 and 2 that, although Scheduled Monument Consent had been granted for excavation of Barrow 3, this would serve little purpose at this stage, and that back-filling of Barrows 1 and 2 should proceed. Mr Gosling and Mr Keen thought it reasonable to assume that Barrow 3 would be of a similar nature and condition to that of the other two mounds.

2.2. Soils

2.2.1. Objectives were

- i. To determine whether a buried soil was present.**
- ii. To examine the turf stacks.**
- iii. To compile a field description of the pedological evidence and to make a brief statement of its survival and significance.**
- iv. To provide an assessment of the site in relation to the non-statutory criteria for Scheduled Ancient Monuments.**

2.2.2. Sampling. Barrow make-up and buried soil profiles exposed in the re-excavated central pits of Barrows 1 and 2 were studied in the field (Hodgson 1974), and bulk samples were taken and analysed, in the first instance for pH (in water; Avery and Bascomb 1974). In the case of Barrow 1, where the central pit did not extend into the illuvial subsoil (Bh horizon pan), this horizon was examined in the east end of cutting 14, the trench cut across the ditch and into the outer edge of the mound (Fig. 3: section A-B), although the exact relationship of this horizon to the barrow and the upper buried soil was not clear.

2.3. Pollen

2.3.1. Objectives were

- i. To take a complete sequence(s) of samples for pollen analyses from suitable sections of the barrows.**
- ii. To prepare a selected few samples from the sequence(s) for pollen analysis.**
- iii. To ascertain the presence or absence of pollen and, if present, the state of preservation.**
- iv. To provide an assessment of the site in relation to the non-statutory criteria for Scheduled Ancient Monuments.**

2.3.2. Sampling. Two columns of 40g samples were taken from Barrows 1 and 2 in conjunction with the pedological description and assessment which were made at the same

time. A total of 40 contiguous samples was taken from Barrow 1 spanning the buried/old land surface and the overlying mound structure (Fig. 3:section CD, sample column 1026). Barrow 2 had a less well defined mound structure and exhibited some apparent differences in the texture of the buried soil. Consequently, 20 contiguous samples were similarly taken from this mound, spanning the buried soil and the lower part of the turf stack (Fig. 5:section HI, sample column 1029).

2.3.3. Assessment. Four samples were selected for analysis. From Barrow 1, two samples were examined, one taken from the buried Ah (sample 7) and from one of the turves in the mound structure (sample 23). From Barrow 2, two samples were examined from the buried land surface. These comprised samples 47 and 53 from the buried Ea and Ah horizons respectively.

Standard pollen extraction techniques were used in the preparation of these samples. Samples of 1-2 ml were analysed and in all four cases were found to contain abundant pollen grains and spores. Absolute pollen frequencies present are of the order of tens of thousands of pollen grains per ml.

3. RESULTS

3.1. Excavation

3.1.1. Barrow 1. Raw humus (layer 2) and the uppermost horizon of the topsoil (layer 3) were stripped from the whole of the south-west quadrant (Fig. 1: cutting 1). The lower horizon of the topsoil (layer 4) was then stripped from the surface of the mound in the northern part of the quadrant. The stumps of recently felled trees and shrubs remained in position and older, rotten stumps were also present. Both horizons of the topsoil were matted with fresh and decayed roots, and included areas of superficial burning, apparently related to previous tree-felling.

The stripped surface (Fig. 2). Once leaf litter and topsoil were removed, the mound appeared more regular in shape than it had done from the surface or in the contour survey, with the south side sloping as steeply as the north. The mound surface exposed in the northern part of the quadrant consisted of relatively gravel-free yellow-brown sand on the

summit (layer 7), and of coarser, more gravelly grey-brown sand including large cobbles of flint and occasionally other rocks such as ironstone on the flanks (layer 8). Apart from tree roots, the only clear intervention into the body of the mound was a central pit (feature 6), distinguished by the dark mottled grey-black-brown colour of its topmost fill (layer 5), which was fully exposed by the extension of the stripped area to the east.

The ditch (feature 10) was clearly visible as a band of black-brown humic sand (layer 9) around the edge of the mound. Its line approximated to an arc of a circle with an external diameter of approximately 14m rather than to the present irregular outline of the southern part of the mound (Fig. 2).

Excavation of a section across the ditch and into the outermost edge of the mound (Fig. 2: cutting 14) showed that the ditch was 1.89m wide and up to 0.55m deep, with a gently sloping, rounded profile (Fig. 3: section AB). There was no intervening berm between its inner edge and the barrow mound. The ditch had been cut through successive natural deposits of, in descending order, pale yellow-grey sand with rare flint pebbles (layer 11 to the west, beyond the barrow, layer 16 to the east beneath the edge of the mound), and coarser, horizontally-bedded yellow-grey sand with abundant flint pebbles, including large cobbles (layer 17), unevenly cemented by black iron pan which picked out part of the outline of the ditch. Beneath these two deposits was a mottled orange-grey clayey sand with occasional flint pebbles (layer 18).

The lower part of the ditch was filled with up to 0.22m of clean, light grey-brown sand (layer 15). This was overlain by up to 0.34m of the black-brown humic sand visible in the stripped surface (layer 9), in the lower, central part of which were some large cobbles. This deposit was continuous with the lowest layer of mound make-up visible at the east end of the section, where it underlay the coarse, gravelly sand which covered the flanks of the mound (layer 8).

The central pit (Fig. 2: feature 6) measured 2.60m x 1.70m at the stripped surface, tapering to 1.46m x 1.00m at its base. It was 1.00m deep below the stripped surface, extending through the entire mound to the underlying natural sand (layer 19), without cutting into it. The pit was filled with mottled, variegated dark grey-black-brown sandy material, with many roots, both fresh and rotten, and some flint pebbles (layer 5).

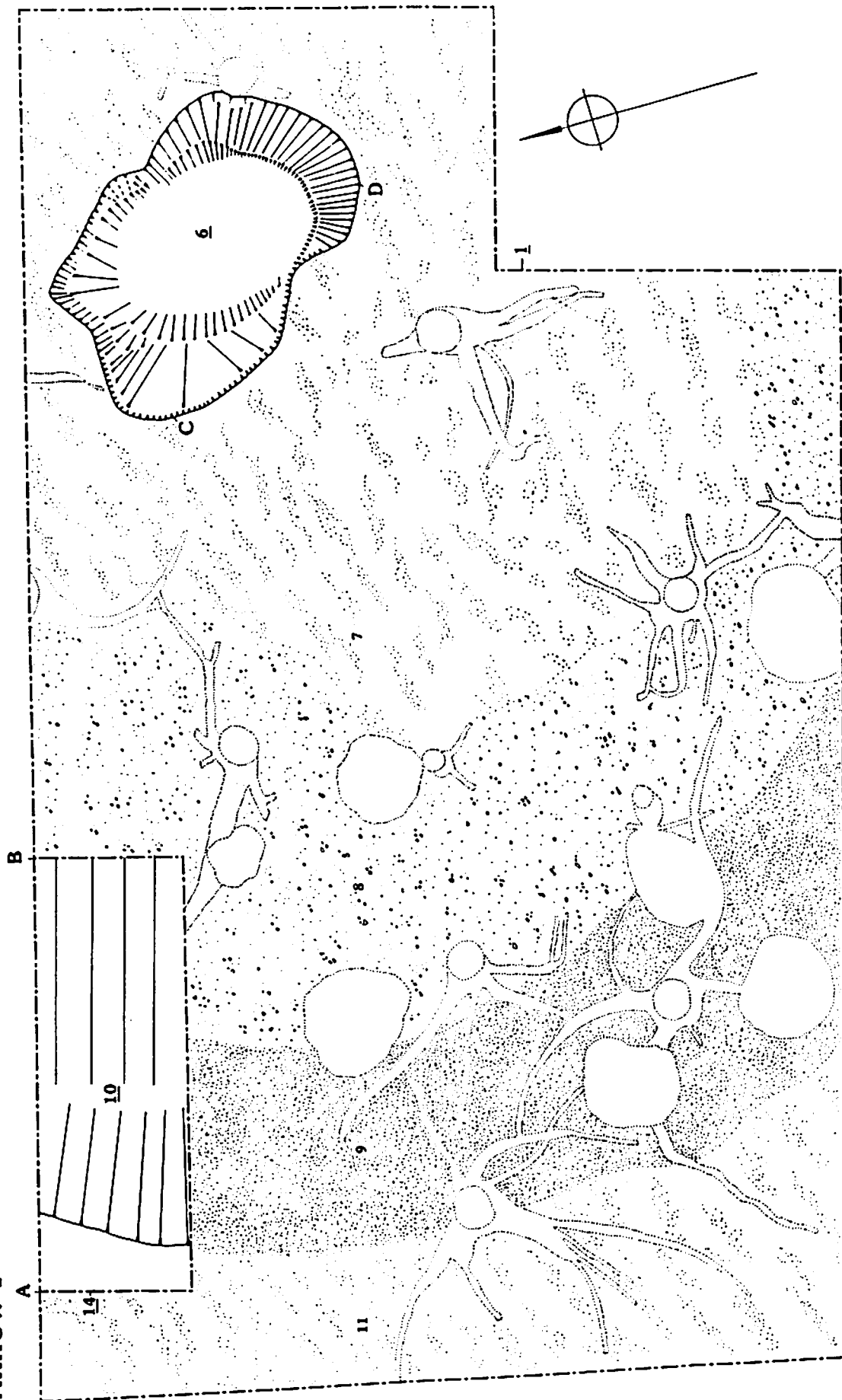
The surface of the natural sand at the base of the pit (layer 19) was 0.25m higher than that of the natural sand beyond the outer edge of the ditch (layer 16) and 0.15m higher than the modern land surface beyond the barrow. Above it, the body of the mound was exposed in the sides of the pit (Fig. 3: section CD). It consisted of up to 0.90m of compact dark silty sand within which turves could be distinguished by their dark, organic surfaces and light grey sandy undersides (layer 13). At the north-west end of the south-west face, where a change in the orientation of the turves corresponded to a change in matrix colour from dark to black to grey-brown, unaccompanied by any obvious difference in texture (Fig. 3: section CD). The stack was overlain by up to 0.20m of the relatively gravel-free yellow-brown sand which covered the summit of the mound (layer 7). Within the area available for observation, root penetration of the body of the mound and the underlying surface was slight, the spread of the main conifer roots being far more lateral than vertical.

3.1.2 Barrow 2. Raw humus (layer 101) and topsoil (layer 102) were removed from a rectangular area around the central depression visible in the summit of the mound (cutting 121) and from a trench across the probable line of the ditch at the south-west edge of the mound (cutting 116). Areas of superficial burning were present, as on Barrow 1.

The ditch (feature 115) was 2.00m wide and 0.60m deep, with a very approximate external diameter of 12m. It was similar to that of Barrow 1, with a shallow, rounded profile and no berm (Fig. 5: section EF) and had been cut through clean, mottled grey sand with rare flint pebbles (layer 117), which overlay increasingly variegated, sometimes cemented sand with clay lenses and areas of panning.

The lower part of the ditch was filled with up to 0.30m of clean, light grey-brown sand with rare flint pebbles (layer 122). This was overlain by up to 0.25m of black-brown humic sand with occasional flint pebbles and burnt flint. Large flint cobbles were concentrated at the base of the layer. This deposit was continuous with the outermost edge of the mound make-up visible at the north-east end of the section (layer 112).

BARROW 1



Tree root

Flint

Sand

Key:



W/A

Fig. 2: Barrow 1: plan of the northern part of the south-west quadrant

JC

The central pit (Fig. 4: feature 107), although apparent as a generally darker area once the topsoil was stripped, was obscured by a shallow, irregular depression, perhaps a tree hollow (feature 104), and was defined only after some 0.10m of deposit had been removed, to expose the grey-brown sand of the mound (layer 118), within which pit 107 was distinguished by its darker and more variegated fill. The pit was irregular in outline: subrectangular over the centre of the mound, with a deeper, lobate extension to the north-west. Its maximum dimensions at the level at which it was defined were 3.10m x 1.80m, with near-vertical sides tapering slightly to 2.80m x 1.20m at the base. The south edge of the extension was undercut. The central, subrectangular area was 0.85m deep below the surface of layer 118, the extension up to 1.08m deep. Unlike pit 6 in Barrow 1, pit 107 had been cut into the underlying natural sand (layer 120), by up to 0.10m in the central area, and by up to 0.38m in the extension (Fig. 5: section GHJ). The lower part of the pit was filled with loose, mottled, generally dark, grey-brown sandy material, including patches of lighter sand as well as charcoal flecks and pebbles (layer 109), the upper part with equally loose and variegated material distinguished by its browner colour (layer 108). Tip lines were visible in both.

The surface of the natural sand exposed in the sides of the pit (layer 120) was 0.20m higher than that of the natural sand beyond the outer edge of the ditch (layer 117) and 0.15m higher than the modern land surface beyond the barrow.

On the base of the undercut extension, there remained a subcircular area 1.00m in diameter and over 0.15m deep of compact grey sand with dark flecks and occasional flint pebbles (Fig. 4: layer 114). This filled the base of pit 113, most of which had been removed by the original excavation of pit 107 (Fig. 5: section GH). Once this feature was identified, the remnant of it was left unexcavated. On the base of pit 107 immediately south-east of pit 113 was an area of sandstone measuring 0.72m x 0.50m (Fig. 4). It was identical in composition to cemented areas within the natural sand exposed in cutting 115 4m to the south-west. It is unclear whether it lay where it had formed or whether it had been moved.

The mound, exposed in the sides of pit 107, was of similar construction to that of Barrow 1 (Fig. 5: section GHJ). It consisted of up to 0.60m of compact, black stone-free sand with numerous fine laminations, some of light, almost white, sand (layer 119). Turves

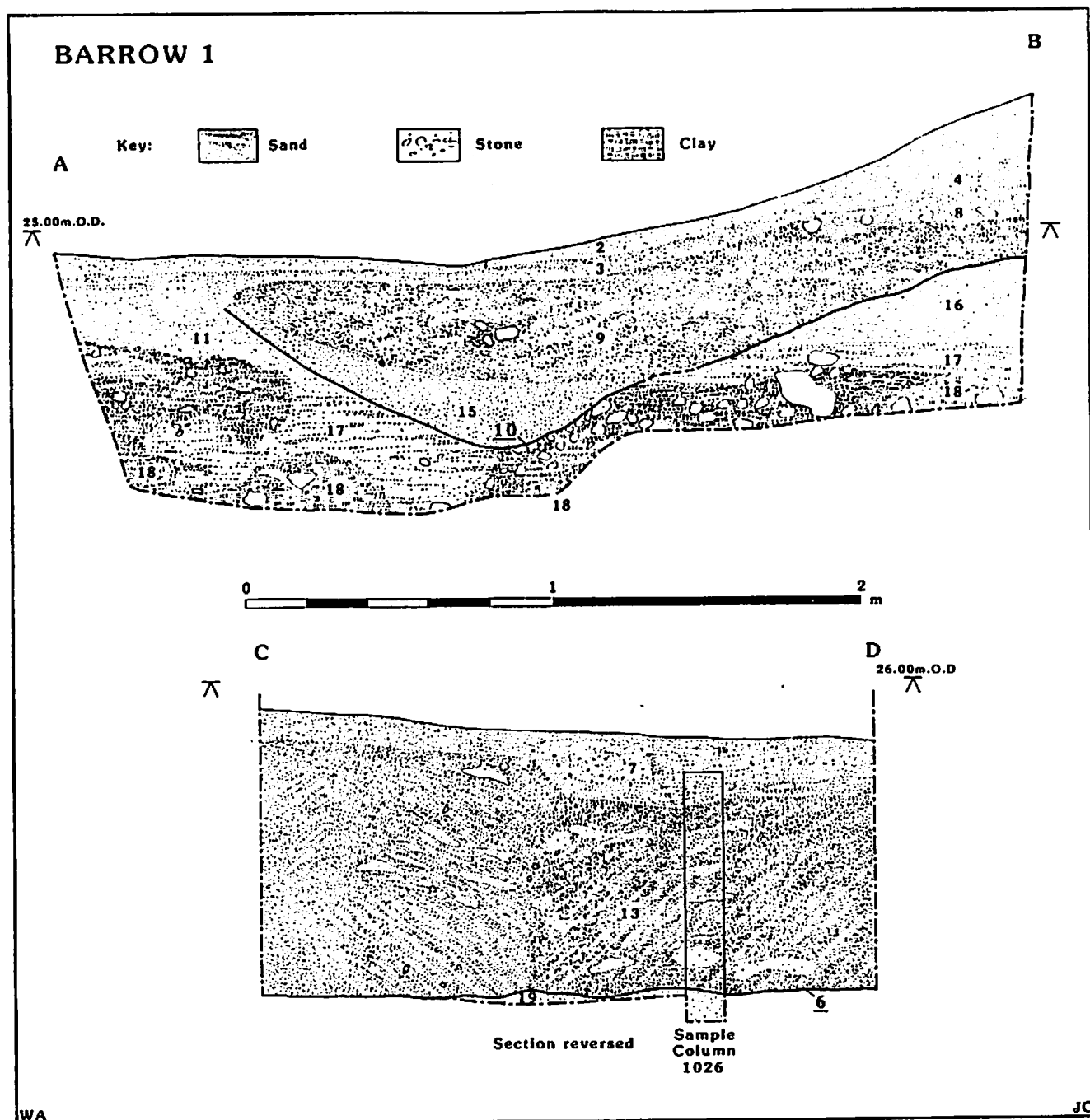


Fig. 3: Barrow 1: section across the ditch (AB); south-west face of central pit (CD)

could again be identified, although less clearly than in the mound of Barrow 1. The mound was capped by up to 0.35m of the grey-brown slightly pebbly sand (layer 118). As in Barrow 1, root penetration of the mound was largely superficial, with only a few, thin rootlets extending deep into the mound and underlying surface.

3.2 Soils

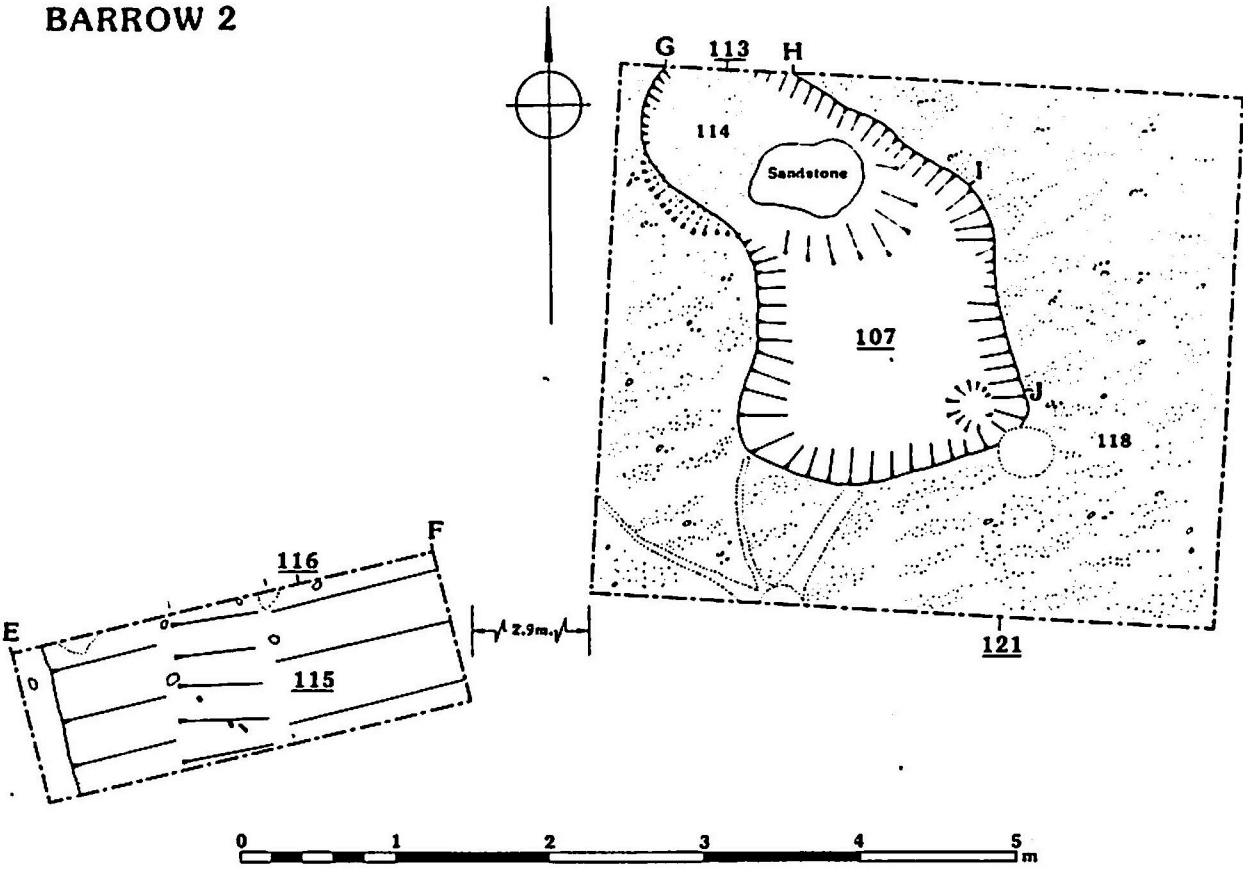
3.2.1. Description (Appendix 1). Both barrows retain identifiable turf stack cores, especially distinct in Barrow 1, and were built on intact old ground surfaces, the soils of which had not been truncated. The soils under both barrows are well-drained humo-ferric podzols (Findlay *et al.* 1983; Avery 1990).

Podzols are soils in which percolating rainwater, rendered acid by passing through a surface layer of raw humus, has dissolved (leached) humus and minerals, especially iron, from the upper (Ea) horizon of a soil profile, leaving it pale grey, sometimes almost white, in colour, and redepositing some or all of the leached material further down the soil profile in a dark-coloured illuvial (B) horizon. This typically occurs on freely-drained, sandy parent materials under heathland vegetation in humid, temperate conditions, where precipitation exceeds evaporation. Humo-ferric podzols have a Bh horizon, predominantly of re-deposited humus, and sometimes a Bs horizon of iron and aluminium enrichment. A diagram of a humo-ferric podzol is reproduced in Figure 6.

The Squirrel's Cottages podzols are unaffected by the complicated gleying effects (mottles) caused by poor drainage, which occur in many areas on the Bagshot Beds and therefore display clear podzolic horizons. Although only a few metres apart, they have differently formed illuvial B horizon morphology (Macphail 1979). The soil below Barrow 1 has a black Bh horizon, whereas a less well-developed ?Bhs/Bs illuvial horizon has formed beneath Barrow 2, where the buried soil also appears to be more acid. These differences may relate to microrelief, drainage, parent material, age or vegetation and land use history.

3.2.2. Discussion. Podzolisation on lowland heaths in Britain has taken place at a wide range of dates, triggered by the use and consequent impoverishment of already poor soils. The process thus offers evidence of the date, nature and intensity of local human activity.

BARROW 2



WA JC

Fig. 4: Barrow 2: plan of central cutting ditch section

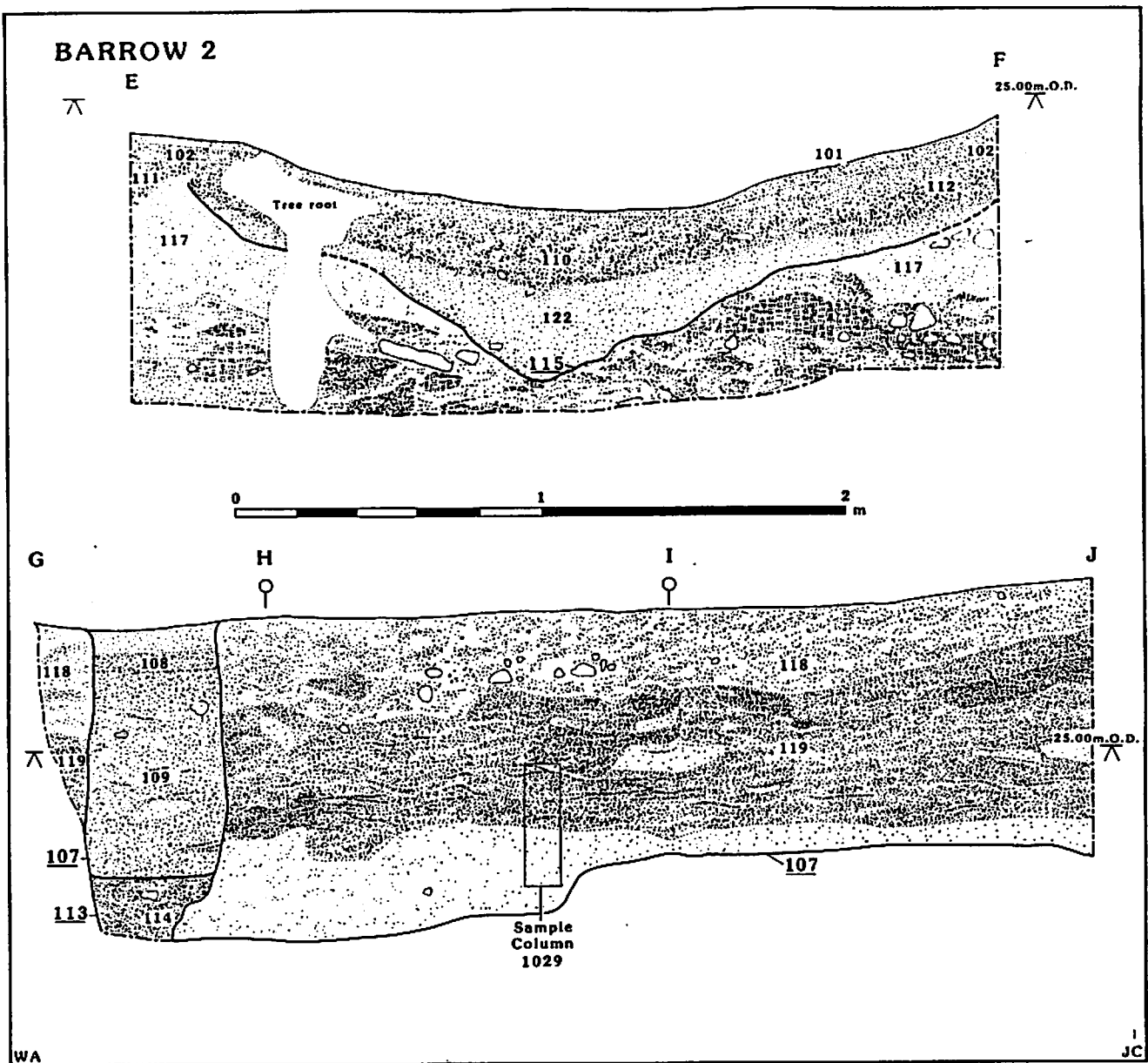


Fig. 5: Barrow 2: section across the ditch (EF), north, north-east and east faces of central pit (GHJ)

A number of Bronze Age barrows built over podzols were investigated in the 1950s and early 1960s by Dr I. Cornwall and Professor G. W. Dimbleby (Dimbleby 1962; reviewed in Scaife and Macphail 1983 and Macphail 1987). Most of the barrows concerned were in Dorset, at Chicks Hill, Black Down, Wallis Down, Canford Heath, Turners Puddle Heath and Ashley Heath, with nearby examples at Burley and Moor Green in Hampshire. More recently, a barrow on Canford Heath proved to have been built over a podzol which had formed by the Middle Bronze Age, on the evidence of a radiocarbon determination of 3060 ± 110 BP (HAR-2278; 1440-1160 cal BC) made on charcoal from a pit cut through the old land surface and sealed by the barrow mound. Pollen analysis showed that heathland conditions were then already fully established (Horsey and Shackley 1980).

None of these, however, was studied by modern soil science methods. Only the barrows at West Heath Harting, Sussex (Drewett 1976; Drewett 1985), on Cretaceous Folkestone Beds, have been studied by soil chemistry, soil micromorphology and radiocarbon dating of the Bh horizon to try to ascertain clearly, in conjunction with soil pollen studies, the date and nature of podzolisation through clearance and associated burning (Scaife and Macphail 1983; Macphail in Drewett 1985).

At Hengistbury Head, Dorset, 25km to the east of Squirrel's Cottages on Tertiary sands, presumed Bronze Age humo-ferric podzols, one unburied and one buried by a Late Bronze Age/Early Iron Age bank, have been studied by modern methods. Here, podzolisation began during the Bronze Age on the evidence of a residual date of 3350 ± 90 BP (HAR-6186) for the raw humus (H) horizon buried beneath the bank and proceeded through the Iron Age as oak woodland gave way to heathland conditions (Macphail 1988). This date cannot be calibrated as the raw humus contains residual carbon from Holocene soil development. In contrast, podzols at West Heath, Harting, Sussex, were already well-developed by the time barrows began to be built there in the Early Bronze Age, indicating that the process had begun much earlier, a time-scale consistent with a radiocarbon determination of 3770 ± 90 BP (HAR-4840) for a buried Bh horizon (Scaife and Macphail 1983; Macphail in Drewett 1985). This is a mean residence date containing both old and new carbon and therefore cannot be calibrated. Such studies show that podzolisation

occurred at different times in different areas, triggered by human activity (Macphail *et al* 1987).

In Britain and in Europe much attention has been paid to the scientific analysis of present day podzols, including the dating of some Bh horizons, but only rarely have ancient podzols been studied by modern methods (Runia 1988). In southern England in the last decade opportunities to study ancient podzols properly have been taken only at Hengistbury Head and West Heath. In the quality of the buried soils and preserved nature of the turf stacks, Squirrel's Cottages compares well with West Heath and exhibits the best examples of turf stack barrows and buried humo-ferric podzols on lowland heath since the excavations there in 1980 (Scaife and Macphail 1983; Macphail 1987).

The scientific quality of the buried soils at Squirrel's Cottages is high, because they preserve full, well-drained and highly developed profiles very little disturbed by post-burial phenomena. They also appear to be highly acidic, and thus well-preserved chemically. This makes them a valuable data source for the further investigation of the dating and mechanisms of mid to late Holocene podzolisation. Full chemical analyses and the dating of humic materials from the Ah and Bh horizons of both barrows (in addition to any charcoal which might be found on the old land surface) would be necessary to complement any soil pollen studies and to expand and refine the soil landscape history of the area, based on earlier studies. It is also important to realise that present day lowland heaths are fast disappearing, and that even modern undisturbed podzols on them are uncommon (Macphail 1979). The buried podzols at Squirrel's Cottages are therefore important for soil science as well as for prehistory.

3.3 Pollen

3.3.1. Description (Appendix 2). Pollen preservation in the samples assessed was found to be good. The taxa represented are typical of acid podzolic soils. Podzolic soils such as those found at this site offer one of the best possibilities for soil pollen analysis and consequently a source of palaeovegetation data.

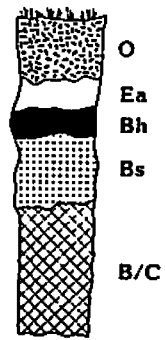
To assess the principal taxa present, a preliminary pollen count of 100 grains per sample was made. The results obtained from the four samples are given in Appendix 2. It is

clear from even the minimal counts obtained that the environment in which the barrows were constructed was one of dominant heathland (*Calluna* and *Erica*). This is consistent with the well-developed podzolic soils underlying the barrows and is perhaps an indication of earlier and substantial human activity on the site. Surprisingly, arboreal pollen is negligible with only traces of oak (*Quercus*), lime (*Tilia*), alder (*Alnus*) and elm (*Ulmus*). These records are likely to have derived from trees growing some distance from the site. Shrubs are dominated by hazel (*Corylus*).

No taxa typical of arable or pastoral farming are in evidence in these preliminary pollen counts. Only full pollen analyses of the barrow profiles will ascertain whether agriculture was being practised locally when they were built. The highly podzolic character of the soils and the dominance of heathers suggest that the soils, at least at the time of barrow construction, were too degraded for cultivation. It seems plausible that the barrows were constructed on the heart of the Dorset heathlands which were initiated prior to the Bronze Age. Earlier analyses of sub-barrow soils in southern England usually exhibit a higher proportion of trees than found here.

3.3.2. Discussion. Pollen diagrams/sequences from southern England are still few in number in comparison to other regions of Britain. Any opportunity to increase our knowledge of the vegetation characteristics of this region must thus be regarded as important. The sandy lithologies of the Cretaceous and Tertiary strata of Dorset, Hampshire and Sussex seem, along with the chalklands to have been favoured by Bronze Age communities for burial of their dead. The largely acid podzolic soils of these heathlands are highly favourable for the preservation of pollen.

The excavation of heathland barrows during the post-war period has produced a small number of valuable pollen diagrams which enhance our knowledge of the historical ecology of the heathlands. Of supreme importance is the work of Professor G.W. Dimbleby who was instrumental through his work on heathlands in showing that the vegetation patterns of these areas were created and maintained by human agency (Dimbleby 1962). His work at Poole (Dimbleby 1952), Turners Puddle Heath (Dimbleby 1953) and Black Down, Portesham (Dimbleby 1957), all in Dorset, provide data comparable with the



**Fig. 6: Profile of a typical humo-ferric podzol
from Curtla, Courtney and Trudgill (1976)**

preliminary analyses presented here. These sites in fact display evidence of heathland development but with the presence of some arboreal constituents.

Since this period, few heathland barrows have been excavated and even fewer have exhibited the clear characteristics of the turf stack construction of those at Squirrel's Cottages. Comparable are the barrows at Moor Green, West End, Hampshire (Ashbee and Dimbleby 1974), Minsted, near Iping, Sussex (Dimbleby in Drewett 1975); West Heath, Sussex (Baigent in Drewett 1976; Scaife in Drewett 1985) and Ascot, Berkshire (Bradley and Keith-Lucas 1975). They also complement and, in the apparent treelessness of the Bronze Age heath, show some variation from the history of landscape evolution in Purbeck constructed from data recovered during the Wytch Farm project (Allen and Scaife forthcoming; Scaife forthcoming). The possibility of detailed pollen analyses of the barrows at Squirrel's Cottages thus provides an opportunity to build on the existing data.

The barrows are thus interesting and valuable from a palaeoecological view. The intact old land surfaces and clear turf construction are doubtless due to the maintenance of this heathland in the post-Bronze Age period until the recent pine plantation. Their proximity to a valley mire some 300m to the south-west enhances their potential for contributing to local landscape history.

4. FINDS

4.1. List

Barrow 1

Context	Material
Layer 3 (upper horizon of topsoil)	1 piece of unworked burnt flint 6 flint flakes, 2 of them burnt and broken
Layer 4 (lower horizon of topsoil)	1 fragment of clay pipe stem
Layer 5 (fill of central pit 6)	2 pieces of unworked burnt flint
Layer 9 (secondary fill of ditch 10)	1 single-platform flint flake core on a thermal flake 1 broken flint flake; both pieces burnt
Unstratified	1 piece of unworked burnt flint 1 broken flint flake

Barrow 2

Context	Material
Layer 102 (topsoil)	1 piece of burnt unworked flint 1 multi-platform flint flake core 1 broken flint flake 2 fragments modern brown bottle glass
Layer 106 (top of barrow mound)	2 pieces of unworked burnt flint 5 flint flakes, 2 burnt and broken
Layer 108 (upper fill of central pit 107)	6 pieces of unworked burnt flint 2 flakes, 1 burnt
Layer 109 (lower fill of central pit 107)	1 piece burnt unworked flint
Layer 110 (secondary fill of ditch 115)	1 piece burnt unworked flint

4.2. Comment

The 18 pieces of struck flint are likely to be of prehistoric, but otherwise indeterminate, date. Fragments of burnt flint may reflect ancient activity or, since almost all were from superficial contexts and from nineteenth century backfill, the lighting of bonfires during the working of the plantation, which Austen records as already in existence at the time of his excavations. The burnt condition of some of the struck flint may have the same recent origin.

5. CONCLUSIONS

5.1. Information Recovered

The various classes of evidence anticipated by Dr Colcutt (1990, section 26) are reviewed here in the order in which they were originally listed.

a. Traces of activities pre-dating use of the site for burial and integrated into the surface layer below the mounds were not recovered. The rarity of struck flint in the backfill of the central pit in Barrow 2 (Section 4.1) suggests that little was present on or in the old land surface dug away by the cutting of the pit.

The highly podzolic character of the soils and the dominance of heathers among the pollen, however, indicate that podzolisation was a long-term process, and therefore possibly evidence of considerably earlier human presence in the area, resulting in the clearance of the presumed post-glacial tree cover.

b. Environmental information (soil and pollen) buried by the construction of the mounds is well-preserved. Preliminary analyses show that the barrows were built in a heathland environment, with very few trees, on already well-developed podzols (Sections 3.2 and 3.3).

c. Artefactual material discarded during any stage in construction was absent.

d. Traces of mortuary practices pre-dating the construction of the mound (temporary mortuary structures, burials cut into the natural surface, etc.). Pit 113 and its fill, layer 114, cut by and surviving at the base of the central pit in Barrow 2, represent a feature cut at least 0.15m into the buried surface (Fig. 5: section GH). The form of pit 107, deeper, irregular and undercut towards the north-west, indicates that an originally subrectangular, centrally-

located excavation was extended to extract something, perhaps a burial, from its north-west corner.

There was no trace of other burials, or of structural features, such as stake- or post-holes, in the natural sand at the base of the central pits. Together, however, these exposed only some 5% of the area covered by the two mounds.

As a result of magnetic susceptibility measurements taken on samples collected by OAA during the present campaign, Simon Colcut (pers.comm.) has suggested that, although there are slight traces of burnt particulate material incorporated into the fill of pit 113 below Barrow 2, there is no sign at either barrow of the sort of magnetic anomalies that might be expected had the funeral ritual included *in situ* pyres or had sustained burning/firing activities immediately preceded use of the area as a funeral site.

e. Information concerning the methods used in the construction of the mounds was recovered from both barrows, which were very similarly built. Each consists of turves stacked on the old land surface. The results of pollen analysis (Section 3.3) indicate that the turves were probably cut from the fibrous humic mat of organic detritus which forms under heathland vegetation. In Barrow 1 a change in turf orientation and matrix colour observed in the south-west face of pit 6 suggests that the structure of the mound is not uniform. Once the turf stacks were built, shallow ditches were dug around them and the upcast sand was used to cap the mounds, the capping of Barrow 2 being thicker than that of Barrow 1. In the case of Barrow 1, where a quadrant was stripped, the fine, almost pebble-free sand through which the upper part of the ditch was dug (Fig. 3, section AB: layers 11 and 16) was used to cap the summit of the mound, with the coarser, more pebbly sand encountered at the base of the ditch (Fig. 3, section AB: layer 17) used to cover the sides (Fig. 2, layers 7 and 8).

Old land surfaces higher than their surrounding modern equivalents may reflect both the selection of slightly raised areas for barrow construction and subsequent erosion of the surrounding surface. The contour survey suggests that Barrows 1 and 3 stand on slight rises, but does not convey the same impression for Barrow 2 (Fig.1).

The line of the ditch of Barrow 1 indicates that, despite its present irregular appearance, it was when first built a regular, round mound like the other two barrows in

the group (Fig. 2: layer 8).

Both mounds are likely to have been bowl barrows, without intervening berms between mounds and ditches. This may be inferred from the smooth, continuous profile of the ditch sides and the surface of the natural sand at the edges of the mounds. The same impression is conveyed by the continuity of the humic, secondary ditch fills with humic material which indicates that mound material gradually weathered into the ditches without any intervening barrier. Flint cobbles concentrated in the deepest parts of the secondary fills are likely to have come to rest there after rolling off the mounds (Fig.3: section AB, Fig. 5: section EF).

f. Information concerning the primary burial(s) placed under or cut into the mound is summarised under (d) above. The pH values recorded in Appendix 1 show that conditions are too acidic for inhumations to have survived. Conditions are, however, conducive to the preservation of coffin and body stains, like those recorded in acid sands at Bowthorpe, Norwich, Norfolk (Lawson 1986), although none was observed and such slight traces may have been removed during Austen's excavations.

g. Information concerning any secondary burials or hoards cut into the mound remains confined to Austen's record of a plain pot found 1 foot below the surface of Barrow 3 (Section 1.4). The small size of this vessel suggests that it may have accompanied an inhumation rather than contained a cremation.

h. Artefacts and other relevant materials deposited in the ditch, either deliberately or due to collapse during silting are confined to two pieces of struck flint from the secondary fill of ditch 10 and a piece of burnt flint from the secondary fill of ditch 115 (Section 4).

i. Information concerning recent excavation or natural damage to the mound or ditch. The most recent excavations identified, apart from those conducted in 1991, are pits 6 and 107 (Section 3.1). A clay pipe stem fragment found in the lower horizon of the topsoil on Barrow 1 (Section 4) may date from this episode of nineteenth-century barrow digging. Natural damage, in the form of root penetration of the mounds and underlying surfaces, is less than it appeared before excavation, being largely confined to thin rootlets, with the main conifer roots spreading more laterally than vertically.

Evidence for the Bronze Age date of the monuments has two principal aspects:

Austen's description of the material which he found (Section 1.4) and the structure of the mounds.

Turf stacks capped with more durable material extracted from a surrounding ditch recur in numerous Early and Middle Bronze Age barrows, dating from c. 2500 to c. 1300 cal BC, in Dorset and beyond. Local examples, dated by their contents, by radiocarbon determinations or by both, include mounds at Canford Heath (Horsey and Shackley 1980), Chick's Hill, East Stoke (Ashbee and Dimbleby 1958), Portesham (Thompson and Ashbee 1957), Simons Ground, Hampreston (White 1982) and Worgret Hill, Arne (Wainwright 1965). Others are referred to in Sections 3.2 and 3.3.

5.2. Review

The Secretary of State's criteria for scheduling ancient monuments provide a convenient framework in which to review the evidence from the Squirrel's Cottages barrows:

- i. Period.* Barrows 1 and 2 are characteristic of a particular class of Bronze Age round barrow built in areas of sand and other 'soft' geology.
- ii. Rarity.* While not intrinsically rare, the barrows represent a monument category of which well-preserved examples are diminishing in number.
- iii. Documentation.* The record of previous investigation is quoted in Section 1.4 above.
- iv. Group Value.* The proximity of the three barrows alone suggests that they were grouped in a small cemetery. The closely similar construction of Barrows 1 and 2 heightens the impression of a coherent whole, built and used by a single community. There is no record of the removal of other barrows in the group.
- v. Survival/Condition.* Barrow 1 survives to more than 0.90m above the old land surface preserved beneath it, Barrow 2 to more than 0.70m (Fig. 3:section CD, Fig. 5:section GHJ), while Barrow 3 survives to approximately 0.80m above the present surrounding surface. The only disturbances identified in Barrows 1 and 2 were pits 6 and 107. These had removed approximately 15% of the volume of the two mounds and, at their largest (i.e. at their upper edges), some 7% of their total area. Root penetration proved largely superficial and no animal burrows were observed.

vi. Fragility/Vulnerability. Heathland barrows built on sand, one of the softest of 'soft' geologies, are particularly fragile, being vulnerable to cultivation, traffic (pedestrian or wheeled) and infestation by burrowing animals. Changes in hydrological status are also detrimental to pollen preservation and to the integrity of buried soils.

vi. Diversity is low, the two outstanding features of the monuments being the extent to which the mounds survive and the quality of the soil and pollen evidence preserved within and beneath them.

vii. Potential. Because so much of the mounds and the underlying surfaces remains intact and in good condition, the monuments have potential for providing detailed information about their structure and use and about the environment in which they were built.

6. ARCHIVE

The site archive, including the finds, is currently held at the offices of Wessex Archaeology in Salisbury. It will be deposited in due course with the Dorset County Museum, Dorchester. It comprises the report, graphics register and photographic register for the 1988 evaluation; copies of O.A.A.'s specification for archaeological evaluation and of the Scheduled Monument Consent for the programme described in the present report; print-outs, graphics register, photographs and drawings from the contour survey conducted by Wessex Archaeology in 1991; context, sample and finds records, graphics register, day book, level book, photographs and drawings from the evaluation described in this report; original versions of reports on the soils by Dr R. Macphail and on the pollen by Dr R. Scaife together with miscellaneous notes and papers used in the production of the report.

APPENDIX 1. SOIL PROFILE DESCRIPTIONS

Site: very low slope plateau

Vegetation: pine woodland

Parent material: Bagshot Beds (Tertiary)

Soils: Humo-ferric podzols within Sollum 2 association (typical gley podzols; Findlay et al. 1983)

Barrow 1, pit 6 (sample series 1027)

Barrow core (layer 13): well-preserved, clearly visible podzolic turves, comprising black (5YR2.5/1) Ah horizon (pH 5.1) and light reddish brown (5YR6/3) Ea horizon material.

Buried soil:

Horizon Depth (cm) Description

bAh (base of layer 13)	0-4	Black (5YR2.5/1) weak, highly humose sand, without apparent structure; few extant woody medium roots; clear, wavy boundary; pH 4.6
bEa (top of layer 19)	4-25+	Light reddish brown (5YR6/3) very weak, structureless medium to coarse sand; very stony with small to large flints; increasingly poorly humose with depth; very few woody medium roots (boundary to b8h horizon not exposed); pH 5.4
b8h (layer 17 in E end of cutting 14)	c.40-50	Black (5YR2.5/1) strong, massive, cemented, highly humose sand; extremely stony with small to large flints; rootless, pH 3.2.

Barrow 2, pit 107 (sample series 1028)

Barrow core (layer 119): mainly black (5YR/2.5) Ah material, with little evidence of original turf layering some weak concentration of modern roots at old ground surface in places.

Buried soil:

Horizon Depth (cm) Description

bAh (base of layer 119)	0-4(10)	Black (5YR2.5/1) weak, highly humose medium to coarse sand, without apparent structure (massive?); few modern medium woody roots; very few stones; clear wavy boundary; pH 3.2
bEa (top of layer 120)	4(10)-35(40)	Light reddish brown (5YR6/3), becoming more pale with depth, very weak structureless medium to coarse sand; few stones; moderately humose, becoming very poorly humose with depth, very poorly humose with depth, rare roots; clear to sharp irregular boundary; pH 4.6
b8hs(Bs) (lower horizon of layer 120)	35(40)-40+	Dark reddish grey (5YR4/2) 8hs with underlying and mottles of yellowish red (5YR5/8) Bs horizon material; strong, cemented, massive; moderately highly to moderately humose; few to common small to medium flints; rootless; pH 3.7.

APPENDIX 2. PRELIMINARY POLLEN COUNTS

Barrow 1, pit 6 (column 1026)

	50cm (turf) (layer 13)	82cm (ols) (base of layer 13)
Betula	1	
Quercus	3	4
Ulmus	1	
Alnus	3	4
Tilia	1	1
Corylus type	27	32
Erica	9	1
Calluna	60	50
Gramineae	1	2
Polypodium	1	1
sum	107	100

Barrow 2, pit 107 (column 1029)

	62 cm (ols) (base of layer 119)	78 cm (bEa) (layer 120)
Quercus	1	1
Ulmus	1	
Alnus	1	
Tilia	1	1
Corylus type	19	33
Salix		1
Erica	3	7
Calluna	73	61
Rosaceae undiff.		1
Centaurea scabiosa type	1	
Gramineae		1
Polypodium	2	1
sum	100	106

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