

Farming in Whittlewood AD43-1450: the Archaeological Perspective

Medieval farming practices have left a strong, if not indelible imprint, on the modern landscape. Whilst hundreds of kilometres of hedgerow may have been removed to accommodate intensive farming methods, and deep ploughing since the Second World War has obliterated large areas of former ridge and furrow, it is still possible to detect the medieval inheritance which has shaped today's landscape. Indeed, it might be argued that with the exception of topography, it was the medieval farmer who contributed most to the creation of Britain's distinct regional variations which are now so celebrated and protected. From the monocultural economies of pastoralism or arable production to the mixed economies of woodland and lowland vale, each medieval farming regime variously affected the range of flora and fauna, and the amount of woodland, pasture and ploughland, in every part of the country. The longevity of this physical remodeling of the landscape has meant that with the aid of artefacts, systematic fieldwork, and the analysis of aerial photographs and cartographic sources, large parts of the medieval rural landscape can still be reconstructed.

Earthwork evidence is particularly rich. By combining ridge and furrow evidence from aerial photographs, field survey – particularly the recording of headlands where ridge and furrow has been ploughed flat – and using field books and early maps, the arrangement of many township open fields have been mapped.¹ In the Midland belt, for example at East Haddon, Brixworth and Ashby St Ledger (Northants), over 90% of the total area of each of these townships was at some time brought into cereal cultivation. Beyond the arable land in these champion zones, areas of managed woodland can also be reconstructed through the survival of the banks and ditches which surrounded individual coppices.² In the so-called ancient landscapes, more irregular fields systems have also been identified, many of which, like the celtic fields of south-western England³ and co-axial fields of Essex, appear to be of great antiquity.⁴ Other elements of planned landscapes in Essex have been suggested to date from the late Saxon period.⁵ The mapping of drove roads and the location of seasonal settlements such as the upland sheilings has also aided the reconstruction of regional economies based on pastoralism and transhumance.⁶ Within this wide spectrum of farming

¹ Hall, D. 1995 *The Open Fields of Northamptonshire* Northamptonshire Record Society **38**. e.g. Rogerson, A. *et al.* 1997 *Barton Bendish and Caldecote: fieldwork in south-west Norfolk* East Anglian Archaeology Report no. 80

² e.g. Salcey Forest: Hall, D. 2001 'The Woodland Landscape of Southern Northamptonshire', *Northamptonshire Past & Present* **54**, 33-46

³ Todd, M. 1987 *The South-West to AD 1000* (Longman, London), 130-1 & 156.

⁴ Williamson, T. 1987 'Early Coaxial Field Systems on the East Anglian Boulder Clay', *Proceedings of the Prehistoric Society*, **53**, 419-31. Rippon, S. 1991 'Early Planned Landscapes in south-east Essex', *Essex Archaeology and History* **22**, 46-61

⁵ Rippon, S. 1991 'Early Planned Landscapes in south-east Essex', *Essex Archaeology and History* **22**, 46-61

⁶ Hooke, D. 1998 *The landscape of Anglo-Saxon England* (LUP)

regimes individual monuments such as mills which attest to cereal production⁷ and sheepcotes to pastoral communities,⁸ can add to our picture of land exploitation, while dovecotes,⁹ fishponds,¹⁰ rabbit warrens,¹¹ and deer parks¹² also provide valuable insights into more specialized and socially elevated types of farming.

It has long been recognised that systematic fieldwalking holds the potential to locate precisely elements of the medieval landscape, although it must be noted that the method has largely been used to reconstruct settlement pattern rather than landuse.¹³ Most easily identifiable of the four main medieval land types – arable, woodland, pasture, and meadow – are the areas of arable cultivation. The manuring of fields with household rubbish containing fragments of pottery has left a recoverable record of this practice in the modern ploughsoil. The mapping of these low-density scatters can provide a picture of the minimum, if not maximum, acreage under the plough at any period. Alternative sources of manure, such as the folding of animals onto fallow arable, or the use of farmyard rather than domestic manure, or the use of nutrient restoring crops such as peas and other legumes, will have left no archaeological trace. It follows therefore that the absence of ceramic evidence in the ploughsoil cannot be used as empirical proof that a particular parcel of land remaining outside the cultivated zone. But used in tandem with other sources of information, and with an understanding of local topography, negative evidence can be useful in the probable identification of areas of woodland, meadow, and pasture.

Faunal remains recovered from large-scale rural settlement excavation have added much to our knowledge of the village economy at different periods, and have led to a greater understanding of the exploitation of their hinterlands and the resources at the disposal of villagers of all social status. The close relationship between fauna and landuse is clearly identified in the historical, as well as the archaeological, record and is made explicit, for example, in the Domesday Survey of Buckinghamshire and other counties where woodland was assessed by the number of swine it could support. The evidence, however, must be treated cautiously. Zooarchaeological studies have shown that many factors, often

⁷ Watts, M. 2002 *The archaeology of mills and milling* (Tempus, Stroud).

⁸ Dyer, C. 1995 'Sheepcotes: Evidence for Medieval Sheepfarming' *Medieval Archaeology* **39**, 136-164.

⁹ Hansell, P. 1988 *Doves and Dovecotes* (Millstream, Bath).

¹⁰ Aston, M. (ed.) 1988 *Medieval Fish, Fisheries and Fishponds in England* British Archaeological Report **182**, 2 vols.

¹¹ Bond, J. 1994 'Forests, Chases, Warrens and Parks in Medieval Wessex', in Aston, M. & Lewis, C. *The Medieval Landscape of Wessex* (Oxbow, Oxford), **XXXX**; Linehan, C. 1966 'Deserted Sites and rabbit-warrens on Dartmoor, Devon', *Medieval Archaeology* **10**, 113-44; Tittensor, A. & Tittensor, R. 1985 'The rabbit warren at West Dean near Chichester', *Sussex Archaeological Collections* **123**, 151-85.

¹² E.g. Cantor, L & Wilson, J. 1961-70 'The Medieval Deer-Parks of Dorset, I-IX', *Proceedings of the Dorset Natural History and Archaeology Society* **83-91**.

anthropogenic, can affect bone assemblages. For instance, the sale of surplus stock to market might mask the supremacy of one domestic animal over another. Or tight restrictions on hunting might restrict the number of wild animals taken but might not represent their actual availability. Taking these factors into consideration, however, it remains possible to identify regional and cultural variations that represent real differences in the economic bases of different communities and how they farmed the land or exploited less managed resources.

Palaeoenvironmental evidence is also adding to the picture of the medieval countryside and farming regimes. Pollen diagrams can help to reconstruct the ratio of woodland:arable:pasture in any locale although there remains large parts of the country for which no such evidence is available.¹⁴ Our understanding, therefore, of major landscape changes remains far from complete. In particular, the extent and/or regeneration of woodland in the post-Roman period is poorly understood and often contradictory and the moment of open field creation remains archaeologically largely invisible in the pollen record, although cores taken from Hockham Mere (Norfolk) appear to show a rise in cereal pollen between AD 650-850.¹⁵ Study of alluvial deposits partly fills the gap left in the palaeoenvironmental record. In the Nene valley (Northants), for example, alluviation appears to increase dramatically in the late Saxon period suggesting a period of soil instability probably linked to an increase in the acreage brought under the plough.¹⁶ A similar picture emerges from alluvial deposits in the Thames basin, where an increase in alluviation can be identified in the Iron Age. This continues into the Romano-British period, but declines in the four centuries AD400-800. Thereafter alluviation rates begin to rise once more.¹⁷ By contrast, there is little sign of alluviation in the Peterborough Fens prior to the 'Saxon-Medieval' period, but nevertheless this accords with the later expansions of arable seen in the Thames and Nene valleys.¹⁸ Archaeobotanical evidence preserved in waterlogged contexts has also added additional insights into the local environment. At West Cotton (Northants), the presence of vetches and horse beans might suggest that a three-course rotation system had been established by the eighth or early ninth century.¹⁹ Other more general changes can be

¹³ Foard, G. 1977 'Systematic fieldwalking and the investigation of Saxon Settlement in Northamptonshire', *World Archaeology* **9 no. 3**, 357-74.

¹⁴ Dark, P. 2000 *The Environment of Britain in the first millennium A.D.* (Duckworth, London), *passim*.

¹⁵ Hooke, D. 1998 *The landscape of Anglo-Saxon England* (LUP), 145. Bennett, 1983

¹⁶ Brown, T. & Foard, G. 1998 'The Saxon landscape: a regional perspective', in Everson, P. & Williamson, T. *The archaeology of landscape* (MUP), 67-94: 82.

¹⁷ Blair, J. 1994 *Anglo-Saxon Oxfordshire* (Sutton, Stoud).

¹⁸ Hall, D. 1985 'Survey Work in Eastern England', in Macready, S & Thompson, F. (eds.) *Archaeological Field Survey in Britain and Abroad*, Society of Antiquaries of London Occasional Paper (New Series) **6**, 25-44, 34.

¹⁹ Campbell, G. 1994 'The preliminary archaeobotanical results from Anglo-Saxon West Cotton and Raunds', in Rackham, J. (ed.) *Environment and economy in Anglo-Saxon England* (York), 65-82.

discerned such as a shift from spelt to rivet wheat in the late Saxon period.²⁰ At Westbury (Bucks), on the other hand, water sump deposits contained a diversity of seeds derivative of an open disturbed habitat with few hedge/woodland/scrub species and only a single cereal specimen.²¹

The archaeological evidence for farming in the Whittlewood area currently rests on two main sources of evidence.²² First, the earthworks: several blocks of ridge and furrow survive, notably in the southern and central part of the project area – Akeley, Leckhampstead, Lillingstone Lovell, Deanshanger, and Passenham – although there are important survival in the parishes of Silverstone and Whittlebury to the north. Within the Northamptonshire parishes, that is parishes that were not disafforested until the nineteenth century, medieval coppice banks and ditches also survive in number, if in mutilated form, especially on the Wakefield Lodge Estate. The northern parts of Stowe, Lillingstone Dayrell and Leckhampstead also contain similar evidence. Secondly, ceramic evidence recovered during fieldwalking: quantities of medieval and earlier pottery have been found on the modern ploughed fields. To date, 700ha have been surveyed (7% of the project area). This evidence has been used to complement the earthwork evidence and the early cartographic sources for a fuller reconstruction of the landscape of Whittlewood in the later middle ages, and importantly has allowed changes in farming strategies to be traced back into the Romano-British period. This chronological depth is one of a number of critical contributions that archaeological survey has been able to add to discussion of the farming regime in Whittlewood and is the starting point for the following review of the evidence. In addition the following themes will be tackled: the location and extent of arable production in the later middle ages; differential manuring practices; the origins of the open fields; post-Roman woodland regeneration; late medieval management of woodland; and the identification and location of meadows and pasture.

Evidence for farming AD43- c. 800AD

The density of Romano-British settlement sites within the Whittlewood area (> 1 per km²) suggests that the countryside was heavily exploited. The ploughsoil ceramics make clear that the period saw an increase in the number sites from c. 100AD through to the first quarter of the fourth century, when evidence of villa abandonment accompanied, or was the prelude for, a decline in rural activity and perhaps a commensurate fall in population. Little, however, is

²⁰ Astill, G. 1997 'An archaeological approach to the development of agricultural technologies in Medieval England', in Astill, G. & Langdon, J. (ed.) *Medieval farming and technology: the impact of agricultural change in northwest Europe* (Leiden, Brill), 193-223, 199.

²¹ Letts, J. 'An analysis of waterlogged plant remains from Westbury', in Ivens, R., Busby, P. & Shepherd, N. 1995 *Tattenhoe and Westbury: Two Deserted Medieval Settlements in Milton Keynes* Buckinghamshire Archaeological Society Monograph Series 8, 418-25

²² It is hoped that pollen analysis from a peat and mineralized core from Kingshill Farm, Syresham, will provide additional information at a later date.

known of the villa economies largely because many of these sites – for example those of Foxcote, The Gullet (Potterspury) and Wakefield – were discovered and partially excavated before the introduction of many of the scientific techniques now. The most recent villa excavation, at Deanshanger, undertaken in the 1960s has not been fully published and interim reports provide little evidence that might illuminate the economic basis of the site or its local environment.²³

The reconstruction of the Romano-British landscape and the farming regimes that created it thus relies heavily on fieldwalking material. Extensive survey has revealed a number of prescient themes. First, away from the pottery concentrations which in all probability represent settlement, the majority of fields surveyed contain low-density pottery scatters. The implication must be that large parts of the area were being ploughed and manured for the cultivation of cereal and other crops. Secondly, where it has been possible to walk complete zones between two or more contemporary settlement sites, it can be shown that there is no break in the pottery scatters. It must be concluded, therefore, that large swathes of the area were covered by continuous arable fields unpunctuated by areas of woodland or grass. Thirdly, the discovery of Romano-British pottery scatters in fields that either produced no medieval ceramics or in areas depicted as woodland on the earliest extant map of Whittlewood (c.1608) suggests that the area of arable cultivation was more extensive and subsumed more acres than at any other period. Fourthly, and by contrast, some fields *have* failed to produce pottery of this date. Here the negative evidence must point to areas which remained beyond the reach of the Roman plough. That these areas often coincide with late medieval woodland perhaps suggests similar usage at this earlier period. Thus on the main interfluvies away from the lighter soils in the valley bottoms, the Roman and native populations appears to have retained small areas of woodland, crucial to provide the fuel used in the production of pottery, an activity attested by kilns in Stowe and Syresham, and for domestic use, as well as the raw material for charcoal production, and timber for local buildings, and probably for supply to the region's urban centre at Towcester. Finally, there is some evidence to suggest that some small Romano-British sites made their living from this woodland resource rather than arable production. In the northern part of Whittlebury, for instance, one concentration of pottery, probably marking the site of a small farmstead, stands in isolation, lacking the surrounding thin halo of pottery indicative of cultivated fields observed elsewhere. The implication must be that this site lay in a small woodland clearing – again the area can later be shown to be wooded – rather than set within an open expanse of arable fields.

It is far from clear what changes in farming occurred in the immediate post-Roman period. The earliest medieval ceramic fabrics can be no more precisely dated than to AD450-800.

²³ *Northamptonshire Architectural and Archaeological Society Reports* **63** (1960-6), 22-8.

There are indications, however, that the period saw fundamental changes. Two many be cited here. With the exception of a large Roman site north of Leckhampstead, no other the twenty or so Romano-British settlements in Whittlewood has produced in addition the handmade pottery sherds of the early middle ages. This provides clear evidence for a break in settlement pattern, it might also suggest a further decline in the rural population, and should probably be linked with concomitant changes in farming practices. Certainly it would appear that the local population was insufficient to maintain such large areas of arable. Indeed, the collapse of the market economy, the decline in demand from the local urban centre, and the less pressing need to provide surplus grain for distribution further abroad, would by default have led to a contraction in the area of arable land. Such a scenario fits neatly with the second vital piece of evidence. If fieldwalking results indicate a restricted area of woodland during the Romano-British period, the Domesday Survey of 1086 records a heavily wooded landscape. Woodland regeneration, therefore, must have taken place during the intervening centuries. Decline in population following the Roman retreat and the resultant less intensive exploitation of the land might have provided the ideal conditions under which such woodland growth could take place. It remains unclear, however, whether this regeneration occurred naturally, spreading from unmanaged blocks of Roman woodland or, as has been suggested elsewhere, this regeneration was actively encouraged.²⁴

The limited evidence that is available warns against exaggerating the scale of population retreat and the total abandonment of all arable production. Perhaps much earlier but certainly by 800, it would appear that many of the principal settlement foci were already forming. And at Leckhampstead, the possibility remains of some settlement continuity between the two periods. Beyond these settlements, isolated pottery sherds hint at the manuring of arable fields at the same date. Indeed, as shall be seen, fieldwalking has produced more pottery of 450-800 date than for the period 800-1000. Shifts in the emphasis of farming might also have occurred leaving little or no archaeological trace. The increase in wood pasture might have encouraged a concomitant economic change from arable cultivation to pastoralism. In fact the lack of woodland elements within Whittlewood place-names – for example, only Akeley and Puxley the only two principal place-names in *leah* – might also imply that permanent settlements and their farming systems were becoming established before woodland regrowth had reached its climax. Unfortunately neither the pollen record nor faunal remains which hold the potential to elucidate this process currently fail to provide additional evidence. Nevertheless, the following points emerge. There is clear evidence of a reduction in population levels and a contraction of the area under the plough. This retreat, however, was not total. Fields appear to have been ploughed and manured in close proximity to small settlement foci. Beyond these, the area of woodland or woodland pasture appears to have increased, encouraging or encouraged by a shift of emphasis from large-scale cereal

²⁴ Hooke, D. 1998 *The landscape of Anglo-Saxon England* (LUP), 139.

production for surplus to a more mixed and localized regime of arable cultivation and animal husbandry. Farming practices in Whittlewood can thus be seen to change in the post-Roman centuries, but the landscape never appears to have been totally abandoned.

The Location and Extent of Arable Production 1086-c. 1350

In contrast to the period 450-800 which saw a reduction in arable and an increase in woodland pasture, the post-Conquest period was characterized by an increase in the area of arable and a reduction in the area of woodland, trends further encouraged by the development of markets and the growth of urban centres. The origins of these changes in farming almost certainly lie in the period 800-1086, as will be argued below, but before turning to these critical events, an explosion in archaeological evidence after the Norman Conquest allows the later stages of this transformation to be mapped with accuracy. The landscape of the twelfth and later centuries might then be contrasted with its earlier antecedent in the period 450-800 exposing the processes by which it metamorphosed in the intervening centuries.

Every parish within the project area preserves at least some ridge and furrow, the product of ploughing individual strip holdings within the open fields. This provides clear evidence for the location of many of the furlongs which made up these large fields, to which may also be added additional strips and furlongs identifiable from aerial photographs and field survey. Of course, each ridge represents the last ploughing episode before the abandonment of arable cultivation and the laying down of these areas to permanent pasture. But whilst ridge and furrow can best help to reconstruct the late medieval farming scene, the arrangement of furlongs hold clues to the development of these fields. In other parts of Northamptonshire and further afield, 'long' furlongs have been recognized, thought to represent a simple and single phased reorganization of the landscape.²⁵ Individual strips have been mapped which run over a distance of 1km or more. These appear later to have been divided into shorter lengths more akin to norm. There is no evidence for these 'long' furlongs in Whittlewood. Rather the fields appear to have been divided from the outset into interlocking furlongs, within which the strips are almost always arranged to run downslope with the natural topography. Certainly, on the heavy glacial boulder clays that dominate the area, this arrangement must have greatly aided drainage. Interlocking furlongs may be indicative of the piecemeal addition of extra parts of the fields as the area of arable was extended over time towards the limits of each township territory, a phenomenon noted elsewhere within former woodland pasture. In places the open fields reached the edge of the territory and the fields of neighbouring townships might also interlock. Parish boundaries between Potterspury and Yardley Gobion, and between Leckhampstead and Foscote, follow crenellated courses

²⁵ Hall, D. 1995 *The Open Fields of Northamptonshire* Northamptonshire Record Society **38**.

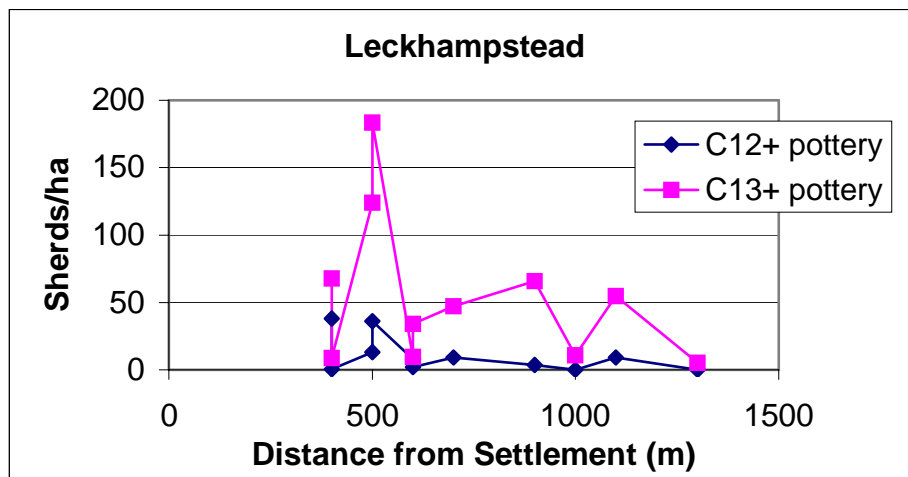
showing little regard for local topography suggesting that they were established along the headlands of pre-existing and abutting furlongs.

Where the upstanding archaeological record for arable cultivation has been destroyed by modern ploughing, fieldwalking adds more detail to the incomplete picture provided by the ridge and furrow. Well over 50% of the fields surveyed have contained thin scatters of medieval pottery deriving from domestic manure sources. Mapping these scatters not only provides evidence for the extent of the open fields, but crucially provides valuable dating evidence. Statistical analysis of the pottery assemblage shows it to be dominated by the locally-produced Potterspurty Wares (1250+), representing over 80% of the total medieval pottery count. The remainder is largely made up of Miscellaneous Sandy Wares (1100-1400) and Shelly Wares (1100-1400) imported from further afield, with smaller quantities of Brill/Boarstall Wares, Oxford Wares and Lyvenden/Stanion Wares. The broad date ranges for these fabrics makes it difficult to trace the evolution of the open fields in the three centuries following the Norman Conquest with precision. However, it is possible to show that those fabrics – in particular the shelly and sandy wares – which span the twelfth century, are largely recovered from those fields which lie closest to known medieval settlement (Table 1; Graphs 1-3). The more remote parts of the open fields appear to contain only pottery of thirteenth century date or later. This might suggest that the fields were still being expanded as population increased throughout the thirteenth and early fourteenth centuries.

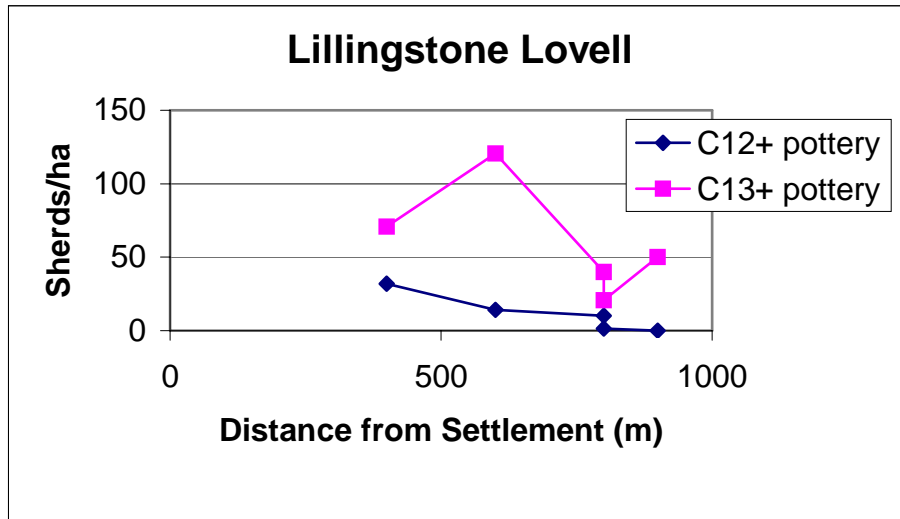
<i>Field</i>	<i>Distance from Settlement</i>	<i>C12+ Sherds/ha</i>	<i>C13+ Sherds/ha</i>
AK1	500m	2.4	23.8
AK2	800m	0.9	3.2
AK3	900m	0.0	50.0
AK4	1000m	5.0	32.3
AK6	1200m	0.0	14.3
AK5	1300m	0.0	10.2
LD2	1000m	2.0	34.6
LE1	400m	38.0	67.6
LE11	400m	0.4	8.8
LE8	500m	13.0	123.9
LE10	500m	36.0	183.3
LE12	600m	8.0	9.4
LE2	600m	2.0	33.9
LE4	700m	9.0	47.0
LE6	900m	3.7	65.6
LE14	1000m	0.0	10.5
LE7	1100m	9.0	54.7
LE13	1300m	0.0	5.1
LL1	400m	32.0	70.9
LL7	600m	14.0	120.4
LL2	800m	10.0	40.0
LL3	800m	1.3	20.6
LL6	900m	0.0	50.0

ST3	200m	82.0	31.0
ST2	600m	43.8	275.0
WH1	500m	7.1	23.1
WI5	100m	17.0	18.0
WI9	200m	12.4	94.6
WI2	500m	8.3	18.3
WI4	500m	6.0	34.3
WI3	600m	4.0	23.1
WI6	600m	2.8	44.7
WI11	600m	2.1	16.8
WI10	800m	0.0	4.6
WI8	1200m	0.0	0.7
WI7	1500m	0.0	1.2
WI1	300m	0.0	1.4

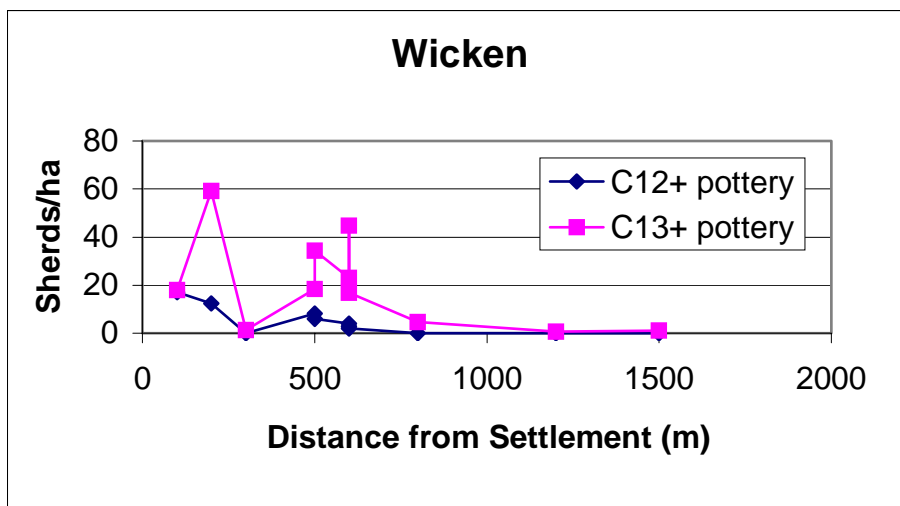
Table 1: Open field pottery assemblages arranged in parishes by distance from known settlement, showing number of sherds per hectare of C12+ and C13+ pottery fabrics.



Graph 1



Graph 2.



Graph 3.

Manuring Practices

Beyond simply establishing the extent of arable production in the medieval Whittlewood, and providing a chronology for the late periods of expansion, study of the pottery scatters reveals more subtle variations that have rarely been identified or accounted for elsewhere. There are a number of areas of potential interest. First, the amount of pottery deposited within manure on the arable land can be shown to decline with distance from settlement. Whether this represents a system of infield and outfield cultivation, with areas close to settlement kept in good heart and in constant cultivation whilst the peripheral areas were fallowed in rotation, or whether the shorter period that these areas had been under the plough did not allow pottery to accumulate in such great quantities, or whether the expense of carting manure from domestic sources over larger distances precluded such an operation, or whether the opportunity to fold animals directly on the more distant fields from nearby pastures meant that

less farmyard manure was required, each might be postulated as the determinant in this observable pattern.

Secondly, the range of fabrics present in the ploughsoil assemblage declines with increased distance from the settlement areas. As has been proven, fields close to settlement were almost certainly ploughed over longer periods than the more remote areas, allowing a wider range of available and fashionable fabrics of differing dates to be deposited here, whilst the extension of the fields during period when locally-produced Potterspurty wares swamped the assemblage is reflected in the homogenous single fabric range of pottery found further way from settlement. Interestingly, the ratio of fabrics found in the ploughsoil assemblages does not follow that found within the settlements (Table 2). As the table shows, within Leckhampstead's fields Potterspurty Wares (F329) predominate when compared with the quantities of Shelly Coarse Wares (F330) and Miscellaneous Sandy Wares (F360) present. The sandy wares, in particular, appear to be under-represented in the field assemblages. Whether this reflects actual depositional processes or the post-depositional survival rates of different fabric types, it is clear that field assemblages cannot be used to provide an accurate picture of domestic pottery use.

LECKHAMPSTEAD	F329	F329 %	F330	F330 %	F360	F360%
Open Fields	700	87	52	6.5	52	6.5
Settlement (fieldwalked)	770	65	198	16.5	215	18.5
Settlement (test pits)	423	47.5	142	16	317	36.5
Total	1893		392		584	

Table 2: Number of medieval fabrics and percentage of total medieval assemblage from different areas of Leckhampstead (Bucks).

Thirdly, the levels of manuring vary across individual fields. Some areas contain proportionally more pottery than others. In certain cases it is possible to suggest that this differential patterning results from the way that fields were manured. In north Whittlebury, for example, a concentration of pottery at the medieval access into one assart suggests that household rubbish carted from nearby Paulerspury was deposited at the entrance to the field and then spread laterally from this dump. Likewise, in a number of fields it would appear that pottery densities decline with increased distance from the headland, suggesting that manure was dumped at the end of an individual selion before being distributed along its length. Further work might also identify whole furlongs within individual fields which may have been purposely selected to receive proportionally more or less domestically sourced manure, a

practice observed elsewhere, for example in Admington (Warks) and Compton Verney (Warks).²⁶

Finally, there is a close correlation between the amount of pottery present in manure scatters and the size of population of the communities farming these areas. The sherd count per hectare found on the former open fields of villis such as Leckhampstead, with high recorded populations throughout the period 1086-1350, is much higher than for the neighbouring vill of Akeley, which appears to have contained a consistently lower population. The correlation also holds true when the results obtained from communally-held fields are compared with fields held in severalty. Thus at Akeley, the village fields (AK1-6) appear to have received proportionally more pottery than the fields created around the thirteenth century manor of Stockholt (AK7-14). Extremely low densities of pottery were also present in the ploughsoil on the ecclesiastical grange of Monksbarn in Whittlebury farmed from Luffield Abbey (WH4-

<i>Field</i>	<i>Type</i>	<i>Popln 1086</i>	<i>Popln c. 1300</i>	<i>F329</i>	<i>F330</i>	<i>F360</i>	<i>Sherds/ha</i>
LE1	Open	30+	82	21	2	11	100
LE2	Open	30+	82	18	0	1	34
LE4	Open	30+	82	96	11	9	53
LE6	Open	30+	82	65	1	3	69
LE7	Open	30+	82	94	9	5	57
LE8	Open	30+	82	237	17	8	133
LE10	Open	30+	82	135	12	14	206
LE11	Open	30+	82	18	1	0	7.6
LE12	Open	30+	82	12	5	6	16.7
LE14	Open	30+	82	17	0	0	8.9
							Av. 68.5
WI1	Open	24	41	1	0	0	1.4
WI2	Open	24	41	23	10	5	21.1
WI3	Open	24	41	14	1	1	25
WI4	Open	24	41	12	0	2	40
WI5	Open	24	41	18	7	10	35
WI6	Open	24	41	44	2	1	47
WI9	Open	24	41	83	5	6	105.9
WI10	Open	24	41	6	0	0	4.6
WI11	Open	24	41	48	3	3	18.9
							Av. 33.2
LL1	Open	11	41	63	14	18	85
LL2	Open	11	41	34	6	4	44
LL3	Open	11	41	31	0	2	21.3
LL6	Open	11	41	22	0	0	47.8
LL7	Open	11	41	56	1	6	128.6
							Av. 65.3
AK1	Open	8	22	9	0	2	11

²⁶ Dyer, C. 1998a 'Medieval pottery from the Admington survey: some preliminary conclusions', *MSRG Ann. Rep.* **13**, 24-5; Dyer, C. 2000 'Compton Verney: Landscape and People in the Middle Ages', in Bearman, R. (ed.) *Compton Verney: A History of the House and its Owners* (The Shakespeare Birthplace Trust, Stratford-upon-Avon), 49-94.

AK2	Open	8	22	7	3	0	2.9
AK3	Open	8	22	11	0	0	50
AK4	Open	8	22	29	0	3	32
AK5	Open	8	22	4	0	0	6.8
AK6	Open	8	22	4	0	0	14.3
							Av. 19.5
AK7	Several	0	1	0	1	1	15.4
AK8	Several	0	1	7	0	2	9
AK9	Several	0	1	5	0	0	4.5
AK11	Several	0	1	4	0	13	17
AK13	Several	0	1	1	0	0	0.6
AK14	Several	0	1	6	0	7	22.4
							Av. 11.5
WH4	Several	0	2	1	0	2	2.9
WH5	Several	0	2	0	0	1	2
WH8	Several	0	2	24	1	1	24.8
WH10	Several	0	2	4	0	0	3
							Av. 8.2

Table 3: Field type, population levels, and number of sherds per hectare for fields with known histories.

11) (Table 3). The demonstrably close relationship between population size and pottery density in areas where documentary information provides the vital information might then be used to interpret areas where no such population evidence exists. Thus it might be possible to categorize areas as falling within the main block of open fields, or lying in arable lands farmed independently of these fields, or even assarts farmed in severalty.

The Origins of the Open Fields

Archaeology has contributed remarkably little to the debate on the origins of the open fields.²⁷ Where it has, this has been restricted to the identification of the modification of individual selions and furlongs,²⁸ to the location of farmsteads and small hamlets lying under later ploughland which must have been abandoned before the fields were laid out, thus providing a *terminus post quem* for their reorganization,²⁹ and growing palaeoenvironmental evidence for increased cereal pollens preserved in peat and waterlogged deposits, and increased alluviation resulting from soil instability as larger areas were brought under the plough.³⁰ Increases in cereal pollen and alluviation rates may point to an extension of the ploughland, but it need not follow that this increase was linked to a major change in how the land was

²⁷ Astill, G. 1997 'An archaeological approach to the development of agricultural technologies in Medieval England', in Astill, G. & Langdon, J. (ed.) *Medieval farming and technology: the impact of agricultural change in northwest Europe* (Leiden, Brill), 193-223, 193.

²⁸ See *supra* p. 7

²⁹ E.g. Hall, D. & Martin, P. 1979 'Brixworth, Northamptonshire: an intensive field survey', *Journal of the British Archaeological Association* **132**, 1-6.

³⁰ See *supra*, p. 3

farmed. The growing body of evidence for field systems of all dates obtained from fieldwalking has yet to be fully examined to assess whether this has the potential to answer some of the outstanding questions, but the Whittlewood data suggest that ploughsoil ceramic assemblages might provide a chronological context for this change.

The preceding assessment of the Whittlewood data has shown that whilst the simple linear formula (concentrations of pottery = settlement sites; low-density spreads = manuring of arable; no pottery = non-arable landuse) holds true, there are numerous other anthropogenic factors which contribute to producing the complex and variable distribution of material on ploughed fields or its absence in areas of alternative landuse. In Whittlewood, the field assemblage, that is the material deposited on the arable fields, is dominated by late medieval (1100+) pottery and Romano-British wares. For the early medieval period, the picture is less clear. Small, but not insignificant, amounts of early/middle Saxon handmade wares have been recovered from a number of fields, but there is an almost total absence of late Saxon (800-1000) material. The later fabrics, in particular St Neots Wares, are highly friable and may have been destroyed by later ploughing. That this pottery was being used by local communities is proved by the recovery of significant number of sherds during test pitting. Its absence from the fields may therefore be a taphonomic quirk. On the other hand, it may represent a real depositional shift, that pottery of this date was never spread onto the fields. Leaving aside these complications for a moment, using the simple pottery presence/absence formula the following landscape reconstruction would be postulated: large areas of arable cultivation in the Romano-British period (pottery present); less extensive arable cultivation in the early/middle Saxon period (pottery present); woodland or pastoral economic base in the late Saxon period (pottery absent); extensive areas of arable cultivation in the post-Conquest period (pottery present).

But, as has already been noted, ceramics only appear in the ploughsoil assemblages where these have been manured with material deriving from domestic sources. And since there are other sources of manure which contain no pottery, for example farmyard manure from stalled animals, or from the folding of animals onto fallow arable, low-density pottery scatters can only be used to reconstruct the minimum extent of arable cultivation at any one period. Yet despite differences in the quantity of material being deposited, and differences in the areas where this material is found, the Romano-British period, the early/middle Saxon period and the post-Conquest period all appear to share in common the fact that household refuse was used to restore the heart to the soil. It is only in the late Saxon period, when no pottery appears to arrive in the fields, that this practice does not seem to have been followed.

It is clear from later evidence that the adoption of the open field system was integrally linked with changes in animal husbandry. Increased areas of arable fields reduced the amount of

common pasture available. The process of field rotation freed up large areas of each territory on a biannual or triannual basis depending on the number of fields providing additional grazing on the fallow land. These fields in turn benefited from the input to the soil of nutrient-rich animal dung. This reliance on animal manure rather than domestically-sourced manure would have preempted the problems of manuring parts of field now located at distance from the more nucleated settlements. There are clear reasons, therefore, why the adoption of open fields would have led to changes in manuring practices. And this appears to be visible in the archaeological record – the period when pottery ceases to be deposited. Thus a second scenario might be proposed which would fit the available evidence. In the Romano-British period, the area was farmed from individual farmsteads located at regular intervals across the landscape. Held individually rather than in common from these farms, the fields were never located at any distance from estate centre, and would have been able to draw on domestic manure to improve the quality of the plough soil. In the early/middle Saxon period, an equally dispersed settlement pattern and the continuing practice of farming nearby fields in severalty would have been sustained by following similar manuring practices. With the creation of the open fields, however, would have forced these practices to change. The greater expense of carting manure from farm to now remote parts of the larger field system would have largely precluded this activity, whilst the shortfall would now be balanced by the increased opportunity to fold animals onto the fallow. The negative evidence of the ploughsoil assemblage thus places the change in manuring practice in the period 800-1000 and so by association the origins of the open fields must lie here too. In the later medieval period, perhaps resulting from the need to retain fertility in the soils to support levels of arable yield, or from efforts to increase yields to pay higher rents or provide greater surplus for sale at market or to growing urban centres, it would appear that the fields began to benefit from dual manuring, from domestic sources containing both more pottery, and pottery more resistant to the abrasions of the plough, and from the folding of animals onto these areas when left fallow. Once again, therefore, the arable fields become archaeologically visible in the ceramic record.

The lack of late Saxon pottery spread on the fields of Whittlewood is not unique. Similar patterns can be observed in the scatters around Higham Ferrers (Northants),³¹ and were also noted at Wharram Percy (Yorks). Here the excavators noted the lack of material of Roman or medieval date found within the tofts, but its presence on the ploughlands, whilst in the Saxon period, by contrast the pattern was reversed – tofts containing large amounts of refuse, fields wherein there was an absence of Saxon pottery.³² It is clear from these examples, therefore, that a reassessment of ploughsoil assemblages in areas of open field agriculture

³¹ Shaw, M. 1991 'Saxon and Earlier Settlement at Higham Ferrers, Northamptonshire', *MSRG Ann. Rep.* **6**, 15-19

³² Beresford, M. & Hurst, J. 1990 *Wharram Percy Deserted Medieval Village* (Batsford, London), 44.

where pottery sequences are sufficiently well dated, might pay dividend and provide greater understanding of chronology and process of this critical farming transition.

Post-Roman Woodland Regeneration

The strongest evidence of the regeneration of woodland in the post-Roman period is the identification of both settlement sites and low-density pottery spreads indicative of manuring below the woodland areas depicted on the Whittlewood map of c. 1608.³³ Both historical evidence and archaeological field survey proves that the woodland depicted in the seventeenth century had much more ancient origins. Rather than depicting a newly-created landscape, the map shows a mature landscape of several centuries standing. In other areas too, woodland can be seen to have expanded after AD400 to cover earlier settlements. Both Wychwood (Oxon)³⁴ and Rockingham Forest (Northants)³⁵ have produced similar evidence. The process by which this woodland regeneration took place, however, remains far from clear. Palaeoenvironmental evidence will add to the picture, but there is a lack of this type of evidence from the Midlands as a whole. Further insight must therefore await more research in this area.

Late Medieval Woodland Management

Despite the increase of the area of arable cultivation prior to the mid-fourteenth century, significant portions of each township territory remained outside the open fields. This is particularly true of the higher ground within each parish, the heavy glacial boulder clay and zones set at some distance from the principal settlements. Ridge and furrow is absent in large parts of northern Deanshanger, Wicken, Leckhamstead and Stowe parishes, in the western part of Potterspury, the north-western quarters of Lillingstone Dayrell and Akeley, and the southern parts of Whittlebury and Silverstone. Far from being unexploited, the earthwork evidence shows that these areas contained carefully managed areas of woodland and woodland pasture. Coppice banks and ditches, designed to prevent deer destroying young saplings, are preserved within and surround modern woodland, notably in the parishes of Stowe, Lillingstone Dayrell, Wicken, Deanshanger and Potterspury. As the amount of woodland diminished under the advance of the plough, its preservation and management will have become a pressing concern. The creation of the coppices may have been undertaken in recognition of the need to make the best use of this declining resource. No archaeological data is available to provide a date for the establishment of the coppices system, although documentary evidence suggests that it was in place by 1200, a period when the pottery

³³ E.g. RCHM(E) 1982 *An Inventory of the Historical Monuments in the County of Northampton, vol. 4: Archaeological Sites in South-West Northamptonshire* (HMSO, London), 41.

³⁴ Schumer, B. 1984 *The Evolution of Wychwood to 1400: Pioneers, Frontiers and Forests*, Dept. of English Local History Occasional Papers, 3rd series no. 6.

³⁵ Bellamy, B. 1994 'Anglo-Saxon dispersed sites and woodland at Geddington in the Rockingham Forest, Northamptonshire', *Landscape History* **16**, 31-37.

evidence suggest that the open fields were still being enlarged. Nor is there any evidence for a reorganization of this system as there is in neighbouring Salcey Forest.³⁶

By the end of the middle ages, therefore, the archaeological evidence points to a highly ordered farming system. Large areas were now cultivated in individual strips set with vast open fields. Beyond these, coppices in part stabilized the area of woodland and provided the best means of obtaining maximum return from diminishing areas of woodland, although they remained the target for the further intake of land by individuals and institutions. Documented assarting at Stockholt Manor (Akeley) and Monksbarn Grange (Whittlebury), for instance, can be identified through pottery spread on the newly-won ground.

The Identification and Location of Meadows and Pasture

Like woodland, the identification of areas of pasture and meadow relies largely on the interpretation of negative evidence. Meadow cannot be identified in the ceramic record for these areas were not subject to manuring. Nor did their management result in a major remodelling of the land surface which might survive as earthworks. Meadow required water and it is along the major rivers and the banks of their tributaries that areas of meadow were located. The wide flood plain of the Great Ouse provided large areas of meadow – indeed the element *-hamm* in Passenham and Buckingham refers to this valuable resource.³⁷ At Passenham the termination of ridge and furrow on the second terrace above the flood plain clearly delimits the lower area exploited as meadow. Likewise, throughout the project area, thin swathes of land, often only 20-50m in width appear to have been left uncultivated along the banks of every stream and must have been managed as water meadow. Opportunities for the creation of meadow beyond the major river valleys and onto the interior claylands of the main interfluves were therefore limited, but what opportunities there were were carefully exploited, since they provided the main source of winter animal fodder.³⁸

In contrast, pinpointing areas of medieval pasture is more difficult. Pasture could be established on both free draining and waterlogged ground, in high- or low-lying locations, and on soils of good and bad quality. Within the modern landscape, the majority of pasture is found in and around the villages and farms. The daily requirement to milk cows, for example, has encouraged farmers to keep their livestock close to the farm to reduce the amount of time

³⁶ Hall, D. 2001 'The Woodland Landscape of Southern Northamptonshire', *Northamptonshire Past & Present* ??? 33-46

³⁷ Gover, J., Mawer, A., & Stenton, F. 1933 *The Place-Names of Northamptonshire* English Place-Name Society **10**, 101.

³⁸ Williamson argues that the availability and nature of meadowland could affect settlement pattern. Small and discontinuous meadows would produce a dispersed settlement pattern, larger more discrete blocks a more nucleated pattern. Furthermore, without meadow, he argues, open field agriculture was less likely to evolve. Williamson, T. 2003 *Shaping Medieval Landscapes: Settlement, Society, Environment* (Windgather, Macclesfield)

spent driving these animals to and from their feeding grounds. On mixed farms, therefore, the less labour intensive arable lands are thus located beyond these pastures. The preservation of ridge and furrow within these modern pastures, however, demonstrates that this system has little antiquity. Indeed, the medieval arrangement was clearly the reverse of that which can now be found. In the pre-mechanical era, it was arable cultivation which was more labour intensive, encouraging the creation of open fields around the main centres of population. Pasture was therefore pushed to the edges of each vill's territory. Pigs could be pannaged within woodland, cattle and sheep could graze equally well in the woodland pastures, along the broad slades and ridings separating coppices, and on roadside verges. Thus in large part, pasture was coterminus with woodland in Whittlewood. And without further palaeoenvironmental evidence to help reconstruct the true nature of this woodland – the extent of dense woodland versus open woodland pasture – further precise location of the main pastures cannot currently be achieved.