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Misplaced faith? Medieval pottery and fieldwalking

CHRISTOPHER GERRARD*

SUMMARY

The Shapwick Project, Somerset, began in 1989 as a ten-year, multi-disciplinary landscape investigation focused particularly upon the evolution of early and late medieval settlement patterns. One of the aims of the project is to examine appropriate methodologies for the investigation of rural historic landscapes. This paper considers the efficacy of fieldwalking as a means of identifying archaeological monuments and land-use for the medieval period.

INTRODUCTION

Shapwick (ST 416384) lies in central Somerset on the north-facing slope of the Polden Hills, about 8 km to the west of Glastonbury. Since 1989 the parish has been the focus of a multi-disciplinary landscape investigation whose major objective has been to chart the origins and development of settlement and landuse in the post-Roman period (Gerrard and Aston 1997).

A wide range of archaeological techniques have been carried out. Some of these are standard in programmes of fieldwork across the country such as aerial photography, recording of standing buildings, topographical survey, documentary and cartographic research, geophysical survey, fieldwalking, palaeo-environmental reconstruction, test-pitting and excavation. Other techniques, such as botanical survey, shovel-testing and a wide range of soil analyses, are more experimental. Most of the early and later medieval pottery, about 8,500 sherds, has come from fieldwalking across the 302 ha of farmland[1]. Some 70,000 artefacts, from flint to plastic, have been bagged and sorted and, by treating the whole parish as one large archaeological site and using standard terminologies and recording systems, the recovery rates and densities, as well as physical characteristics, such as sherd abrasion, can be compared between sites and areas[2] (Gerrard 1995; Gerrard and Gutiérrez 1997).

IDENTIFYING BIAS

An understanding of the sampling strategy is fundamental to making sense of fieldwalking results (Haselgrove 1985). At Shapwick, fields are laid out with 25 m intervals between runs and collection points every 25 m, representing a 7–10% sample of the area of each field. Where the plotted results show dense clusters of material, the field, or a portion of it, is gridded out and all the artefacts are collected. Two points are worth emphasising about this simple strategy. First, the 25 m grid gives a far higher resolution for the plotting of finds than is often the case in projects of this sort. For example, both the East Hampshire Survey (Shennan 1985) and the East Brittany Survey (Astill and Davies 1997) used collection units 100 m long. This close gridding was felt to be necessary in order to map the anticipated low frequencies of medieval material with accuracy. Second, the collection of post-medieval and modern pottery is not standard practice and, as will be argued later in this paper, our interpretation of earlier periods is the worse for that.

'Recovery factors' are a second and significant influence. As Barker (1991) has noted, field survey is not 'an enormous vacuum cleaner' which collects settlement data from all periods in an unbiased way. Factors such as topography (altitude, slope) and environment (weather, condition of crop, temperature) are recorded (Fasham *et al* 1980; Liddle 1985; Hayfield 1987) and do influence results. The effects of weather and land conditions can be calculated statistically (using dummy variable regression on the logged mean densities of walked line; for method see Shennan 1985, 36) and varies from 40% for pottery, to 44% for brick and up to 56% for tile (Turner 1995, 62). These figures are broadly similar to those quoted for a slightly different range of artefact categories in the East Hampshire Survey (Shennan 1985, 36) and require further explanation.

Specific variables affect the results in different

Walkers	Pottery	Flint	Brick	Tile	Unid	Drain pipes	Slate	Clay pipe	Glass	Stone	Metal	Slag	Oyster	Coal	Overall rank
A	4	3	3	7	1	5	3	4	1	4	2	2	1	3	1
B	3	2	2	3	2	3	2	5	2	7	3	5	3	1	2
C	2	4	6	1	3	4	6	1	3	3	5	1	5	6	3
D	6	5	7	5	7	6	4	2	7	6	1	6	7	2	4
E	1	1	8	4	5	1	9	6	6	9	4	4	6	8	5
F	8	7	9	9	8	9	5	3	4	1	7	3	2	4	6
G	5	8	5	2	4	8	8	7	5	8	6	8	8	5	7
H	7	6	1	8	6	7	1	8	9	5	8	7	9	7	8
I	9	9	4	6	9	2	7	9	8	2	9	9	4	9	9

Figure 1. Rank-order of walkers (A to I) for a range of different materials collected (pottery to coal) on the basis of the overall densities. The overall ranking in the right-hand column is an aggregate of all the ranks.

ways. Altitude, the gradient of the field, cold temperatures and the effects of sun and shadow seem to have little effect on pottery recovery[3]. In contrast, the position of the grid on the slope is influential, with less material collected at the top and the bottom. Colluvial and alluvial activity are partly to blame here, but cultivation also flattens out slopes (Olausson 1988) and localised masking of medieval deposits occurs close to settlements where post-medieval manuring leads to exceptional depths of topsoil (Gerrard and Costen 1997). Warmth is also important, presumably for reasons of morale, though fieldwalking after or during rain also seems to improve results because the pottery is washed and more easily visible. On projects undertaken elsewhere, bias might be caused by differing geology and soils, particularly on waterlogged clay soils where more fragile medieval fabrics are subject to freeze and thaw, and by the condition of the field at the time it is walked — whether, for example, it is recently ploughed/ harrowed and which type of agricultural machinery has been used (Boismier 1991).

There is also a difference in performance between one fieldwalker and another. Overall, experiments at Shapwick strongly endorse the long-held view that there is no substitute for experience. The experienced fieldwalker collects on average about 80% of all the artefacts in a 10-metre square grid within 30 minutes, but the inexperienced worker collects only 45% (Gerrard 1990). Of course, it is not vital that fieldwalkers retrieve the entire population of artefacts in their grid, but it is very important that their collected sample is representative. Our experiments show that less experienced fieldwalkers retrieve the largest, most visible artefacts first and then add an increasingly high proportion of unworked stone, partly because they lack the necessary recognition skills and partly because they are keen to maintain their initial recovery rates. After 25 minutes over 80% of all the finds they collected were natural unworked stone!

Although experienced fieldwalkers are the most reliable, there are differences between them. Figure 1 shows the fieldwalkers who have walked the most lines identified as A-I in the left-hand column, with a selection of artefact classes spread across the top. To make the analysis meaningful, only those nine individuals who had walked many hundreds of lines could be included (for method, see Shennan 1985, 43). Beneath each artefact class all fieldwalkers are given a ranking between 1 and 9 which reflects the overall density of material they have collected. This exercise shows that the most experienced of the fieldwalkers, A, is also the most reliable. More worrying is that some fieldwalkers have marked 'preferences' in the material they chose to collect. For example, H has an eye for brick and slate, E for pottery and flint (Turner 1995). These deficiencies might be 'corrected' by further sessions on artefact-recognition for the fieldwalker concerned.

There are slight differences between fieldwalkers in their recovery of pottery and it was felt that one influential factor might be the surface colour of a sherd. Fieldwalkers were therefore ranked on the basis of the density of pottery recovered in ten broad colour bands (Fig. 2). Again, it became apparent that some fieldwalkers are consistently good (A), others consistently poorer (I) and those in-between were better at collecting fabrics in some colours than in others. Fieldwalker D, for example, has a far better eye for blue coloured pottery than his/her overall ranking would suggest and a tendency to collect 19th century material (Fig. 3). Fieldwalker E, on the other hand, has a noticeably poorer record for brown coarsewares which is reflected in the ranking for Roman and early medieval pottery. For this fieldwalker the problem may be optical but for others it could be that their perception differs about what is 'important' to collect, in spite of the fact

Walkers	White	Cream	Blue	Black	Yellow	Light brown	Dark brown	Blue	Pink	Overall rank
A	3	5	4	2	3	1	1	4	4	1
E	5	1	5	3	2	6	4	2	1	2
B	2	2	3	4	7	2	3	5	2	3
F	6	6	6	1	1	4	2	6	8	4
C	1	3	1	7	4	5	8	7	3	5
D	4	8	2	6	5	8	5	1	7	6
K	7	4	8	8	8	3	6	7	5	7
H	8	7	9	9	6	7	7	3	6	8
I	9	9	7	5	9	9	8	7	9	9

Figure 2. Rank-order of walkers (A to I) on the basis of the densities of pottery collected in nine colour bands (white to pink). The overall ranking is an aggregate of all the ranks.

Walkers	Prehist	Roman	Early med	Late med	17th	18th	19th	20th	Overall rank
A	3	1	1	4	4	5	2	2	1
E	1	5	5	1	1	1	6	4	2
B	4	2	4	2	3	2	3	3	3
C	2	4	3	5	2	3	1	5	4
F	7	3	6	7	8	4	5	1	5
K	8	6	2	3	5	6	7	7	6
H	6	7	7	6	7	7	8	8	7
D	5	9	9	8	9	8	4	6	8
I	8	8	8	9	6	9	9	9	9

Figure 3. Rank-order of walkers (A to I) on the basis of the density of pottery collected for eight periods (prehistoric to 20th century). The overall ranking is an aggregate of all the ranks.

that they are asked to collect everything. This might explain why some individuals (for example, fieldwalker E) pick up plenty of medieval pottery but only in a limited range of fabrics (Fig. 4).

If we are to minimise variability in fieldwalking results, then the data from Shapwick suggest the ideal circumstances for fieldwalking would be ploughed fields, free of any crop, after recent rain in mild weather. Under these circumstances experienced fieldwalkers, particularly those with some training in pottery identification, should collect most pottery in the widest range of fabrics in the middle of the slope and where the action of ploughing has affected the subsoil. However, different conditions may be appropriate for the recovery of brick or metalwork where, for example, the presence of a crop has far less effect.

Bias should be freely spread. For example, during line-walking it may be possible to ensure that any one individual does not walk a sequential series of lines in a field: fieldwalkers can be swopped about. Alternatively, with large numbers of inexperienced walkers it might be possible to shorten the lines or lengthen the time spent walking. In grid-walking, if less experienced walkers are to be used at all, it would be better if there were two people in a square and it was walked for half the time. Where a fieldwork project is likely to make use of groups of inexperienced workers for many years, the field can be used as the unit of analysis rather than the individual walked transect. The results are much grosser in their scale but individual bias is aggregated over larger areas.

FIELDWALKING AND EXCAVATION

This second section examines the relationship between what is found on the surface of the ploughsoil and what is contained within its profile. Other surveys (for example, Barker 1991) show that the amount and type of material collected on the same sites year after year can vary but that the shape,

Walkers	Roman	Early med	Late med	17th	18th	19th	20th	Overall rank
A	1	1	1	2	1	2	1	1
B	1	1	2	1	2	1	2	2
F	3	3	4	2	3	3	2	3
D	5	5	8	2	3	4	2	4
C	5	3	5	2	7	6	2	5
H	4	5	3	8	5	7	6	6
E	5	5	6	6	6	5	6	7
K	9	5	6	6	8	7	8	8
I	5	9	9	8	9	9	8	9

Figure 4. Rank-order of walkers (A to I) on the basis of the range of fabrics collected for seven periods (Roman to 20th century), e.g. Walker A collected a wider range of late medieval fabrics than Walker B. The overall ranking is an aggregate of all the ranks.

spread and chronological range of material remain more or less constant. This conclusion is borne out by work at Shapwick where some fields have been regularly re-walked under the same field conditions and with the same team of walkers (Gerrard 1995). Figure 5 shows sherd densities for the Roman, early medieval and later medieval periods for one part of Field 4016. Areas of higher density scatters are found in similar locations in 1993 and 1994, though the number of sherds collected was much reduced in the second exercise. In this case the sample of Roman pottery recovered was large but where more ephemeral spreads of material, such as early medieval pottery, are under consideration (Shott 1995) then the sample size could be increased by walking the field more than once, closing up the transects or making the grid less than 10 m.

The effects of ploughing can be imitated by burying a selection of ceramics in a field, ploughing it and then field-walking in the usual way. The intention is to recover data about lateral displacement of artefacts down slopes and the percentage of artefacts visible on the ground surface. Our results show that between 9% and 25% of the total number of sherds in the ploughsoil are visible at any one time, depending on the size and wall thickness of the pottery. These figures are somewhat higher than the 3% suggested by Clark and Schofield (1991) for flints but the conclusion must be the same — only a small minority of all artefacts in the ploughsoil are visible on the surface at any one time. Our experiments also indicate that flat shapes will generally move further as they are flipped over end-to-end until they suffer damage and abrade. This and other studies (Dunnell and Simek 1995, 308) suggest that breakage and abrasion are relatively rapid initially but that the fracturing rate quickly slows. One implication is that more fragile pottery, perhaps early medieval pottery in the Shapwick case, will travel less far than more durable post-medieval pottery and so provide a more accurate guide to buried deposits (Marter 1997). Recent work in Northamptonshire at Warmington provides some measure of support for this (Shaw 1993).

A second implication of this work is that the size of pottery sherds retrieved from the surface of the field is affected by the length of time spent in the active ploughsoil of an arable field. There is no simple correlation between sherd size and deposition date because other factors, such as the hardness of the fabric and the cultivation history of a particular field, are also influential (Tomber 1991) but the larger sherds in a surface scatter might be the best guide to locating the buried features from which they have been loosened by the plough. The correlation between surface scatters of large sherds and buried features is unlikely to be exact but at Shapwick we are experimenting with mapping only the largest sherds in the fieldwalking assemblage as a guide for further evaluation (Dunnell and Simek 1995) although it should be borne in mind that larger sherds are likely to guide us to rubbish pits as sources of secondary refuse and not to locations where pots were actually in use (Orton 1986). The danger of focusing exclusively on sherd size is that the extent of sites can be seriously underestimated; more work is still needed on the interpretation of sherd condition or abrasion/rounding (Moorhouse 1986).

Most discussions of this sort assume that what is on the surface of the ploughsoil is representative of what lies within it and being annually disturbed by the plough. This can be tested by taking a quantifiable sample of topsoil and comparing the nature and number of artefacts recovered with the field-walking results. To do this we are experimenting with shovel-pit testing (Smith and Thorpe 1995). Using this technique, a grid of 50 metre squares is laid out over a field and from within each square five 30 litre samples of topsoil are sieved through a 1cm

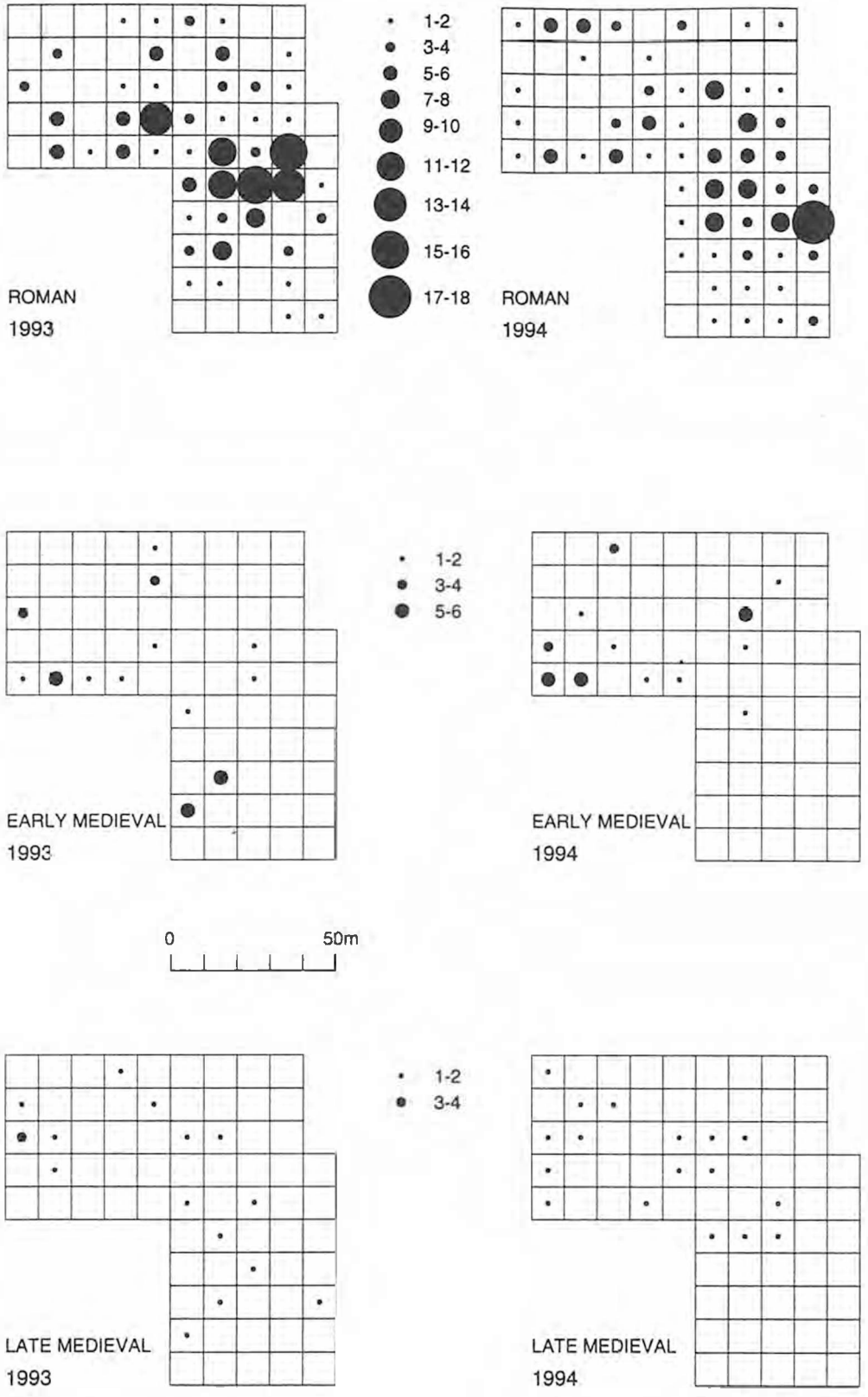

Figure 5. Old Church Field (4016), Shapwick. Comparison of the distribution of Roman, early and late medieval pottery for the same area walked in consecutive years 1993 and 1994. Dots of different sizes represent the numbers of sherds collected in each 10 metre grid.

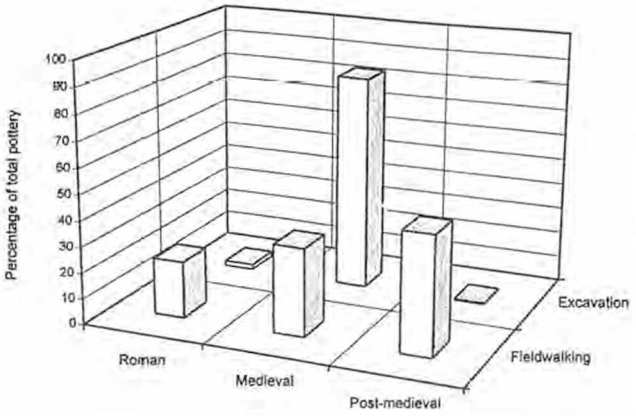

Figure 6. Field 4016, Shapwick. Comparison of relative percentages recovered by fieldwalking and excavation in exactly the same part of the field.

mesh. The numbers of artefacts of each type, including pottery, can be counted and, since the sample is quantified by volume of topsoil, it is possible to calculate the densities of material present. Whilst the sample is very small, the preliminary results indicate far higher densities of early and later medieval pottery *within* the topsoil than on top of it. Presumably the more friable pottery fabrics are disintegrating once they are exposed (Jacobsen 1984; Olausson 1988). In order to compensate for this effect we are using shovel-pit testing over quite wide areas, including woodland and pasture, and are having a good deal of success in pinpointing medieval and earlier pottery scatters.

Comparison can also be made between material in the ploughsoil and buried features. To test this relationship, the densities of pottery recovered from fieldwalking can be compared with later excavation in the same spot (for example, Field 4016; Fig. 6). The results show that the date of material on the surface is not always a reliable guide to the date of buried deposits below. In this case the high percentage of Roman and post-medieval ceramics on the surface of the ploughsoil and in the topsoil is not matched by Roman or post-medieval features beneath, presumably either because this pottery is introduced from manuring or there are Roman and post-medieval monuments buried not far away. There is nothing in the fieldwalking results to indicate that the major buried monument is in fact a medieval church and priest's house, which is what was identified during excavation. A much better guide seems to be a combination of high density pottery clusters with areas of surface soil discolouration which will generally be present if the artefact 'reservoir' beneath has been grazed by the plough.

INTERPRETING PATTERNS OF EARLY MEDIEVAL SETTLEMENT

Every method of displaying fieldwalking data has its drawbacks. For the Shapwick project all 137 identified fabrics in the type series are plotted onto base maps of the parish. Summary maps by period can then be produced, such as that on Figure 7 for the later medieval period. In this case some interpretation can be made (see inset) but difficulties arise when the overall densities of sherds are low, as in the case of early medieval pottery. One alternative is to agree upon a certain density of material as signifying a 'site', but since significantly different volumes of pottery are in circulation at different periods, it is self-evident that what stands for a 'site' in one period does not necessarily hold for the next.

One improvement is the useful approach pioneered by the Ager Tarraconensis survey called 'ADABS' ('Abnormal densities above background scatter') (Carrete *et al* 1995, 56). Using this system, once the pottery has been grouped into broad chronological periods, the average density of pottery per transect for each field walked can be calculated and those fields in the top ten percentile for each chronological period identified. This highlights those fields with the highest densities of pottery for each period examined in a more objective fashion. There are a number of flaws, as the authors themselves point out, such as the justification behind the ten percentile figure, but this could be calibrated further by testing its accuracy against evaluation and excavation results.

At Shapwick there is additional data to hand in the form of densities of material for each walked transect. This can be put to good use by looking for clusters of higher density values (for example, Ford 1987, 48). Thus, where a large field has a tight grouping of pottery of one period, it sometimes does not register as an ADAB because the high density is 'swallowed' by having so many walked transects in a large field (Gerrard 1995, 13). Likewise, where a cluster of material crosses a field boundary the densities in each adjacent field might be low. To get around this, some judgement is needed to look for those fields or groups of fields with clusters of pottery or contiguous patterns of dots. The ADABS for other artefact categories such as brick, tile and metal can then be brought into consideration so that overlapping scatters of material from different artefact classes can be identified.

This procedure is best explained with reference to a case study. At Shapwick, pottery of early medieval date is rare and those fields with the highest densities are ranked 1 to 6 on Figure 8. Thus, the field with the highest density of early medieval pottery is number 0011 and the sixth highest density is from field 9400. There are clusters of pottery too,

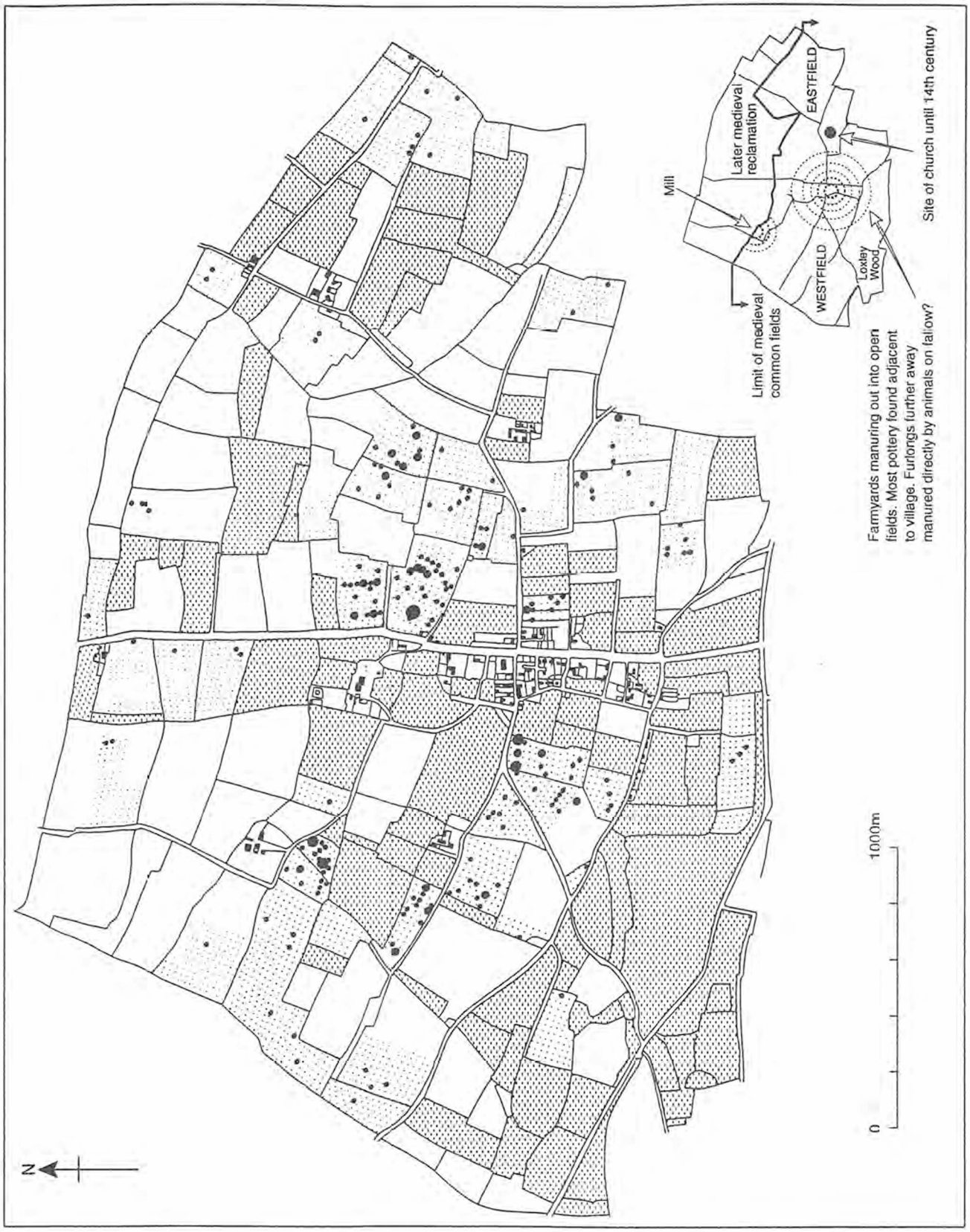

Figure 7. Distribution map of late medieval pottery (11th to mid-16th century) from 302 ha fieldwalked in Shapwick parish. Pasture is shaded, walked areas lightly dotted with blacked circles of different sizes representing numbers of sherds (smallest 1 sherd, largest 12 sherds). The modern village is central to the parish with the Levels at the top of the figure (north) and the Polden Hills at the bottom (south). With one exception the outlying farms are 18th or 19th century. An interpretation of the pattern is inset.

Field	20thC	19thC	18thC	17thC	Late med	Early med	Roman	Prehist
7142	4							
4200	1	2						
9990	5	1	1			3		
3282	⊕	3(93)	⊕	6				
1900	⊕	⊕	⊕	1				
1728		4	5					
SMF			⊕	2				
7951			3	4	3	2	4	5
0078			⊕	⊕	⊕	5	⊕	⊕
0054	⊕	⊕	4	⊕	4	⊕	5	⊕
0011		⊕	2	3	2	1	6	
4100	2(92) 3(94) 6(93)	6(93)	6(93)	5(93)	5			
9611		5	⊕					
9400					6	6		
0387					1	4	⊕	1
2736				⊕		⊕	1	6
3553		⊕				⊕	⊕	3
1264		⊕					3	
5885/7078							2	2
5700							⊕	4

⊕ cluster of pottery

possible sites

Figure 8. ADABS and clusters list for Shapwick fields. A selection of fields is listed in the left-hand column, and chronological periods across the top. Reading downwards for any period the numbers in the boxes (1 to 6) give the rank-order of densities of pottery for that period. The years (92-94) in brackets indicate when the fields were walked. Thus, the highest density of late medieval pottery is in field 0387. The clusters are tight groupings of pottery in large fields identified from mapping sherds in 25 m collection units across the parish. Possible 'sites', or buried archaeology, are those fields with high densities or clusters of pottery but little later material. Fields with high post-medieval and early modern densities are mostly caused by dumping and farmyard clearance, and earlier material may be included, placing their attribution as 'sites' in doubt.

in field 0054, for example. This list is a useful starting point but more information can be extracted from Figure 8 if we now look along the rows and note which fields have clusters and ADABS at different periods. There are some fields with high densities of early medieval pottery which also have high densities of later material and, for that reason, some doubt must be placed on the reliability of the scatters to identify buried early medieval archaeology. For example, early medieval pottery from field 9990 might have been manured in with the high densities of 19th or 20th century pottery. Further support for this conclusion is provided by the ADABS for the other major artefact categories in Figure 9 which reveal high densities of post-medieval tile, glass, metalwork and coal in the same field. All of this material might have been manured into the field and our faith in field 9990 as the

	Rank → 1	2	3	4	5	6
Brick	1540	2766	4415	9990	3282	2736
Tile	9990	9400	4415	1264	3553	SMF
Slate	2736	2377	3282	2766	5160	0054
Clay pipe	7951	1540	2736	5568	0054	4100
Glass	9990	9611	4200	0054	4100	3282
Metal	9990	2736	4200	5700	1728	1264
Slag	3900	7951	1728	2736	9611	-
Oyster	0011	9611	2736	1728	5568	0054
Coal	9990	0054	9611	5700	4100	3900

Figure 9. Ranked ADABS (1 to 6) for other major artefact categories (brick to coal); for example, the highest density of metalwork, tile, glass and coal is from field 9990.

possible site of an early medieval farmstead is undermined.

The ADABS method has high potential and seems a most useful means of picking out fields with higher densities of material of different dates. However, the method does not explore differences in function or status of the former monuments and activities which generated the scatters. This might be achieved by considering further the composition of the pottery assemblage. Preliminary work at Shapwick suggests that ascribing function to scatters on the basis of form is hazardous, because so many sherds are small and abraded and medieval pottery can be multi-purpose. A more profitable line of investigation is fabric, and once again, following the procedure set out in the Ager Tarraconensis survey for Roman sites (Carrete *et al* 1995, 253), some comparison can be made between the percentages of fabrics found at 'sites' and the overall figures from the survey, so that pottery assemblages of exceptional fabric composition can be identified. This might be one way of locating ephemeral specialist activities such as shepherding, seasonal transhumance or tending beehives and, although this kind of work is only possible where the total pottery assemblage recovered from fieldwalking is substantial, the results can then be enhanced by applying other techniques such as geophysics.

The careful scrutiny of fieldwalking data is only one avenue of investigation for the identification of early medieval habitation sites in Shapwick parish. In fact, in many ways, it is not even the most important. Through complementary techniques such as retrogressive map analysis and the careful study of 14th- and 16th-century medieval surveys, earlier landscapes can be reconstructed. Archaeologically significant furlong names can then be located on these maps, especially those which may contain a habitative element such as OE *cot* and *hiwsisc*. Where these furlong names stand in the middle of later medieval open field systems they may mark settlement sites dated roughly 650-900AD which preceded the development of open field agriculture. It is the coincidence of high density scatters of pottery and other material with these furlong names which then triggers more intensive survey. Magnetometry, resistivity and soil analysis techniques (including phosphate analysis and heavy metal analyses of topsoils) have now been carried out widely across the parish, targeting these areas and often followed up by exploratory excavation.

INTERPRETING MEDIEVAL LAND USE PATTERNS

During the early medieval period there is little to suggest from the evidence at Shapwick that pottery or other household material was disposed of outside settlement sites. Arable land may have been fertilised directly by animals grazing on the fallow. However, from at least the 11th century and possibly after the laying out of the open field system, manuring appears to have been practised and it is this activity which accounts for much of the wide spread of abraded medieval pottery in the plough soil.

To make manure, farmyard waste was spread over a thick layer of earth or turf and well consolidated with a further capping of earth. According to Acland and Sturge (1851, 87) 'some of the most careful lay a mattress on the ground under the dung-heap, composed of ditch-scrapings, weeds, and refuse of all kinds, draw the carts over the heap to press it down well, and spread over it . . . a coverlid of earth, out of old hedges and cob walls'. Since the 16th century, Fitzherbert was stressing that 'dung should be meddled with earth' since 'it will last longer' (Fussell 1947) and this advice had, in turn, been borrowed from classical and continental writers (Woodward 1990, 254). It would be in this process that archaeological material was incorporated into the farmyard manure, specifically in the 'mattress' beneath the heap and the 'coverlid' over the top.

Manuring practices allow scatters of medieval pottery collected during fieldwalking to be used to reconstruct areas of the medieval open field (for example, Tingle 1991, for the Vale of the White Horse; Hayes 1991, for land-use hypotheses). The most sustained and perceptive discussion of land-use so far published is perhaps the East Brittany Survey where, for example, one fabric occurring in distinct zones of 50–60 ha was interpreted as indicating the distribution of 13th- and 14th-century arable farmland (Astill and Davies 1997, 122). For Shapwick similar conclusions can be drawn and verified by the documents, so that the distribution of certain fabrics can be used provisionally to mark out the area of former open field. The distribution of medieval sherds is far from even however, and the overall intensity of manuring seems to fall off

rapidly with distance from the medieval village. Nor do all medieval fabrics have precisely the same distribution and where, for example, 15th- and 16th-century pottery fabrics are the earliest found in fields on former wetland, this can help to date, and gauge the rate of, late medieval enclosure. Few fields seem to have gone out of cultivation.

For the later medieval period the general absence of pottery from a locality has been used to suggest dependency on pastoral and woodland resources (Ford 1987, 119; Gerrard and James 1996) and, where there are abrupt changes in the deposition of pottery, changes in land-use are implied (Ford 1987, 102). This logic may seem weak, because fields can be directly manured by folding animals. However, where the documentary evidence for medieval land-use is relatively good, as is the case for Shapwick, the extent of mapped semi-permanent woodland can be checked against the medieval pottery scatters. In theory, the areas of medieval woodland and fields containing contemporaneous pottery should be mutually exclusive.

During the 17th century there were changes in refuse disposal. The high densities of material in some fields seem to derive from the practice of cleaning out old farmhouses and closes in the village prior to re-building (Hollinrake and Hollinrake 1997) and then spreading the accumulated soils onto the fields, particularly those which were intensively cropped close to the village and alongside major tracks and roads (see Brown 1995 for a possible Leicestershire example). This process explains some of the highest densities of material in the fields to east and west of the village and emphasises the important point that medieval pottery may be spread into the ploughsoil in the 18th and 19th centuries together with post-medieval material. The ADABs procedure is helpful here in identifying coincidences of medieval and later material, though this can only be done when material of all periods is collected. Another clue lies in the higher ratios of other materials present such as brick, tile, slate and metal. These categories of artefact are not considered in detail here, but within the context of the Shapwick Project they are afforded equal attention (see Davies 1993 for the potential of stone and slate distributions from the East Brittany Survey).

There were changes too in manuring practices, particularly from the early 19th century when it was recommended that manure should be restricted to pasture land. Other waste products, such as lime, rags and ashes, were to be spread on the arable land (for example, see Billingsley 1797, 219). The despair of agricultural diarists and the lack of apparent correlation between densities of post-medieval pottery and land-use data from the 1839 tithe map suggests that best practice was rarely followed, at least at Shapwick (Gerrard and Gutiérrez 1997). Instead, farmers continued the medieval practice of dumping manure on conveniently situated arable fields and domestic refuse continued to be mixed in until the late 19th century, when domestic waste began to be disposed of separately.

Finally, some authors have attempted to monitor local population levels on the basis of quantities of pottery in the fields (for example, Tingle 1991). This assumes that access to pottery supplies, the disposal processes by which the pottery was delivered into the fields and post-depositional effects, not to mention our ability to recognise datable fabrics, all remain constant. This is certainly not the case at Shapwick where the enormous quantities of post-medieval and early modern material recovered during fieldwalking reflect changing fashions and manners, improved access to widely marketed products such as Pearlware, Creamware and slipwares and, most importantly, changes in rubbish disposal regimes.

CONCLUSIONS

Reading through Foard's study of fieldwalking in Northamptonshire (Foard 1978), many of the ideas expressed here have been around for a long time. While fieldwalking programmes have had a valuable role in SMR enhancement, they seem to have made almost no impact on academic literature for medieval archaeology. There are still only a few large published data sets and only a proportion of these treat the historic periods in any detail. Differences in sampling procedures and collection strategies inhibit meaningful comparisons.

This article suggests how much more information we could extract from the data if we were to think more carefully about the results. In an attempt to get away from the 'dots on maps' approach, the technique of ADABS seems a useful start when seeking to identify buried archaeology, particularly when the overall densities of collected material are low. Interpretation can be further enhanced by considering fieldwalking data of all periods, especially post-medieval, and by including all materials, not just ceramics. Future surveys might take this into account.

The Shapwick data also re-emphasise the simple point that so much material on the surface of the plough soil is introduced into the fields during manuring, dumping and clearance, rather than ploughed out of buried features. This material can also be the subject of fruitful enquiry; comparisons of sherd abrasion and fabric assemblages between fields hold many possibilities. Most of all, the value of the data is so much greater when archaeological evidence can be combined with cartographic and documentary sources to study changing patterns of

land-use. Surveys such as the East Brittany Survey demonstrate what can be achieved in a multi-disciplinary project and at Shapwick we hope to build on that promise.

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Footnotes

1. For comparison: East Berkshire Survey — 2126 ha; Maddle Farm — 1792 ha; Vale of White Horse — 437 ha. The mean overall pottery density at Shapwick is high at about 30 fragments per ha, with medieval pottery densities at 0.34 sherds per 100 square metres walked.

2. Full details of all the techniques in use together with preliminary results are to be found in the annual reports of the Shapwick Project and also of the Medieval Settlement Research Group.

3. The East Hampshire Survey found that light conditions had a major effect on the recovery of Romano-British pottery, but not medieval pottery (Shennan 1985, 39). Space and word length precludes publication of supporting statistics in this article. Readers are guided towards the Shapwick Project annual reports for further detail.

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* Department of Archaeology, King Alfred's College, Winchester SO22 4NR.

Résumé

Le projet "Shapwick" dans le Somerset, commencé en 1989, pour une durée de dix ans, est une enquête de paysage multidisciplinaire, centrée surtout sur l'évolution des plans d'habitats médiévaux. Un des buts du projet est d'examiner les méthodologies oppropriées pour la recherche sur des sites ruraux et historiques.

Ce papier offre quelques pensées préliminaires sur l'efficacité des enquêtes sur le terrain comme moyen d'identification de gisements archéologiques enterrés et de pratiques d'agriculture médiévale.

Zusammenfassung

Das Shapwick Projekt, Somerset, begonnen 1989 als multidisziplinäre Landschaftsforschung über einen Zeitraum von zehn Jahren, konzentriert sich insbesondere auf die Entwicklung früh- und spätmittelalterlicher Siedlungsmuster. Eines der Ziele ist, geeignete Methoden für die Untersuchung historischer Landschaften zu entwickeln. Dieser Artikel legt ein paar vorläufige Gedanken zur Effizienz der Feldbegehung als Mittel, unterirdische, archäologische und landwirtschaftliche Praktiken des Mittelalters zu erkennen, dar.