Birmingham University Field Archaeology Unit

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Warmwell Quarry, West Knighton, Dorset
Archaeological survey and excavation 1994

by

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1 Introduction and summary

1.1 Small scale excavations were undertaken by Birmingham University Field Archaeology Unit at Warmwell Quarry during the period 13 - 24th June 1994, and further monitoring during topsoil removal in October.

1.2 Bronze Age field boundaries suggested the southern limit of an area of burials and settlement. Settlement debris, structural features, and hearths or cremation pyres were recorded, continuing from previous discoveries. Three natural features which may have been significant for prehistoric land use were examined.

2 Previous work

2.1 These excavations represent the final phase of archaeological response to a three-stage programme of gravel quarrying at Warmwell Quarry, in a field centred on NGR SY 472 888 (Fig 1a). Beginning in 1990, the first stage involved fieldwalking and test-pitting of the whole field (Bevan and Dingwall 1990), followed by hand excavation of a selected area in the northern third of the field (Bevan and Sterenberg 1991). This was followed in June 1993 by a watching brief undertaken during topsoil stripping in the central third of the field, the results of which led to a salvage excavation (Leach and Bevan 1993).

3 Procedure

3.1 The final programme of work, and the subject of this report, was undertaken as a more measured response in the light of a growing understanding of the archaeology of the threatened area. The programme was initiated in the southern third of the field by a geophysical survey undertaken early in June 1994 (Fig.1b). It was not then possible to obtain a complete picture because of a topsoil pound from the central portion of the field which unfortunately obscured a 10m wide strip along the north side of the study area.

3.2 The survey suggested the possibility of some archaeological features (Geophysical Surveys of Bradford, Report 94/56), and a small field team from the University of Birmingham undertook excavations following immediately on from topsoil removal. Topsoil was bulldozed northward exposing the subsoil, the final stage of exposure under archaeological supervision, and any suspected features then seen were marked with canes for further examination. Areas where features were noted in the geophysical prospection were monitored with particular care. Thus, despite subsequent disturbance of the subsoil by the bulldozer tracks, it was reasonably certain that all available surfaces were thoroughly checked for archaeological features when first cleanly exposed.

3.3 The topsoil shifted northward was butted against the spoil pound from the 1993 extraction programme. A strip about 25-30m wide was therefore unavailable for examination in June. With its eventual removal in October 1994 a subsequent rapid examination and watching brief was then undertaken. Unfortunately, by that time necessary quarrying operations had extensively damaged the subsoil horizon and only two archaeological features were recorded.

4 Results (Fig 2)

4.1 The subsoil exposed was a mixed clay-gravel, very stiff when dry. Variations were observed, as between greater or lesser proportions of gravel, and occasional pockets of gravel-free clay were observed. In places a rich orange-brown buried soil (layer 235) survived. This filled some features and may represent the remains of a prehistoric soil. Features were visible initially as a result of their fills, either of soil or of clay. Those found are described in five groups - hearths/pyres/occupation spreads; structural trenches and postholes; ditches; sink holes and associated phenomena; and miscellaneous features.

4.2 Hearths/pyres/occupation spreads

Seven areas of *in situ* burning and of deposited burnt material were located. Four (F108, F118, F117, and F128) were clearly areas burnt *in situ*, with surface spreads of ash and charcoal and the clay beneath burnt to a depth of up to 0.25m. Two (F111 and F126) were distinguished by the presence of large quantities of charcoal in a silty matrix, and may represent occupation material. The final feature (F119) contained similar material within what might have been a posthole, with possible remains of a post burnt *in situ*.

(NB. * = sampled context)

F108 - oval plan, shallow sloping-sided profile; fill of burnt clay and charcoal (*211); 0.36m x 0.26m x 0.1m
F111 - surface feature, oval plan; silt fill with charcoal (215); 1.10 x 0.45m x 0.02m deep
F117 - deeply burnt area under burnt surface spread; silt spread over burnt clay, ash and charcoal (*222) also a less burnt fill (232) both overlying silt pocket (233); 2m x 0.5m x 0.2m
F118 - deeply burnt area of oval plan; intense burning grades into surroundings (224), burning deeper to W; 0.75 x 0.35 x 0.25m
F119/F123 - irregular-shaped hollow filled with burnt material; fill of silt with charcoal (*228); 0.2 x 0.15m
F126 - oval shaped spread; clay with much charcoal (231); 0.8m x 0.15m
F128 - area of burnt clay, possibly a hearth; 0.9m east-west, destroyed to north and south

4.3 Structural features

A gully or beam slot (F124) was traced E.-W. for 2.5m; a fragment of daub in its fill suggesting that it was associated with a building. This was cut by, or possibly associated with, a shallow circular feature (F115) which contained a fragment of carbonised wooden plank. With a diameter of 0.9m, it was too large for a post setting, and may have been a slightly sunken working or storage area within the building. The trench F124 also cut into one of the earlier miscellaneous features (F125, below).

F115 - sub-circular plan, shallow concave profile; fill of brown silt with charcoal flecks (225), and a large piece of charcoal, stone lining on sides; 0.9m x 0.25m deep; cuts F124
F116 - circular plan, shallow U-shaped section; silt and charcoal fill (221), possibly with degraded pottery; 0.24m x 0.09m

F124 - gully or beam slot, straight edges, steep sides; silty clay, stones and charcoal flecks (229) with fragments of daub; 0.3m x 0.16m; cut by F115, cuts F125

4.4 Boundary ditches

Three boundary ditches were located and sample excavated. These ran on a slightly different alignment to the modern field layout.

The best example (F102/104/106/109) ran almost east-west for 60m, maintaining a straight orientation; with a butt end (F109) to the east. The ditch was generally 0.6m wide, although up to 1m in places, and 0.45m deep with a shallow U-shaped profile. The filling (204, 208, 209, 213) was a uniform red-brown silt with occasionally an upper stony sinkage horizon. A patch of charcoal was noted at one point(*206), but there was no evidence that the ditch had been recut.

Running at right angles to F102 for over 13m was a second ditch (F107), which linked to the north 2m short of F109. Its line was as direct as F102 but its depth and width was more erratic, with a maximum width and depth of 0.4m x 0.2m. To the south it became increasingly shallow until it was no longer visible. Its fill matrix was a uniform reddish silt, similar to that in F102, but some natural flint nodules were present (210), and at one point a substantial carbonised wood fragment was observed in the upper fill.

Geophysical prospection had shown a similar pair of linear features meeting at right angles in the eastern half of the site. In the event only one (F127) was found by excavation, running N.- S. on a straight alignment. The ditch profile was a shallow U-shape, less well defined than F102. Its fill of red silt (234) was similar to the surrounding buried soil layer (235). The relationship of ditch and buried soil could be interpreted as either contemporary, or as the soil filling and sealing the ditch; the ditch, however, was not later than the buried soil. There was no evidence of recutting. The ditch was 0.9m wide and 0.3m deep to the north and gradually narrowed and faded out to the south.

4.5 Sink holes

In the south-west corner of the field, geophysical prospection suggested four areas of modern disturbance and a large pit. On the removal of topsoil these areas of disturbance were seen to be two large hollows (F105 and F120), *c* 20m across and 1.5 to 2m deep.

Hollow F105 was filled with soft buff silt layers sealed beneath a deep upper topsoil fill. In stripping this the bulldozer had left occasional vertical sections, and lenses of burnt material as well as lenses marked by flint flakes could be seen in the lower silt. Contractors' machinery was subsequently used to excavate this hollow. An infilled vertical shaft in the centre of the hollow, approximately 3-4m wide, continued down to the excavation limit of 2-3m.

The second hollow (F120) had a weathering cone of similar diameter, suggesting the existence of another vertical shaft, although this could not be confirmed. An upper fill of dark soil overlay a silt with possible turf lines, one of which sealed flint flake debitage. In one place a slight discontinuity could be seen, c 0.6m across by 0.2m deep.

The large pit (F110) noted in the geophysical survey, was initially quadranted and excavated by hand (Fig 3). A clear circle, 3.7m in diameter and with vertical sides, was hand excavated to a depth of 2m. The upper part was filled with topsoil, below

which was a mixed clay and soil layer (216). This overlay a darker brown layer resembling a buried turf line which in turn overlay silty clay (223). Towards the sides of the feature the clay butted up against steeply shelving layers of flint gravel.

Hand excavation was then continued by machine to a depth of 5m. The vertical sides of the feature were seen to continue down through the natural subsoil, gravel and sand deposits, but no bottom was reached. The fills clearly comprised an inverted cone of soft clay which sealed steeply-sloping layers of, first, the hand-excavated flint and clay, then gravel layers blackened by manganese, then creamier gravel horizons, and then sand. This sequence mirrored that of the surrounding natural deposits with a discontinuity of as much as 2m; the whole profile resembling that to be seen in a geological fault.

It was concluded that these three features were natural sink holes; the overlying geological strata having subsided into caverns and discontinuities gradually leached out in the underlying chalk (generally occuring here at a depth of 12m). The weathering cones of such features are not uncommon in the area, and new sink holes are recorded from time to time (pers comm Peter Woodward). The same phenomonon occurs on limestone and the possibility that sink holes may have been favoured prehistoric locations has been suggested on the Mendip Hills (Stanton 1986).

4.6 Miscellaneous features

Of *c* 30 other features marked during topsoil stripping and distinguished as irregular patches of soil or clay, seven were excavated. In all cases the removal of the dark topsoil or clay fill revealed an amorphous depression in the natural. Some hollows were quite sharply defined on the surface but excavation revealed irregular bases. These features were not thought to be anthropogenic and they may have resulted from animal burrowing or as tree root holes. Charcoal in some of their fills could be interpreted as evidence of tree stumps burnt out *in situ*.

F100 - oval plan shallow U-shaped irregular profile; fill of mottled clay with charcoal and natural flint (203); 1m x 2m x 0.3m deep
F101 - rectangular plan with rounded corners, irregular profile; fill of dark brown claysoil with large natural flints (207); 1.3m x 0.48m deep
F103 - irregular plan and profile; dark brown fill (205); 0.6m x 0.4m x 0.28m deep
F112 - irregular plan and profile cut into by irregular hollows; brown silt fill with much charcoal (*217); 1m x 0.5m x 0.3m
F113 - irregular plan and profile; fill of dark brown clay with a few stones and charcoal flecks (218) with a silt lens (219); 1.4 x 0.9 x 0.3m
F114 - irregular plan, shallow sloping sided profile; silt fill with occasional stones and charcoal flecks (220); 1.1m x 0.35m x 0.07m
F122 - irregular oval plan, steep-sided profile; brown silt with no charcoal; 1.3m x 0.73m x 0.3m
F125 - not fully excavated; brown silt fill with little charcoal (230); 0.3m deep; cut by F124

5 Dating evidence

5.1 Bronze Age pottery was found in the occupation features F111 and F116. The ditch F102/104/106 yielded a single sherd, as did the sink hole F110 from the layer above the buried turf line. None of the miscellaneous features contained any pottery .

5.2 A handful of worked flint flakes, tools, and cores was found. These derived from the surface of the subsoil and could all represent Neolithic/Bronze Age industries. Flakes from flint knapping were found in association with some of the burnt areas, structural features and the ditches.

6 Conclusions

6.1 The presence of field boundaries in the southern part of the area studied suggests a change in the pattern of Bronze Age land use as revealed throughout this locality. To the west the linked ditches F102 and F107 may be seen to define the corner of a field. The contiguity of boundary F107 with the sinkhole F105 may signify that the latter formed a natural barrier which replaced the ditch here. Alternatively, it might be that access was left to the sinkhole depressions, where perhaps water was sometimes available for livestock.

6.2 The absence of ditch recutting suggests that the Early Bronze Age fields were shortlived. Evidence from elsewhere suggests that initial forest clearance on what was to become the Dorset heathlands led at first to a fertile terrain. But cultivation soon impoverished the light soils through leaching (pers comm Peter Woodward), a process which ultimately created the heathlands which persist to the present day. The Bronze Age farmers would then move on to create new fields.

6.3 It has been suggested that the sink holes in this area of the site are connected with naturally occurring solution hollows in the chalk below. It is possible that the chalk here lies slightly closer to the surface, running on an east-west axis marked by the three sink holes. The flint flake and sherd of pottery found just beneath the turf line suggests that F110 formed a steep-sided hollow in the Bronze Age or before. The other two (F105 and F120), with much larger surface hollows, contained layered fills. This, and the flint flakes suggest that both were open in prehistoric times, when they would have been favoured as sheltered activity locations.

6.4 To the east of field boundaries F102 and F107 two further enclosures are suggested, divided originally by the ditch F127 which was on a parallel alignment to F107. The first area contained a scatter of manmade and natural features, but it is difficult to see any coherent pattern here. The possible building marked by gulley F124, and hearth features F119 and F126, with an area of *in situ* burning, lay to the east of the boundary F127, within a possible third enclosure.

6.5 For a more comprehensive interpretation of these features it is necessary to view them in the context of the earlier remains recorded to the north in this locality. In a discussion of the work undertaken up to 1993 (Leach and Bevan 1993) a mixture of domestic and funerary activity in a Middle Bronze Age context was suggested. Funerary evidence comprised a single cinerary urn with cremated bone (F2) and burnt areas which could be interpreted as sites for funeral pyres. Settlement evidence comprised the flint artefact scatters, possible hearths which were associated with daub and evidence of reuse, and the posthole and pit features. However, many of these elements could be interpreted in either context, notably the pyres/hearths or the postholes; while many of the finds are similarly open to varied interpretation. Flint tools and their preparation debris can be viewed as funerary accompaniments or as domestic items. The pottery of this period is generally found in funerary contexts but also might be domestic.

6.6 From all the evidence recovered up until this year it would be possible to interpret the site as wholly funerary in character, with funeral pyres and cremation burials grouped around ritual structures. However, the recognition of field boundaries in 1994 suggests a new element or zone, representing more specifically domestic and agricultural activity. One interpretation would place the funerary urn found in 1993 (F2) in a phase earlier than the cluster of features in the same area which might be

evidence of houses. Alternatively, there is evidence here for zones of activity; funerary to the north, occupation and domestic to the south and east, giving way to fields and agriculture further south and west.

6.7 In conclusion, the field boundaries found in 1994 may indicate the beginning of field systems associated with a settlement and an attached cemetery. There is some evidence that the settlement expanded over abandoned fields. The absence of cinerary urns in the area examined in 1994 may suggest that the settlement lay in this area with a cemetery to its north. Generally, in the Early and Middle Bronze Age the greater emphasis upon funerary over settlement evidence is a result of the relative archaeological invisibility of the latter, rather than the absence of occupation sites. With more permanently established agricultural regimes and landscapes later in the Bronze Age this emphasis begins to change. Also at this time areas of burial come to be contiguous with settlements, a pattern recognised on both upland and lowland sites. On the Dorset heathland, funerary sites, and notably barrows, are very prominent, whereas settlement and agricultural evidence is rare. This contrasts somewhat with the situation on the adjacent chalk downs, where small settlements associated with 'celtic' fields are fairly well known (Woodward 1991). And it is this which gives the site at Warmwell its particular significance.

7 Recommendations

7.1 The archaeological results from Warmwell Quarry form a rich data-set requiring further analysis and subsequent publication. Of the artefacts collected over all seasons, the prehistoric pottery deserves a full report, while the flint collection needs a considered final appraisal. Radiocarbon dates from funerary and settlement deposits will allow the dating evidence to be refined, and analysis of soil samples and carbonised plant remains will assist in reconstructing the historic environment and context of this site. A detailed proposal to facilitate this study with a view to its publication has been prepared as a separate document.

7.2 Publication of the structural and artefactual evidence will make a notable contribution to Bronze Age studies in the region, and should provide key evidence towards an understanding of how the Dorset heathlands were created.

8. Acknowledgments

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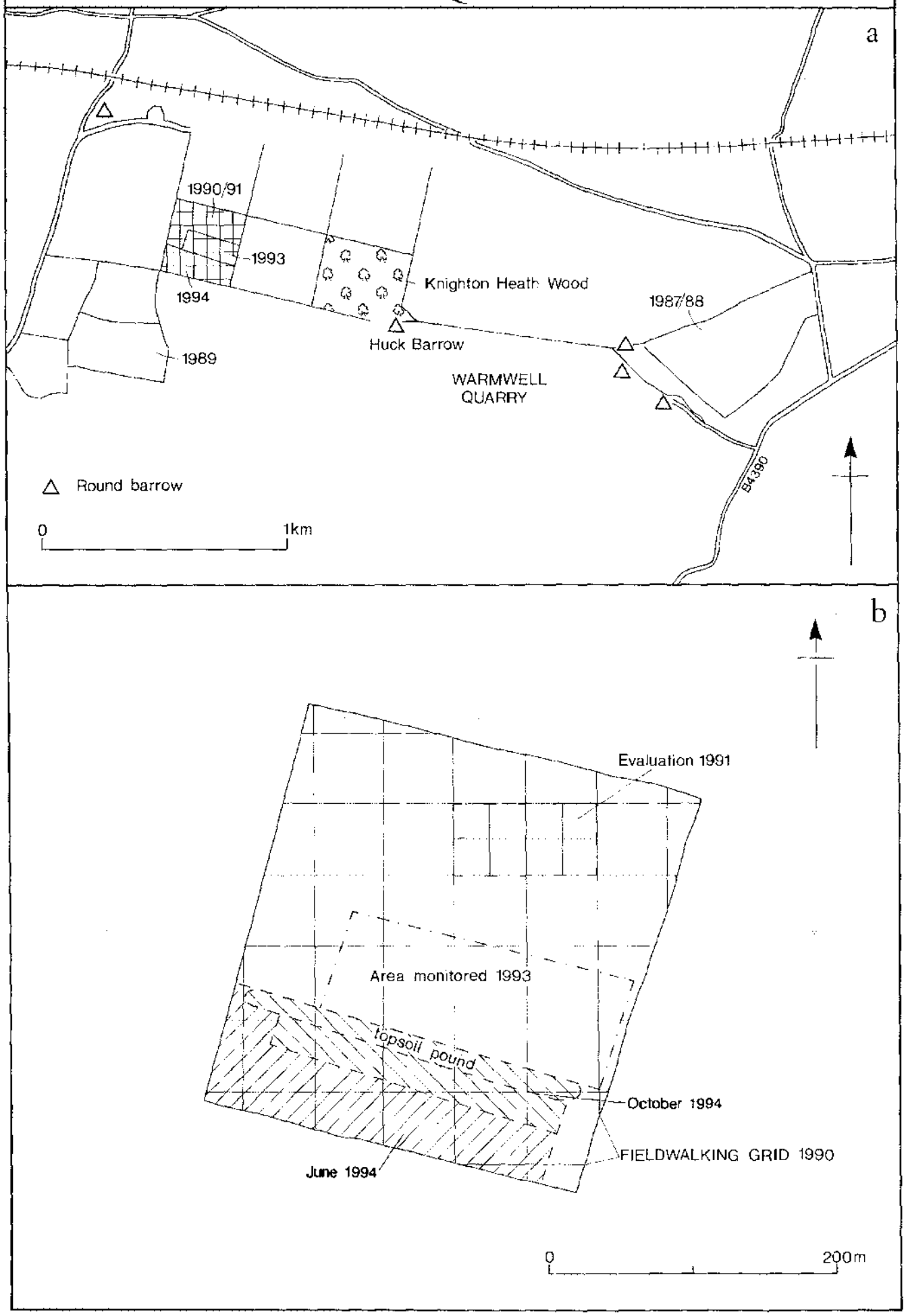

Figure 1

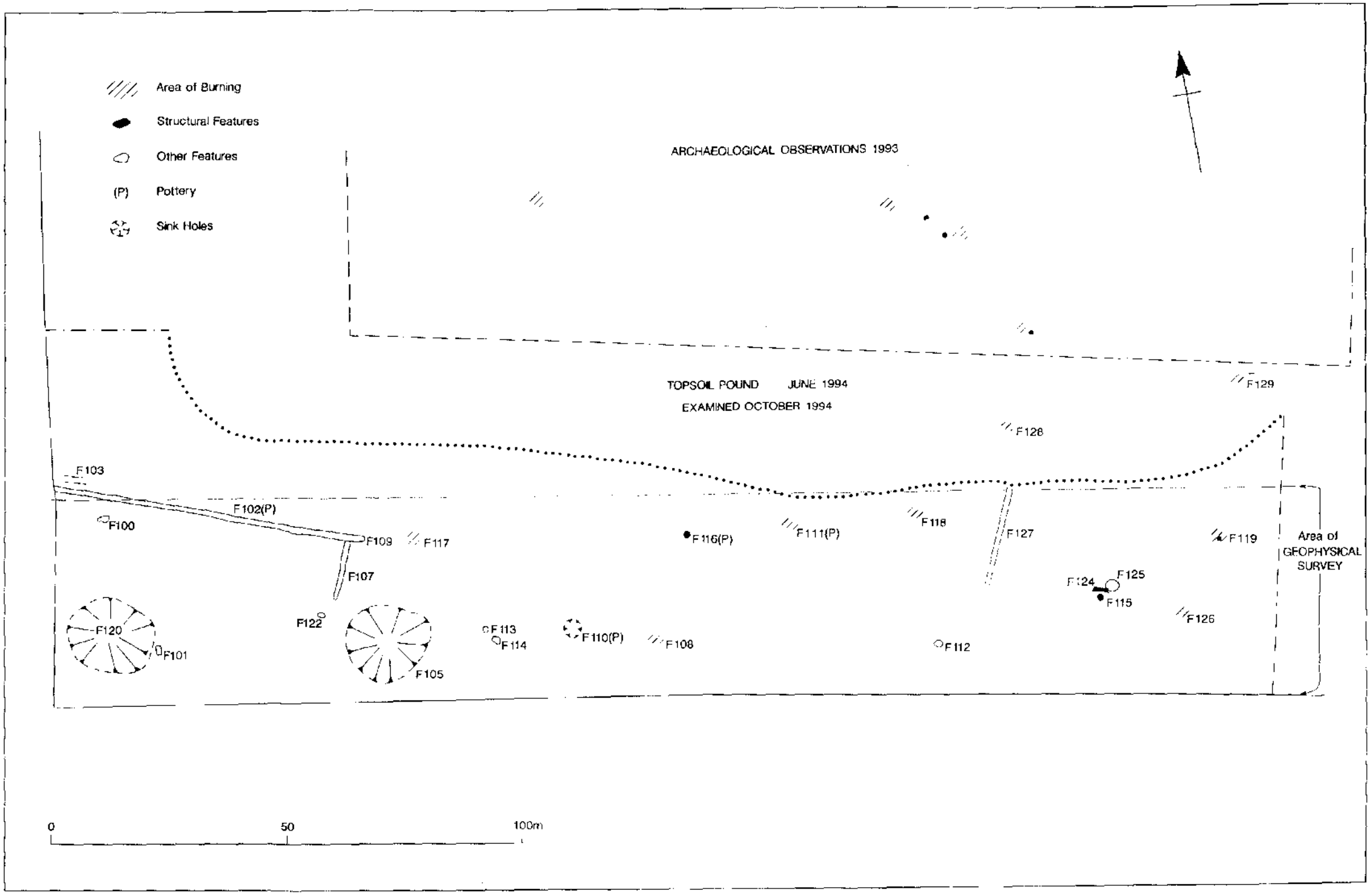
Area of Burning
Structural Features
Other Features
(P) Pottery
Sink Holes
ARCHAEOLOGICAL OBSERVATIONS 1993
TOPSOIL POUND JUNE 1994
EXAMINED OCTOBER 1994
F129
F128
F103
F102(P)
F100
F109
F117
F116(P)
F111(P)
F118
F127
F119
Area of GEOPHYSICAL SURVEY
F107
F124
F125
F115
F126
F120
F122
F113
F114
F110(P)
F108
F112
F101
F105
0
50
100m

Figure 2

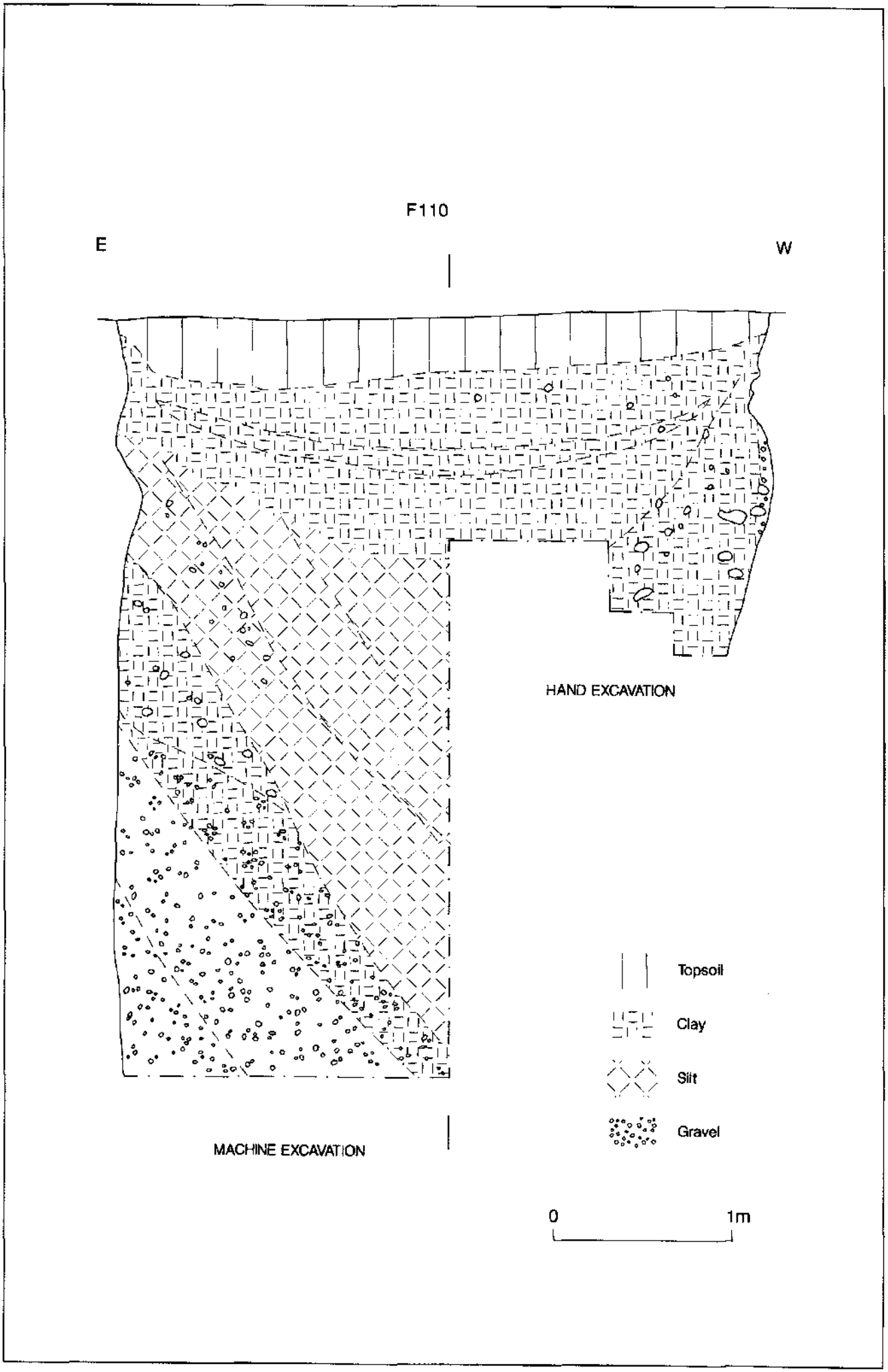
F110
E
W
HAND EXCAVATION
MACHINE EXCAVATION
Topsoil
Clay
Silt
Gravel
0
1m

Figure 3