

New Light on the Origins of Open-field Farming?

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THE PROBLEM addressed in this paper is the proposition that ‘classic’ medieval open-field systems were laid out, parish by parish, by individual communities, each working independently of its neighbours, between about A.D. 850 and 1150. There is physical and documentary evidence that a large, cohesive field-layout extended across four contiguous parishes on the northern side of the Bourn Brook, West Cambridgeshire, until Parliamentary enclosure. It appears to be a proto-open-field system, probably intensively cultivated, and apparently created in the 8th or 9th centuries A.D. by a centralised authority, perhaps as part of an ‘extensive’ estate.

OPEN FIELDS AND THEIR ORIGIN

By A.D. 1300 open-field farming was well-established across England in forms varying by field size, forms of field subdivision, ownership, and patterns of cropping. As the population of Britain doubled or more between 1086 and 1300, ploughlands were extended into many of the most marginal lands of each parish — neither marsh nor moor was exempt. However, only in central southern England, in the area recently characterised as the Central Province,¹ did this form of farming achieve its classic form, whose distinctive patterns of physical layout, tenure and cropping can be recognised through:

- the division of between 70% and 90% of the available land of the parish into two or three (though occasionally more) very large fields;
- the setting aside each year of one of these fields, or approximately one-third of their total area, as fallow for common grazing;
- the subdivision of each of these large fields into smaller units, commonly known as ‘furlongs’;²
- the further subdivision of furlongs into individual units of cultivation, strips of land (selions) which ran from one end of the furlong to the other;

¹ B. K. Roberts and S. Wrathmell, *An Atlas of Rural Settlement in England* (Swindon, 2000), 2.

² ‘Furlong’ has two meanings. The first is as a unit of measurement of distance derived from its original meaning, a ‘furrow-length’, that is, one-eighth of a mile or 220 yards. The second is as a sub-division of the open fields, that is, as a unit of area, and it is this meaning which is used in this study. The selions or strips into which furlongs were divided were very often, although not always, 220 yards long — sometimes they might be up to a mile in length. Medieval selions in W. Cambridgeshire were usually between 7 and 9 yards wide. A furlong could contain any number of selions, from few to many. Royal Commission on Historic Monuments (England), *West Cambridgeshire* (London, 1968), lxxvii.

- the distribution of selions among the freehold and tenant farmers of the parish, the lord and the church, usually in a regular sequence which was repeated from furlong to furlong and field to field until all the arable land of the parish had been distributed;
- on claylands, selions were often ridged through ploughing to facilitate drainage. They survive as ridge and furrow whose curved alignments reveal their medieval origins.

The remains of this landscape are visible in many places on the ground and their aspect while still in use is frequently recorded in documents. Just one example of many is the terrier, written in 1589, of Robert King's holdings in Low Field, Great Eversden, Cambs., which describes the wider landscape of streams, pasture and marsh, meadows lined by willows, and overlooked by poor, chalky hills:³

1 selion the east head butting on the common stream
 1 selion in water furlong
 1 selion in (?mis)fold furlong
 1 selion in collewyllowes furlong
 1 selion the north side butting on bourne brook
 1 selion in fulbrook furlong
 1 selion in stannards hill ye north head butting on the common pasture
 3 selions between the homes [*holmr* 'marshy meadow']
 1 selion in beanland furlong
 1 selion in longewhitehill furlong
 xj selions in marsh furlong the south head butting on marshmeddowe

Open fields in the Central Province are generally considered to have been laid out between about A.D. 850 and 1150, completely obliterating earlier field layouts, of which very little is known but which are believed to have been created in the prehistoric and/or Romano-British periods.⁴ The methods of arable farming undertaken within these earlier, pre-open fields are also unclear, but patterns of pottery distribution, believed to be related to manuring, suggest that infield-outfield agriculture was common. That is, that the fields immediately adjacent to a farmstead (the infields) were intensively cultivated and manured; those lying further away (the outfields) were less intensively manured and their periods of cropping were interrupted intermittently by fallow periods which might sometimes extend into decades.⁵

For many years, it was believed that the landscape into which open field farming was introduced was predominantly uncultivated. This led to the development of a model of open-field introduction which, while still useful for regions which still had a high proportion of woodland at the time, may be less useful elsewhere. It suggested that the earliest open fields were relatively small, and often placed in a relatively central position within a parish. Over time, new furlongs were added to these early fields as new arable was assarted from the surrounding 'waste'. When the extension of arable had reduced available pasture to such an

³ Cambridge University Library [CUL] QC 15/2.

⁴ C. C. Taylor, *Fields in the English Landscape* (Stroud, 2000), 47–70.

⁵ See, for example, T. Williamson, 'The development of settlement in North West Essex: the results of a recent field survey', *Essex Archaeol. Hist.*, 17 (1986), 120–32.

extent that what remained was insufficient to support the animals of the parish, a crop rotation was introduced that included the fallowing of a proportion of the arable fields to supplement what grazing was left.

A beautifully-argued example has been unravelled at Leighton Bromswold (Cambs.), where a gradual increase in the numbers of farmers in the parish over the medieval period seems to be visible in the distribution of holdings in the open fields.⁶ A small number of farmers held selions in a few furlongs, which were exclusively divided among them, and whose small size, irregular shape and restricted ownership have led to their interpretation as the first open fields of the parish, assarted from woodland or pasture. These men held the only farms with selions in every furlong in the parish, and it is this which has led to their interpretation as having the oldest holdings in the community. Other furlongs were divided between all the farms of the parish. They were much larger and, it is assumed, laid out after the smaller, irregular furlongs in which only the earliest farms held strips. This method of open-field creation in which furlongs were created gradually, expanding over the land of the parish from a central core of ploughland, according to need, may be typical of areas in which there was a significant amount of woodland in the Late Saxon period (c. A.D. 900–1066).

A second model of open field creation — also related to the colonisation of uncultivated land — has recently been offered by Dr Stephen Rippon, who has suggested that early oval enclosures, averaging about 32 acres, on the coastal marshes of the Severn Estuary might represent infields or ‘agricultural core areas’.⁷ These enclosures were created in the context of a mixed agricultural economy: the enclosures themselves may have been used for grain production, while the surrounding marshes within which they were set provided pasture and meadow. It is inferred that they were created by or for extended family groups, probably before the 10th century A.D.

However, the realisation that the Late Saxon landscape in the Central Province was, by contrast, often more intensively cleared and cultivated than had previously been recognised resulted in the development by David Hall of a third model for open field creation. This model is based on the absence, noted during field-walking, of any pottery evidence for settlement later than about A.D. 850 from beneath open-field systems in Northamptonshire, the Yorkshire Wolds, and the Lincolnshire and Cambridgeshire fens. It seems likely that, in areas where arable cultivation appears to have been continuous since the Roman period, and/or where the landscape was kept relatively open before the introduction of open fields by its use for pasture, open fields were laid out in massive furlongs in a single event from about the mid-9th century A.D. onwards.

⁶ B. K. Roberts, *The Making of the English Village* (London, 1989), 49–51.

⁷ S. Rippon, ‘Infield and outfield: the early stages of marshland colonisation and the evolution of medieval field systems’, 54–70 in T. Land and J. Coles (eds.), *Through Wet and Dry* (Sleaford, 2002).

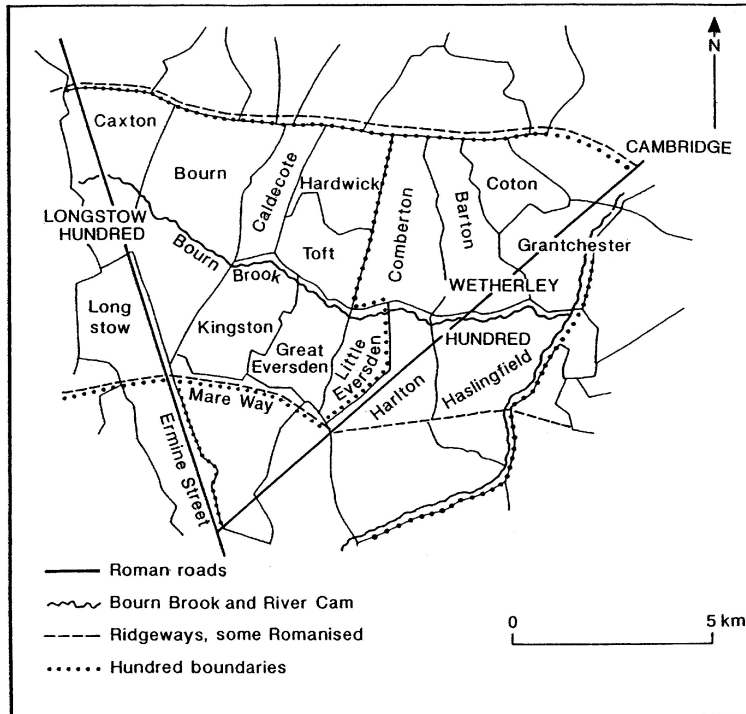


FIG. 1

The valley of the Bourn Brook, Cambridgeshire.

Hall has suggested, on the basis of furlong morphology and field-names, that the earliest furlongs in these fields were very long.⁸ As the number of farmers within the parish increased, so these huge furlongs were divided and sub-divided to create progressively smaller furlongs, in order to increase the number of selions available for distribution. At Wollaston (Northants.), for example, the strips in 'no less than 14 furlongs form a continuous alignment, 12,500 m long', indicating their origin in a single furlong which had later evolved into 14 segments, each a furlong in its own right.⁹ The divisions of these earlier huge units into smaller furlongs had generally occurred by the 11th century.¹⁰

This paper describes and discusses evidence which appears to offer a fourth model for open-field origins. It is drawn from the valley of the Bourn Brook, a tributary of the River Cam, in W. Cambridgeshire (Fig. 1). The Bourn Valley lies firmly within the Central Province. By about 1300 its parishes were almost completely covered by arable cultivation which, in each parish, was divided into

⁸ D. Hall, *Medieval Fields* (Princes Risborough, 1982), 48–9; idem, 'Late Saxon topography and early medieval estates', 61–70 in D. Hooke (ed.) *Medieval Villages*, (Oxford, 1985) 64; idem, *The Open Fields of Northamptonshire* (Northampton, 1995), 131–5; M. Harvey, 'Regular field and tenurial arrangements in Holderness, Yorkshire', *Hist. Geog.*, 6, (1980), 3–16; idem, 'Planned field systems in Eastern Yorkshire: some thoughts on their origin', *Agricultural Hist. Rev.*, 31, (1983), 91–103; idem, 'The development of open fields in the central Vale of York: a reconsideration', *Geografiska Annaler*, 67B (1985), 35–44.

⁹ D. Hall, 'Field work and field books: studies in early layout', 115–32 in B. K. Roberts and R. Glasscock (eds.), *Villages, Fields and Frontiers* (London, 1983), 119.

¹⁰ Hall (1995), op. cit. in note 8, 135–6.

between two and four huge open fields, generally conforming to the criteria for 'classic' open fields.¹¹

THE BOURN VALLEY IN THE ANGLO-SAXON PERIOD

The shallow valley of the Bourn Brook lies just south-west of Cambridge. The valley opens out from Caxton in the north-west, where it originates in the confluence of about five minor streams, to Grantchester in the south-east, where it joins the River Cam or Granta. The valley floor falls from about 45 m above Ordnance Datum (hereafter OD) at Caxton, to about 15 m above OD just west of its junction with the Cam.¹²

The valley is bounded to the north and south by ridges which rise to between 65 and 70 m above OD and which act as watersheds to the Brook. The N. ridge runs almost W.–E., and the S. ridge from NW.–SE. There is a steady, if fairly gentle, gradient on the N. side of the valley, which takes about 2 km to rise from about 45 m to about 65 m above OD.

Heavy gault clay exposed in the valley bottom is sometimes ameliorated by outcrops of gravel and alluvium, but the most of the land of the northern slope and the plateaux along the ridges is covered by a thick layer of boulder clay overlying middle chalk. It is most difficult to cultivate this landscape where it is flat and poorly drained, particularly on the valley floor and along the tops of the ridges.

The Bourn Valley, like the rest of Cambridgeshire, appears to have been occupied since the prehistoric period. Evidence of Bronze- and Iron-age activity has been discovered not only on the outcrops of lighter land immediately beside the brook, but also on the heavy clay plateaux along the tops of the ridges.¹³ By the end of the Roman Period, villas had been built at Comberton, Grantchester, Harlton, Haslingfield and Kingston, implying that by that time (if not before) the valley had been divided into a number of territorial units, and farmsteads lay only 400 m apart even on the higher slopes.¹⁴

The history of the valley in the Early and Middle Anglo-Saxon Period is hazy, particularly since much is inferred from a relatively small amount of archaeological and other evidence which leans heavily on what is known about the period from elsewhere in the Central Province.

The discovery of thick spreads of Early Anglo-Saxon pottery discovered during excavation near the top of the clay-topped ridge at Cambourne (a modern development in Caxton) suggests that the pattern of settlement in the valley in the 5th and 6th centuries A.D. was similar to that of the Late-Roman Period, that is, there was little or no retraction of settlement to the valley bottom.¹⁵ There is a little circumstantial evidence, discussed below in brief and in more detail elsewhere,

¹¹ M. R. Postgate, *The Open Fields of Cambridgeshire* (unpubl. Ph.D. thesis, University of Cambridge, 1964).

¹² Ordnance Survey of Great Britain, *Explorer 209 Cambridge 1:25000* (Southampton, 1999).

¹³ Cambridgeshire County Council Sites and Monuments Record [CCC SMR].

¹⁴ D. Browne (ed.), *Victoria County History of Cambridgeshire and the Isle of Ely*, 7 (London, 1977), 45 ; Wessex Archaeology, *Cambridgeshire: Archaeological Evaluation of Land Along the Proposed New Route of the A428, Associated Landscaping and GC29–30* (Cambourne New Settlement, Report 45976.06, Salisbury, March 2001), 9.

¹⁵ Wessex Archaeology, *Cambridgeshire: Archaeological Evaluation School Lane, Lower Cambourne* (Cambourne New Settlement, Report 45977.1, Salisbury, July 2000), 11.

which suggests that some elements of two or three of the Romano-British estate centres may have survived the political and administrative anarchy of the two centuries after A.D. 410.¹⁶

Archaeological evidence indicates that, if these Romano-British central places survived into the Early Anglo-Saxon Period, they did so in a context in which the differences between 'Post-Roman' and 'Saxon' farmers were based on identifiers which are not visible archaeologically. The people of the Bourn Valley shared a common material culture with others across East Anglia and the East Midlands. The clan territories or regions of the 5th and 6th centuries are not discernable in the archaeological evidence, and this suggests that ethnicity or differences in culture between Romano-British and Saxon farmers in the region were not the basis for political organisation.¹⁷ That is, that the basis of the 'broadly-equal, internally ranked patrilineal and patrilocal descent groups farming or exploiting ancestral territories' who competed among themselves for local dominance during the 5th and 6th centuries were not obviously rooted in differences between Saxon and Romano-Briton. It should, however, be noted that this material culture was predominantly Saxon rather than Romano-British, and included a pagan Saxon cemetery at Haslingfield, although 'few archaeologists today would argue that a burial containing Continental style dress ornaments was necessarily that of someone with immigrant forbears'.¹⁸

The preservation of three place-names referring to territories in the valley also complicates this picture of apparent Saxon dominance. South of the Bourn Brook the *-ingas* suffix of the *Hæslingas* (Haslingfield) and the *Earningas* (Armshold Lane [Eversden]; Ermine Street; Arrington) certainly seems to indicate Saxon groupings in this period. It is probable that there were, over the period between about A.D. 400 and 700, more than three of these minor clans or polities in the valley, but for which evidence has not survived. Their transience was due to the personal nature of the allegiances which bound them together.

These surviving names appear, however, to be particularly characteristic of groups whose land had been granted from territories controlled by Romano-British populations.¹⁹ If this is the case, then the place-names of Grantchester and Comberton to the north of the Brook acquire an added significance: Grantchester (*granta-sæte* 'settlers on the *Granta*', the Celtic name for the Cam) is named from a river with regional importance, and from *-sæte* 'names for groups of [predominantly Romano-British] people who constituted administrative units [which] were characteristically formed by the addition of Old English *-sæte* to the name of a prominent feature of the landscape'.²⁰ The first element of Comberton (*Cumbertone 1086*) may be derived from *Cumbra*, a name suggesting a high-status Romano-Briton (or Romano-British group), whose polite appellation may reflect his or their

¹⁶ S. Oosthuizen, 'The origins of Cambridgeshire', *Antiq. J.*, 78 (1998), 85–109.

¹⁷ P. Stafford, *The East Midlands in the Early Middle Ages* (Leicester, 1985), 91. See also C. Scull, 'Social Archaeology and Anglo-Saxon Kingdom Origins', *Anglo-Saxon St. in Archaeol. and Hist.*, 10 (1999), 17–24.

¹⁸ H. Hamerow, 'Anglo-Saxon Oxfordshire, 400–700', *Oxoniensa*, 64 (1999), 23–35, at p. 24.

¹⁹ Della Hooke, pers. comm.

²⁰ P. H. Reaney, *Place-Names of Cambridgeshire and the Isle of Ely* (Cambridge, 1943), 75–6; M. Gelling, *The West Midlands in the Early Middle Ages* (Leicester, 1992), 82; Della Hooke, pers. comm.

control of an area not far from one dominated by Saxons. If the name had been applied to a pedigree Englishman — as, by analogy, in the inclusion of Caesar in the East Anglian regnal lists — this still infers the exploitation of real or mythical Romano-British antecedents to legitimate Saxon authority.²¹

The distribution of these place-names suggests that, for a time at least, Romano-British administration may have survived for longer on the northern bank of the valley while the southern passed sooner into more explicitly Saxon control.

It seems possible that the *Hæslingas* may still have controlled a substantial part of the valley into the late 7th century when the valley, along with the rest of W. Cambridgeshire, came under direct Mercian overlordship. It was a practice of the late 7th- and early 8th-century Mercian kings to attach the core estates of such groupings to their royal demesnes, perhaps to legitimise their appropriation of these clans.²² The survival of the *-ingas* place-name into the Late Saxon Period certainly suggests that the name was still current at the time of the Mercian conquest in A.D. 652.

The position of Haslingfield as an Early Anglo-Saxon central place is suggested by its place-name, and by the position of a Roman villa and a pagan Saxon cemetery relatively close to each other in the parish.²³ The argument for its status as a Middle Anglo-Saxon central place for the valley is based on the facts that it was one of the two largest villas in the valley in 1066 (assessed at 20 hides; Bourn was the other), that in 1066 it contained the largest area of ancient royal demesne in W. Cambridgeshire assessed at over 7 hides, and that in 1066 it was the only royal manor in W. Cambridgeshire still paying the ancient food render of honey, corn and malt and known as the *feorm*.²⁴ The payment of the *feorm* can confidently be used as evidence of a Middle Anglo-Saxon extensive estate; the payment of honey suggests a *feorm* at least as old as the 9th century A.D.²⁵ In 1066 there were only three or four holdings of ancient royal demesne in Cambridgeshire W. of the Cam: at Haslingfield, Comberton, Kingston and (perhaps) Eversden — all in the Bourn Valley.²⁶ Others, alienated by 1066, may also once have existed at Toft, Bourn and Caxton.²⁷

The pattern of landownership in 1066 suggests that royal control of the valley in the form of an extensive estate continued into the 11th century without very much change. The valley appears to have been a backwater, like those older land

²¹ Reaney, *op. cit.* in note 20, 73–4; C. C. Taylor, *The Cambridgeshire Landscape* (London, 1973), 51; Hooke, *pers. comm.* See also H. Geake, 'Invisible Kingdoms: The Use of Grave-Goods in Seventh-Century England', *Anglo-Saxon St. in Archaeol. and Hist.*, 10 (1999), 203–15.

²² S. Bassett, 'In search of the origins of the Anglo-Saxon kingdoms', 3–27 in S. Bassett (ed.), *The Origins of the Anglo-Saxon Kingdoms* (Leicester, 1989), esp. 6–17.

²³ D. Haigh, 'A Correlation Between Archaeological Sites and Field Names: A Survey of Parishes Along the Line of the North and West By-Passes of Cambridge: An Interim Report (unpubl. MS, held in the Cambridgeshire Collection, Cambridge Central Library, 1975).

²⁴ *Domesday Book: Cambridgeshire*, ed. A. Rumble (Chichester, 1981), 1:7.

²⁵ D. Hooke, 'Territorial organisation in the Anglo-Saxon West Midlands: central places, central areas', 79–93 in E. Grant (ed.), *Central Places, Archaeology and History* (Sheffield, 1986), 81; P. Stafford, 'The "farm of one night" and the organisation of King Edward's estates in Domesday', *Econ. Hist. Rev.*, 2nd ser. 33 (1980), 491–502, at p. 497.

²⁶ Rumble, *op. cit.* in note 24, 1:6, 1:7, 1:8; S. Oosthuizen, 'Sokemen and freemen: tenure, status and landscape conservatism in 11th-century Cambridgeshire', in S. Keynes and A. Smyth (eds.), *Festschrift for C.R. Hart* (Oxford, forthcoming).

²⁷ S. Oosthuizen, *op. cit.* in note 26.

units ‘consisting of federations of dependent parcels called berewicks and sokelands, with demesnes of such small size that the bulk of their revenues must have come from peasant rents. They are better described as centres for the collection of tribute, preserving pre-manorial forms’.²⁸

Something of the character of the Late Saxon landscape of the valley may be inferred from field-names. David Hall has argued these may ‘reflect ancient topography, such as the presence of heaths, moors, or woodland’ because furlong names containing these elements must be referring to a pre-arable landscape; their names would be different if they referred to the landscape of the open fields themselves.²⁹ If this is the case, then an analysis of field-names ‘would allow a fairly precise reconstruction of a county’s landscape in the later Saxon period’.³⁰

Field-names indicate that a continuous band of ‘sheep pasture characterised by isolated stands of wood’ seems to have lain along the middle and upper slopes of the northern side of the Bourn Valley at about the time that the open fields were introduced.³¹ They include the We(a)ld, an area of managed, often intensively grazed, pasture lying along the northern ridge from Hardwick (where it was also called a moor), across Caldecote, Bourn and Caxton.³² Pasture names in *heord*, ‘herd’, occur on the upper and middle slopes in Hardwick, Heard Common (Caxton 1661), Herd Common and Hardman’s Dean (Bourn 1635 and 1829), the Cold Hard Common (Caldecote 1854), Hardle Dean (Hardwick 1602) and Harborough Field (Comberton 1518).³³

There were further pastures and rough grazing on the middle slope: in Hardwick alone, for example, there were *Bradleh* (1251), *Puttockesrou* (1251), Stocking Close (1854), Hay Common (1251) and Stockwell [Dean] (1639).³⁴ One of the oldest of these valley pastures may have been the Offal in Comberton (1250).³⁵

Yet names referring to grazing or pasture appear to be entirely absent from the lower slopes of the valley. There, those field names not derived from personal names refer almost exclusively to arable cultivation. Ellon Furlong (*ellern* ‘elder’ 1723) and Thornpitt Leys (1638, both Comberton), and Thorns Furlong (1597, Caldecote) are significant because ‘thorn . . . and elder are especially associated

²⁸ C. Dyer, ‘Lords, peasants and the development of the manor: England, 900–1280’, 301–15 in A. Haverkamp and H. Vollrath (eds.), *England and Germany in the High Middle Ages* (London, 1996), 303.

²⁹ Hall (1985), op. cit. in note 8, 63.

³⁰ Ibid.

³¹ This work is reported in detail in S. Oosthuizen, ‘Field-names in reconstructing Late Saxon agricultural land-use in the Bourn Valley, West Cambridgeshire’, in A. Chadwick (ed.), *The Archaeology of Land Allotment* (Oxford, forthcoming).

³² CUL EDR/H1; Reaney, op. cit. in note 20, 54; C. R. Elringham (ed.), *Victoria County History of Cambridgeshire and the Isle of Ely*, 5 (London, 1973), 29.

³³ Gonville and Caius College, University of Cambridge [GCC] XXXII.29; Christ’s Collage, University of Cambridge [ChC] Parsonage and *Ac; Cambridgeshire County Record Office [CCRO] R60/24/2/11 and R53/13/41–3; Reaney, op. cit. in note 20, 360.

³⁴ *brād* ‘broad’ + *leah* ‘wood pasture’ 1251, CUL EDR G3/27; *puttock[es]* ‘buzzard or red kite’ + *rou* ‘rough ground’ 1251, *ibid.*; CCRÓ 152/P12; CUL EDR/G3/27; *stocc* ‘tree stump’, 1837, CCRO Q/RDc51; Reaney, op. cit. in note 20, 331, 316 and 345.

³⁵ *ald* ‘old’ + *feld* ‘an open space within sight of woodland’, CUL QC 15/12, 15/36, 15/52; Reaney, op. cit. in note 20, 74 and 78; O. Rackham, ‘Trees and woodland in Anglo-Saxon England: the documentary evidence’, 7–11 in J. Rackham (ed.), *Environment and Economy in Anglo-Saxon England* (CBA Res. Rep. 98, 1994), 8; S. Oosthuizen, ‘Medieval greens and moats in the central province: evidence from the Bourn Valley, Cambridgeshire’, *Landscape Hist.*, 24 (2002), 73–88.

with lack of woodland' and with arable cultivation.³⁶ Other names record the problems of arable farming: for example, persistent difficulties with drainage at Waterlond [Furlong] and Slade Close (mid-16th century and 1820, both Bourn), Sowerditch (1615, Caldecote), and Pudding [Lane] (1820 Bourn).³⁷

This apparent distinction between land used for grazing on the middle and upper slopes and arable cultivation on the lower is supported by the character of the parish boundaries, which are indented along the furrows of open-field selions on the lower slopes but continuous and slightly sinuous on the middle and upper slopes.

EVIDENCE FROM THE BOURN VALLEY, CAMBRIDGESHIRE (Fig. 2)

The alignments of at least seven, exceptionally long, field boundaries are preserved in tracks, field boundaries, hedges, roads and low ridges in the fields along the lower N. slopes of the Bourn Valley (Figs. 7–9). The alignments run along the lower contours of the valley from west to east, across four contiguous parishes — Toft, Comberton, Barton and Grantchester. They cover an area extending 8.5 km from Toft in the west, to Grantchester in the east, and north from the Brook for about 2 km, on the best farming soils in the valley.

They are not absolutely straight, since their courses are influenced by proximity to watercourses and by changes in the local topography. Where they cross relatively even ground they tend to be about 200 m (220 yards) apart.

These alignments certainly predate Parliamentary enclosure since they were recorded as furlong boundaries in pre-Parliamentary enclosure maps for each of these parishes between 1795 and 1839, and they appear to be part of the open fields of these parishes.³⁸ They lie at right-angles to the selions which divide them (the selions lying across rather than along the contours, to facilitate drainage) and

³⁶ Metropolitan Record Office [MRO] H1/ST/E/107/1 and 2; CUL EDR/H1; Clare College, University of Cambridge [CC] Safe B 38/5; O. Rackham, *The History of the British Countryside* (London, 1986), 212.

³⁷ CC Safe B 38/5; CUL/EDR/H1; Reaney, *op. cit.* in note 20, 343 and 360; CCRO Q/RDc 35.

³⁸ Grantchester, pre-enclosure map 1795, CCRO 152/P11; Barton, pre-enclosure map 1839, CCRO 152/P2; Comberton, pre-enclosure map 1839, CUL MS Plans r.a.2; Toft, pre-enclosure map 1815, CCRO 124/P80. The representation of these long furlong boundaries as wide commons on the pre-enclosure maps seems likely to be accurate. They might be dismissed as a local parochial eccentricity if they had been found in just one parish, but they are found on all four maps. They are unlikely to reflect a personal idiosyncrasy of the enclosure surveyor because neither Grantchester (1795), Barton nor Comberton (both 1839) was surveyed by the same man, and it is unlikely that the anonymous surveyor of Toft was involved in the survey of these other parishes since Toft was enclosed in 1815, more than twenty years earlier than Barton or Comberton, and twenty years later than Grantchester.

It is also unlikely that these four surveyors did not know the way in which headlands between furlongs were conventionally represented on maps. A glance at Figure 3 shows, for example, that the headland between Broadway Furlong and the Middle Furlong to its south follows the usual convention in being represented simply by a single line, unlike Broadway or Millway Commons.

Finally, the accuracy with which the pre-enclosure surveyor represented the actual landscape on the map itself is probably reliable, since this work formed the basis of a substantial realignment of properties and the establishment of future legal responsibilities relating to those properties.

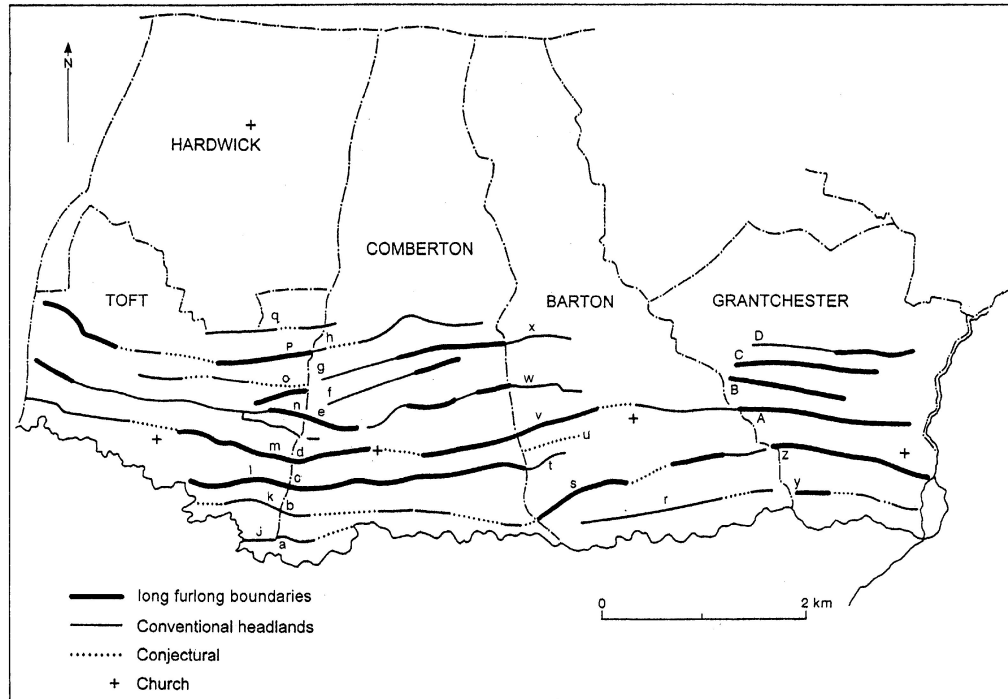


FIG. 2

The arrangement of wide headlands across Grantchester, Barton, Comberton and Toft (c. 1795–1839). See Appendix for key.

there seems no reason to doubt that they were used as headlands for turning the plough.³⁹

Each of these long furlong boundaries was unusually wide, being up to 50m in width, compared with a more usual W. Cambridgeshire headland width of 7–11 yards (6.4–10.1 m).⁴⁰ They are called ‘commons’ on the pre-Parliamentary enclosure maps and it seems unlikely that they were generally ploughed. A detailed extract from the Comberton pre-enclosure map shows their character in more detail (Fig. 3).

This layout of long furlong boundaries differs in four important ways from the many examples of massive furlongs found in Northamptonshire, Cambridgeshire,

³⁹ RCHM(E), *op. cit.* in note 2, lxvii. The headland of a furlong was a strip of land, most commonly 7–11 yards wide in Cambridgeshire, which bounded the top or bottom of a furlong and which usually ran at right angles to the prevailing axis of the selions in the furlong. Before the mid-14th century it was very often cultivated, but thereafter sometimes left as a grassy balk or access way. Headlands were most commonly created where the selions of one furlong ran on the same orientation as those in the furlong above or below. The headland gave the ploughteams a space on which to turn without encroaching on the selions of the next furlong. Where the selions of the next furlong lay at right angles to the selions in a neighbouring furlong, then the first selion of that next furlong was used as a headland. In the Bourn Valley, the selions within the arrangement described in this chapter all ran at right angles to the Bourn Brook and therefore ‘needed’ headlands to provide a turning space for their ploughteams.

⁴⁰ RCHM(E), *op. cit.* in note 2, lxvii.

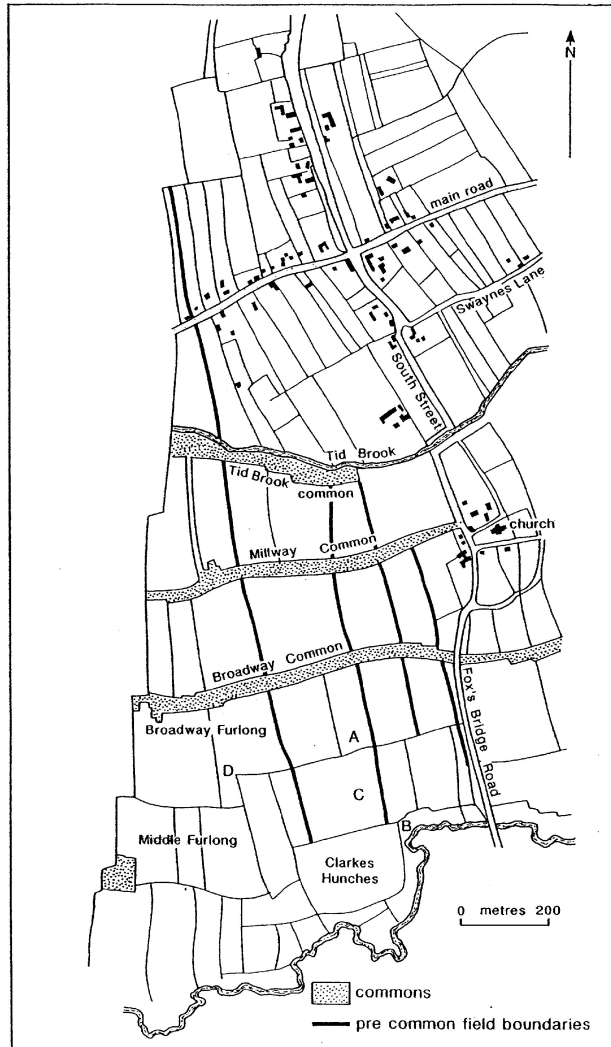


FIG. 3
Detail of West Field, Comberton, in 1839, just before Parliamentary enclosure. The character of the wide furlong divisions as narrow commons is clearly shown. The western boundary of the field is also the parish boundary between Comberton and Toft, and the boundary between Wetherley and Longstow Hundreds.

Lincolnshire and Yorkshire, except that they are also very long, and appear to have been laid out in a single event.

1. This arrangement of furlong boundaries in the Bourn Valley continued from west to east, uninterrupted from parish to parish, without reference to parish boundaries, one of which was also a hundred boundary. As far as is known, this is unprecedented. The alignments of furlong boundaries usually stop at parish boundaries.⁴¹

⁴¹ See, for example, Hall (1995), *op. cit.* in note 8. It is worth noting that, as far as can be established, Grantchester, Barton, Comberton and Toft have no Late Saxon or medieval history of administrative unity: there is no record of any one of them having been a chapelry of one of the others, of any common manorial lordship across all four of them, or of shared rights in each other's fields.

2. These long furlong boundaries are exceptionally wide headlands. At up to 50 m in width, they are at least five times the width of a conventional headland.
3. They were used as ‘commons’ along almost their entire length.
4. These long furlong boundaries run *along* the contours rather than at right angles to them, unlike those in Northamptonshire and other places which seem generally to have led from lower to higher ground.

The only potential parallel known to the author at the time of writing is a set of lynchets near Polesden, Surrey, which run along the contour for about 1.5 km, and are crossed by medieval manorial, parish and hundred boundaries.⁴² They may be a fragment of a much larger arrangement. However, the lynchets at Polesden are sufficiently close together to suggest that at least some may have originated as selion (tenurial) boundaries, whereas the distinctive feature of this arrangement in the Bourn Valley is in its furlong (field-division and cropping) boundaries.

The relatively regular, unitary arrangement of this set of alignments in the Bourn Valley suggests that these long furlong boundaries were planned and that they were laid out in a single phase, because none of these characteristics is likely to be the result of accretion over time.

THE DATE AT WHICH THIS LAYOUT MAY HAVE BEEN CREATED

Initial consideration of the period within which this arrangement of long furlong boundaries may have been laid out indicates a broad spectrum between the Roman and the Late Saxon Periods. This is because, as explained in more detail below, these long furlong boundaries lie at right angles over prehistoric cross-valley land divisions; and because the parish boundary between Toft and Comberton, which transects this field arrangement, is also a 10th-century hundred and estate boundary.

These long furlong boundaries lie at right angles across the alignment of an extensive system of prehistoric, probably Iron-age, land divisions which run across the valley from ridge to ridge on a SW.–NE. alignment.⁴³ The relationship between the long furlong boundaries and the cross-valley alignments, exemplified in Figure 3, shows that these long furlong boundaries overlie the cross-valley alignments, although fragments of the latter have been preserved in selion boundaries within the furlongs. The dominance of the long furlong boundaries in relation to the cross-valley alignments suggests that the former postdate these latter land divisions, which therefore provide a *terminus post quem* for the long furlong boundaries. And because the cross-valley alignments are probably Iron-age in date, this indicates that the long furlong boundaries are likely to be of Roman or later date.

There is, at the other end of the time-range, no record of the substantial medieval manors in Toft, Hardwick, Comberton, Barton or Grantchester holding

⁴² J. English and S. Dyer, ‘Surrey Historic Landscape Project — the Polesden estate’, *Soc. Landscape Stud. Newsl.* (Autumn 1993), 4–6; I am grateful to Judy English for drawing this example to my attention.

⁴³ S. Oosthuizen, ‘The roots of the open fields: linking prehistoric and medieval field systems in W. Cambridge-shire’, *Landscapes*, 4 (2003), 40–64.

lands in any of the other parishes in 1066 or thereafter; that is, the larger landholders in each parish did not to control large stretches of the neighbouring parishes. This makes it extremely unlikely that the layout of the long furlong boundaries was created after 1066 by one or more major lords who held land in all four parishes. Evidence in the character of parish and hundred boundaries, and in the pattern of open fields in each parish which support this conclusion is discussed next.

The parish boundary between Comberton and Toft is also a hundred boundary (Fig. 3), and the way it transects this arrangement suggests that it may provide a *terminus ante quem* for the long furlong boundaries. The suggestion that the alignments of the long furlong boundaries predate the hundred boundary is supported by the character of the hundred boundary both inside and outside these west-east alignments. *Within* the area of these long furlong boundaries, the hundred boundary follows an indented, step-wise southward course along the furrows of individual selions towards the Bourn Brook, in a pattern which is characteristic of a boundary laid out over furlongs and selions which were already in use.⁴⁴ To the north, *outside* the pattern of long furlong boundaries, the hundred boundary fossilises the continuous and slightly sinuous course of an underlying prehistoric alignment which is not indented along selions.

If the hundred boundary pre-dated the arrangement of long furlong boundaries, it might be expected to be as continuous and sinuous inside as it is outside this layout. It would not have been necessary for its original, sinuous course between the long furlong boundaries to have been disrupted by the imposition of selions because the narrow width of selions of 7 to 9 yards in W. Cambridgeshire would have made it relatively easy to respect an earlier significant boundary by adjusting the width of the selions to meet the demands of that boundary.⁴⁵ As this does not seem to have happened, it appears that the furrows of the selions took precedence over the alignment of the hundred boundary and therefore probably pre-date it.

Nor cannot it be argued that this was originally an ill-defined boundary. Hundreds defined areas of tax-collection (payment of the *geld*), renders of service to the Sheriff and attendance at the hundred moot. Each was a mark of status of a free man and was derived from the land that he held. It was therefore important to know which Hundred a piece of land lay in, since this would affect the collection of the *geld* within each Hundred, and the Hundred moot and other public courts that the holders of land attended.⁴⁶

There are two sets of evidence which suggest that this boundary was in place by the mid-10th century.

First, Toft and Hardwick formed a single 10-hide estate which was sold by Wulfnoth to Bishop Æthelwold in A.D. 975.⁴⁷ The documentary evidence concerning the estate does not include any reference to any other land attached to

⁴⁴ Taylor, *op. cit.* in note 4, 76 fig. 9a.

⁴⁵ RCHM(E), *op. cit.* in note 2, lxvii.

⁴⁶ R. Faith, *The English Peasantry and the Growth of Lordship* (Leicester, 1997), 117.

⁴⁷ C. R. Hart, 'Land tenure in Cambridgeshire on the eve of the Norman Conquest', *Proc. Cambridge Antiq. Soc.*, 84 (1995), 59–90; N. E. S. A. Hamilton (ed.), *Liber Eliensis in Inquisitio Comitatus Cantabrigiensis* (London, 1876), 152–3.

it, either in or outside the Bourn Valley, that is, it did not extend into the neighbouring parishes. It is self-evident that Wulfnoth must have received Toft/Hardwick at an earlier date than that at which he sold it to Bishop Æthelwold. Even if he were the first 'book' owner of the estate, it is possible that the estate was detached from the royal estate at some time between about A.D. 950 and 975. This means that the parish boundary between Toft and Comberton, which transects the arrangement of long furlong boundaries, appears to have been in place by the mid- to later 10th century at the latest.

Second, while a 10th-century date for the origin of the hundreds is generally accepted, the Cambridgeshire hundreds have been dated by Dr C. R. Hart to about A.D. 917 — the conquest of Cambridgeshire by Edward the Elder. The argument for the imposition of this new cadastre on Cambridgeshire and the other counties of the Danelaw in the early years of the 10th century is based on the documentation of both ploughlands and hides in the Cambridgeshire folios of *Domesday Book*, and has four strands.⁴⁸ First, that the creation of counties (of Cambridgeshire, in this instance) took place in the immediate aftermath of the conquest of the Danelaw and, presumably, their subordinate constituencies, the hundreds. Second, Hart has pointed out that the collection of the geld was solely based on hides, while the three more ancient responsibilities of army service, bridge and fortress work, which are derived from the 8th century and earlier, were based on ploughlands; from this he infers that ploughlands preceded hides as units of assessment. Third, he noted that the ploughland was a duodecimal unit, and the hide was a decimal unit and therefore probably had different origins. Fourth, he convincingly argued that the original relationship between ploughlands and hides was probably an exact equivalence, and that the relationship in 1086 of two ploughlands for each hide was the result of the documented reduction of the hidage of most Cambridgeshire holdings by 50% in 942. This also made it more likely that ploughlands predated hides. The date of 917 for the imposition of hidage assessments does not, of course, necessarily follow, but the system must have been in place by 942 in order to be reduced by a half at that date, and an early 10th-century date seems quite likely. At any rate, the conclusion drawn by Hart has not been challenged and appears to be accepted in the scholarly literature.

It should also be noted in passing that, since the hundred boundary is indented among selions, it seems likely that it is also later than them. If this is the case, then the step-wise course of the hundred boundary across the layout of long furlong boundaries implies that selions were not only already present in the early 10th century, but were also allocated in such a way that tenurial or manorial realities required the hundred boundary to distinguish between them.

It is nevertheless worth noting that it cannot be stated with absolute certainty that the line of this parish and hundred boundary just before Parliamentary enclosure ran precisely along its original 10th-century course. The best that can be said about it is that there is no documentary record known to the author of its having been amended at any time before the 19th century or of any disputes concerning its alignment at any time before that date. It is therefore possible that

⁴⁸ C. R. Hart, *The Hidation of Cambridgeshire* (Leicester 1974), 12–13 and 45.

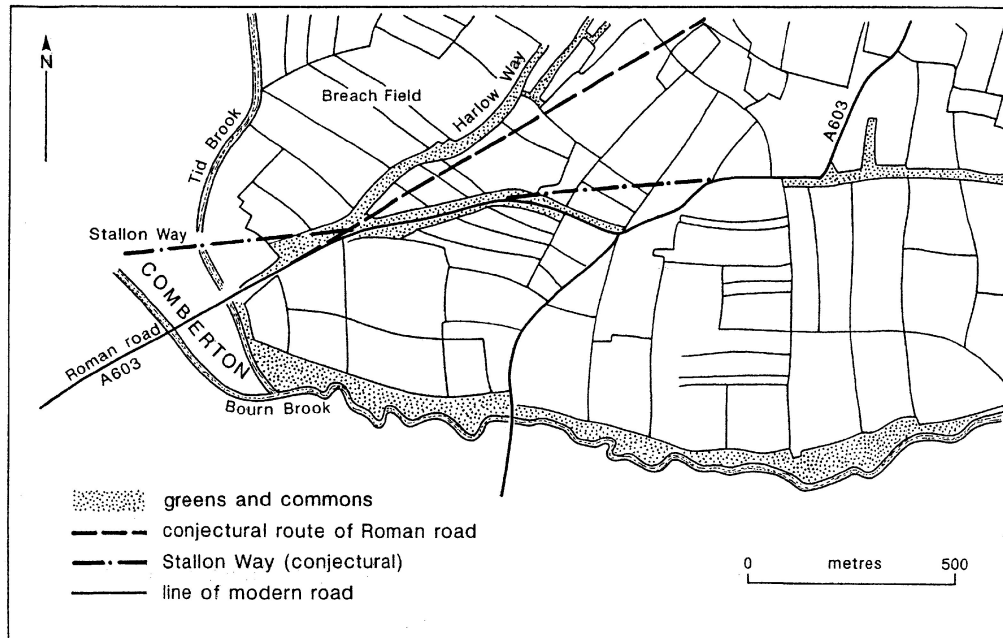


FIG. 4

The junction between the Roman road (the modern A603) and Stallan Way in Barton in 1839.

in 1839 the hundred boundary still followed its early 10th-century course and that its 19th-century alignment perpetuates its original relationship with the long furlong boundaries.

This very broad range of about 900 years between, perhaps, the early 1st and the early 10th centuries for the creation of these long furlong boundaries may be narrowed yet further by a more detailed examination of their relationship with other features of known date.

Two sets of evidence can be called upon to consider the possibility that this layout might be Romano-British in origin: its relationship with the Roman road between Wimpole and Cambridge (the present A603), and its relationship with two Romano-British settlements in the area.

The northern course of the Roman road from the point of its intersection with Stallan Way (*k*, *b*, *s* and *z* on Fig. 2; Fig. 4) has disappeared in Barton and beyond. The shallow angle of intersection between Stallan Way and the Roman road indicates that the Roman road was probably already out of use by the time that this arrangement of long furlong boundaries was laid out.

The possibility that Stallan Way post-dates the Roman road is further supported by the way in which the course of the medieval main road (now the A603) was diverted on to Stallan Way from the point of their intersection. This relationship underscores the relative contemporary importance of Stallan Way and unimportance of the Roman road at the time that the long furlong boundaries were created.

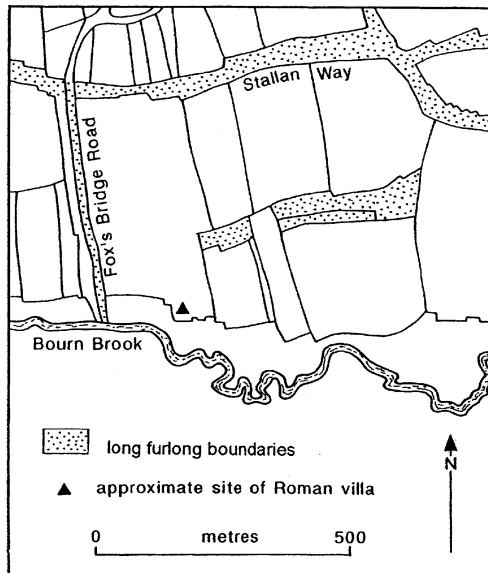


FIG. 5

Comberton: the relationship between the furlong boundaries and the site of the Roman villa.

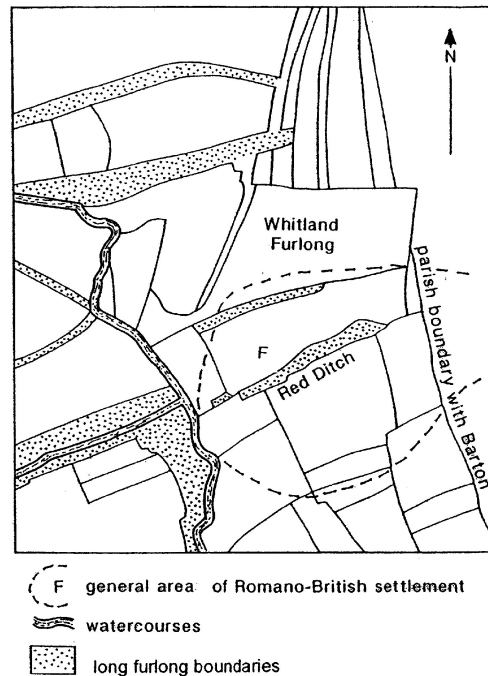


FIG. 6

Comberton: relationship between Whitland Furlong and the proto-open-field arrangement.

This conclusion that the long furlong boundaries are post-Roman is sustained by the relationship between these boundaries and two known Romano-British settlements.

The first settlement, the Roman villa in Comberton, lay east of Fox's Bridge Road near the Bourn Brook, just above the flood-line at the boundary between meadow and arable (Fig. 5). Some of the walls of the villa may be preserved in the modern lynchet and hedge which together form that boundary. It was a substantial building with such high status fittings as painted walls, a hypocaust and a bath-suite.⁴⁹

Aerial photographs of other Romano-British villa sites show these buildings are often set in large areas defined by walls and/or ditches, perhaps identifiable as gardens and/or 'demesne farms'.⁵⁰ The physical limitation placed on this particular site by the course of the Bourn Brook to the south of the villa means that, if such boundaries had existed here, they would be preserved in furlong boundaries to the north of the structure. There is, however, no indication of any such boundaries in the layout of the long furlong boundaries, and it seems more likely that the latter were created after the villa site had been abandoned in the late 4th century (Fig. 5). That is, they are most probably post-Roman.

⁴⁹ Browne, *op. cit.* in note 14, 45.

⁵⁰ S. S. Frere and J. K. St Joseph, *Roman Britain from the Air* (Cambridge, 1983), 188–9 and 196.

This conclusion is supported by the relationship between the long furlong boundaries and a second Roman-British settlement: an extensive 'native settlement' lying against the Barton parish boundary at TL394561, where field walking has found large quantities of Romano-British pottery (F on Fig. 6).⁵¹ It lies at the southern end of, and on the same alignment as, Whitland Furlong, overlapping Red Ditch Meadow.

The boundaries of Whitland Furlong are distorted towards the east, away from the general north-easterly direction of the rest of the arrangement of long furlong boundaries at this point. This is emphasised by the way in which the parish boundary with Barton is apparently diverted around the NE. corner of Whitland Furlong. It gives the orientation of the furlong the appearance of having been rather uncomfortably included into the open-field layout. This discontinuity in alignment suggests that the Romano-British settlement and the long furlong boundaries are of different dates. If the long furlong boundaries were contemporary with this settlement, it would be expected that both would lie on the same alignment. The most likely explanation for the irregular alignment of Whitland Furlong within the pattern of long furlong boundaries is that the latter were influenced at this point by the Romano-British settlement, whose earthworks may have survived long enough to affect the local alignment of the long furlong boundaries in their vicinity.

All the evidence so far discussed therefore suggests that the system of long furlong boundaries was probably laid out after the late 4th or early 5th centuries A.D., but before the imposition of hundred boundaries in the early 10th century. This broad period of five hundred years can be narrowed down further, but with less certainty, since the arguments that follow are more generalised.

There are two reasons why it seems unlikely that this unusual field layout was created between about A.D. 400 and 700. First, this was a period of political, economic and administrative instability, in which shifting local and regional allegiances were unlikely to provide either the authority or the administrative control and stability within which such a massive reorganisation of the landscape might have taken place. The evidence of the Tribal Hidage indicates that in the late 7th century west Cambridgeshire lay in an area in which political organisation remained fragmented and fluid. Local clan leaders were able to exert a transient authority for relatively short periods in a competitive political environment in which both leaders and their territories were likely to be in a state of flux. This situation did not change until the establishment of 'permanent regional overlordship' by the Mercians in the late 7th or early 8th century.⁵² It is this that makes it unlikely that the arrangement of long furlong boundaries was created by the Hæslingas or a similar grouping.

⁵¹ CUCAP BCK41; CCC SMR, Townsend Farm Settlement Site SAM 96, ref. 03074; CUL MS Plans r.a.2.

⁵² W. Davies and H. Vierck, 'The contexts of Tribal Hidage: social aggregates and settlement patterns', *Frühmittelalterliche Stud.*, 8 (1974), 223-93, 267 fig. 7; C. Scull, op. cit. in note 17, 22-3.

Second, since this period is also characterised by an increased emphasis on pastoral farming, it is difficult to see the impetus for the introduction of an extensive arable field arrangement over such a large area between A.D. 400–700.⁵³

The period between about A.D. 700 and 917 is a more likely candidate, since it was distinguished by greater political and economic stability, and increasingly centralised administrative control. Cambridgeshire, which appears to have been politically fragmented before about the mid-7th century A.D., was incorporated into the Mercian kingdom at about that time, and had come under direct Mercian jurisdiction by the mid-8th century.⁵⁴ Food renders and tributes to local, regional and national elites played an important part in the economies of the maturing Early Anglo-Saxon kingdoms and their constituent extensive estates, thus helping to stimulate grain production. In the Bourn Valley, as outlined above, there is some evidence for the development of a Middle Anglo-Saxon extensive estate centred on Haslingfield in this period.

The suggested date of this layout of long furlong boundaries in the Bourn Valley — the 8th or 9th centuries — does, however, overlap with the Scandinavian occupation of Cambridgeshire between about A.D. 870 and 917. Nevertheless, a Scandinavian origin for their origin seems unlikely. This is because the 9th-century Scandinavian invasion and occupation of Cambridgeshire does not seem to have had a significant long-term impact on settlement, tenure or economic organisation in the county, even though the region remained within the outer Danelaw until 917.⁵⁵ The Scandinavian settlement of Cambridgeshire does not appear to have been intensive, and there is no evidence which indicates that its effects on the day-to-day administration and cultivation of the landscape were pervasive. While some extensive estates, like that based on Great Shelford, do appear to have passed into Scandinavian control, there is little evidence to suggest that this was a widespread process, or that any new Scandinavian estate owners — if, indeed, many existed — were accompanied by large numbers of followers.⁵⁶ This impression of relative stasis in the landscape during the Scandinavian period of control of Cambridgeshire supports Faith's conclusion that 'the terms on which Scandinavian landholders took over land seems, in some way not yet understood, to have preserved many aspects of a comparatively free peasantry, thus preserving earlier forms of tenure, unlike the contemporary changes to landholding in Wessex and Mercia.'⁵⁷ Bassett, too, has suggested that 'the long-term impact of Scandinavian settlement on the fabric of local society in the Danelaw has almost certainly been greatly exaggerated'.⁵⁸

⁵³ P. Murphy, 'Iron Age to Late Saxon land use in the Breckland', 177–210 in M. Jones (ed.), *Integrating the Subsistence Economy* (BAR Int. Ser. 181, Oxford, 1983); idem, 'The Anglo-Saxon landscape and rural economy: some results from sites in East Anglia and Essex', 23–39 in Rackham, (ed.), op. cit. in note 35; M. Bell, 'Environmental archaeology as an index of continuity and change in the medieval landscape', 269–86 in M. Aston, D. Austin and C. Dyer (eds.), *The Rural Settlements of Medieval England* (Oxford, 1989).

⁵⁴ J. Haslam, 'The development and topography of Saxon Cambridge', *Proc. Cambridge Antiquarian Soc.*, 72 (1982), 13–29; Oosthuizen, op. cit. in note 16.

⁵⁵ D. Hill, *An Atlas of Anglo-Saxon England* (Oxford, 1981), 98 and 58; Oosthuizen, op. cit. in note 16.

⁵⁶ C. R. Hart, 'The *Aldewerke* and minster at Shelford, Cambridgeshire', *Anglo-Saxon Stud. Archaeol. Hist.*, 8 (1995), 43–68.

⁵⁷ Faith, op. cit. in note 46, 122.

⁵⁸ S. Bassett, 'The administrative history of the diocese', 147–73 in N. Brooks and C. Cubitt (eds.), *St Oswald of Worcester: Life and Influence* (Leicester, 1996), 151.

This more general proposition is supported by the relative scarcity of field-names and place-names of Scandinavian origin in Cambridgeshire. Toft, Bourn, Caxton and Croxton are the only potential Scandinavian place-names in Cambridgeshire. Even this is in doubt, since the first two are not certainly Scandinavian, and the last two combine Scandinavian and Saxon elements. All four may date from the later Saxon period when Scandinavian personal names were still commonly used.⁵⁹

Dr Debby Banham, in a recent examination of other evidence, has also concluded that the more general case for a Scandinavian introduction of open-field farming in England is unproven and suffers from two major disadvantages. The first is that the limits of open-field farming (coincident with the Central Province) do not correspond with the area of the Danelaw, hence 'if open field farming was introduced by Scandinavian settlers, they didn't introduce it everywhere they lived, and someone else must have introduced it to other areas'.⁶⁰ The second is that strip-cultivation seems to have been introduced in Scandinavia in the 12th century, two or three centuries after it is first believed to have been introduced in England. The case for a Scandinavian introduction of open fields and, hence, of this layout in the Bourn Valley seems at worst unlikely, and at best unproven.

In Cambridgeshire at least, the period of the Danelaw appears to have been one of relative continuity than of change, at any rate in terms of change in the landscape. The layout of long furlong boundaries in the Bourn Valley may therefore represent an agricultural layout of Middle Anglo-Saxon origin, possibly predating the creation of the Danelaw in A.D. 870.

INTERPRETATION

This arrangement of long furlong boundaries appears to have been laid out *ab novo* in a single phase in the Middle Anglo-Saxon period. There is nothing within it to indicate that these remains represent the amended fields of any other kind of farming regime or are the product of processes of different periods. The indented character of the hundred boundary as it crosses this layout suggests that selions appear to have been an integral part of the arrangement since its inception.

FUNCTION

It is difficult to explain why a continuous alignment of seven or more long furlong boundaries, lying about 200 m apart, should run for over 8 km along the contours of the valley, or why it was important for them to be unusually wide.

For example, if they were laid out as droveways to allow the movement of stock across arable fields from one central place to another, then those central places have been lost, since the furlong boundaries are aligned neither on Cambridge to the north-east nor on Haslingfield to the south-east. Nor does this

⁵⁹ Reaney, *op. cit.* in note 20, xix–xxii.

⁶⁰ D. Banham, 'Race and tillage: Scandinavian influence on Anglo-Saxon agriculture?', in M. Kilpiö et al. (eds.), *Proc. Internat. Soc. Anglo-Saxonists Conference, Helsinki 2001* (forthcoming).

explanation illuminate the necessity for so many droves to exist so close to each other, when one or two would have done just as well.

The most likely explanation is that these unusually long and wide furlong boundaries provided a 'bank' of additional nutrients which could be added to arable fields by sheep which may have grazed on these narrow commons by day and were folded on the arable lands at night, a common practice in the Middle Ages (see below). This would make for greater yields than from those selions dunged by sheep which grazed only upon the stubbles or fallows. 'Additional grassland at the field-edge reduced the demands which the system placed upon its environment. More livestock could be kept and the furlongs which remained ploughed benefited from the transference of nutrients, through animal manure, of those left under grass.'⁶¹ This is because sheep which grazed on grass at the edge of arable fields recycled nutrients from the verge on to the field, thus adding more 'value' to their dung. If they had grazed only on the fallows, they would simply have recycled nutrients that were already in the field, adding nothing new.

If this explanation for the long furlong boundaries is correct, it could also mean that this field system was designed for intensive arable cultivation without a fallow period. It may also explain why so many of the long furlong boundaries were called 'commons'. The benefits for productivity may explain why they were retained once open-field farming had spread across all the remaining land of the four parishes, resulting in the subdivision of the layout of long furlong boundaries between the four parishes, and the inclusion of each portion in the now self-contained open fields of each parish.

The contention that this arrangement of long furlong boundaries was created for a system of arable cultivation is supported by two other sets of evidence. The first is the indented character of the hundred boundary which implies that selions may have been part of the layout from the outset. The second is the distribution of field-names which suggests the area of long furlong boundaries was predominantly under arable cultivation, by contrast with the extensive pastures which lay on the middle and upper slopes of the valley to the north .

MANAGEMENT

The geographical relationship between the arrangement of furlong boundaries on the lower slopes and areas of intensive and rough grazing and woodland on the middle and upper slopes of the Bourn Valley recalls the characteristics of the agricultural regime known as 'infield' and 'outfield'. That is, that infields were lands that were intensively manured and cultivated without any periods of fallow, and outfields were lands that were less intensively manured and whose periods of cropping were interrupted by fallow periods which might sometimes extend into decades. In the case of the long furlong boundaries of the Bourn Valley, the 'infield' might have comprised the entire arrangement of long furlong boundaries along the lower slopes, and the 'outfield' the pastures which lay on the higher ground.

⁶¹ H. S. A. Fox, 'Social relations and ecological relationships in agrarian change: an example from medieval and early modern England', *Geografiska Annaler*, 70B (1988), 105–15, at p. 111.

Outside the Central Province, in ‘ancient countryside’ where classic open-field farming was not introduced, common grazing beyond the limits of arable fields of all periods is still visible in many places. In many places, particularly where pastoral farming remained predominant, a clear division between those areas under intensive, permanently cultivated arable and those used for common grazing persisted into the High Middle Ages. At Bagworthy, Exmoor, for example, intensively-cultivated medieval arable lands lay below ‘a managed system of grazing for livestock’.⁶²

This pattern of land division is not usually found in the Central Province in the medieval period. If it ever existed there, it had disappeared under the extension of open fields across almost all the available land of each parish between about A.D. 850 and 1250. Yet, if the interpretation of the evidence from the Bourn Valley is correct, it offers one of the first instances of preservation of infield/outfield farming to have been recognised in the physical remains of classic open fields.

LORD OR COMMUNITY?

The cohesion of this layout, combined with its significant extent — up to 8.5 km long and 2 km wide — indicates that it was probably created before parishes had evolved into independent parishes, that is, before the fission of the putative extensive estate was well-advanced. Had the individual lords or communities of each parish been responsible for initiating an open-field arrangement across the arable lands of their communities, it is less likely that the layout would have been continuous across several parishes.

The way in which the parish boundaries subdivide the arrangement of long furlong boundaries between each community also implies that, by the time parish boundaries had evolved, the unitary character of the long furlong boundaries was a thing of the past. All the documentary evidence for open field farming in these parishes, from the 13th century onwards, supports the conclusion that each community farmed its own open fields without reference to its neighbours.⁶³

This conclusion is supported by the pattern of the boundaries of the furlongs on the middle and upper slopes of these parishes. The alignments of these furlongs stop at each parish boundary, and are not aligned on the furlongs of their neighbours. This difference between the continuous cross-parish alignments on the lower slopes, and the discrete, parish-contained alignments on the upper slopes, suggests that the latter were laid out after the former. It also implies that, when furlongs were extended over the middle and upper slopes of the valley, parish communities were more important in the layout and organisation of each parish’s arable land than any higher authority — in direct contrast with the long furlong boundaries whose extent implies an authority with control over a wider area covering at least four later parishes.

The arrangement of long furlong boundaries therefore implies that, whether or not local communities took an active part in its planning and implementation, it was instigated by some higher authority which had the power to combine

⁶² H. Riley and R. Wilson-North, *The Field Archaeology of Exmoor* (Swindon, 2001), 102.

⁶³ Postgate, *op. cit.* in note 11.

communities in a project in which their own landscapes played just a part, at a time before parish boundaries were firmly established. If this is correct, then this arrangement of long furlong boundaries may also be the first physical evidence for the working of those extensive estates inferred by historians and geographers from documentary evidence, place-names and parish boundaries.

CLASSIFICATION

The possibility that the arrangement of long furlong boundaries was divided into selions from an early date and that it was intended as a system of intensive arable production across a wide area is suggestive of elements of open-field arrangements, in its physical layout and, possibly, its tenurial arrangements. It was divided into furlongs (layout). The furlongs may have been subdivided into selions (layout and, perhaps, tenure).

This layout of long furlong boundaries in the Bourn Valley cannot easily be interpreted as a classic open-field arrangement. This is because it covers only about a third of each parish, and because the extensive grazing available on the middle and upper slopes would have rendered fallowing unnecessary for supporting the animals of each community. Its pattern of cropping is not therefore likely to be similar to that of classic open-field systems.

This combination of some open-field characteristics with important differences in an area in which classic open-field farming later developed, suggests that the long furlong boundaries may represent a proto-open-field arrangement.

If this analysis is correct, then this evidence from the Bourn Valley may provide the earliest physical evidence for the process, character and date at which elements of open field agriculture were introduced in the Central Province.⁶⁴

IMPLICATIONS

This evidence for a Middle Anglo-Saxon proto-open-field system possibly created in the Bourn Valley between c. A.D. 700 and 870 has two more general implications.

First, it raises the question of whether intensive agriculture and such an extensive field layout could have been introduced without the heavy plough. The average distance of approximately 200 m or 220 yards (the traditional length for a selion) between the long furlong boundaries in the Bourn Valley may appear to give additional weight to an argument for the heavy plough, since it is commonly accepted that this was probably the greatest length a plough-team of oxen could pull a plough on claylands without stopping. However, this cannot necessarily be used as evidence for the heavy plough, since infield cultivation (if that is the system of agriculture for which these furlong boundaries were created) simply required the liberal use of manure and does not imply the use of ards and spades or of the

⁶⁴ The earliest previously known ridge-and-furrow (the physical manifestation of a selion) dates from the late 11th century at Hen Domen, Montgomeryshire, where it is overlain by a Norman motte-and-bailey castle: P. Barker and J. Lawson, 'A pre-Norman field system at Hen Domen', *Medieval Archaeol.*, 15 (1971), 58–72. The earliest 'firm written evidence' of open-field farming in the Danelaw comes from Brandon and Livermere, both Suffolk, where between 939 and 949 'every 8th acre' was sold to the Abbey of Ely: Dr C. Hart, pers. comm.

heavy plough.⁶⁵ Banham, too, has argued that there is a 'need to be cautious about assuming that open fields necessarily mean a heavy plough'.⁶⁶ This proto-open-field system from the Bourn Valley does not shed further light on this question.

Second, the evidence discussed above implies that open fields were introduced into the Bourn Valley in at least two phases. In the first phase, perhaps at some time in the 8th or 9th centuries A.D., a proto-open-field system was laid out across the southern third of at least four parishes on the northern slopes of the valley. In the second phase, perhaps between the 10th and 12th centuries, open-field agriculture was discretely extended over the middle and upper slopes of each parish by each community working on its own.

THE ORIGIN OF THIS PROTO-OPEN-FIELD SYSTEM

A possible explanation for origin of this proto-open-field system may lie in a diversion through the agricultural, cultural and administrative history of the period between about A.D. 500 and 700 which immediately preceded the likely period of its construction.

The post-Roman and Early Anglo-Saxon Periods appear to have seen some shift to pastoralism in East Anglia as well as in other parts of England.⁶⁷ There was an increased emphasis on the farming of cattle, sheep and pigs, and in some areas arable fields appear to have been converted into areas of intensive or rough grazing according to need.⁶⁸ The proportions of cattle, sheep and pigs varied from place to place according to the agricultural conditions of each locality, and according to the social status of local farmers and their markets.

The economic importance of these animals is underlined by their presence in the renders stipulated in Ine's laws from Wessex (A.D. 688–94): each '10 hides should render 10 vats of honey, 300 loaves, 12 "ambers" of Welsh ale, 30 of clear ale, 2 full-grown cows or 10 wethers, 10 geese, 20 hens, 10 cheeses, an amber full of butter, 5 salmon, 20 pounds of fodder and 100 eels'.⁶⁹

The possibility that these laws reflect a more pastoral economy in Wessex than in eastern England should be considered. There is, however, enough evidence to indicate that there was a substantial emphasis on stock farming in eastern England during the Early and Middle Anglo-Saxon periods. Some of this evidence is discussed below, and is supported by the suggestion that many prehistoric landscapes in East Anglia were preserved into and through the Saxon period by their widespread use as pasture rather than as arable.⁷⁰

Archaeological evidence of the social value placed on stock includes the large percentages of cattle and pig bones found at high-status sites like Icklingham

⁶⁵ P. J. Fowler and A. C. Thomas, 'Arable fields of the pre-Norman period at Gwithian, Cornwall', *Cornish Archaeol.*, 1 (1962), 61–84.

⁶⁶ Banham, *op. cit.* in note 60.

⁶⁷ Murphy (1983 and 1994), Bell (1989), *opp. cit.* in note 53; and see below.

⁶⁸ D. Hall, 'The Late Saxon countryside: villages and their fields', 99–122 in D. Hooke (ed.), *Anglo-Saxon Settlements* (Oxford, 1988), 107; Taylor, *op. cit.* in note 4, 76; T. Williamson, 'Parish boundaries and early fields: continuity and discontinuity' *J. Hist. Geog.*, 12 (1986), 241–8.

⁶⁹ D. Whitelock (ed.), *English Historical Documents c. 500–1042* (hereafter *EHD*) (London, 1979), 406.

⁷⁰ Williamson, *op. cit.* in note 68, 245.

(Suffolk) and Wicken Bonhunt (Essex) and seem to have been related to feasting — that is, for conspicuous consumption. This seems also to be the implication of Early Anglo-Saxon decorated drinking vessels made from cattle horns, like that from Little Wilbraham, Cambs., which were part of feasting assemblages.⁷¹ Further evidence of the economic value placed on cattle is revealed by the assignment of monetary compensation for damage even to their eyes and tails.⁷²

It seems very likely that one concomitant of an economy in which cattle and/or sheep herding was an important part of agricultural activity, would have been social values that placed as much emphasis on these animals as symbols of status and wealth as on their potential for food or traction, and that this in turn may have reinforced an emphasis on pastoral farming. The size, quality and even colour of a herd of cattle — like the ‘vast royal herds, each bred to a single colour’ of the Zulu kings — and the amount of fodder needed to keep them over the winter, might be expected to mirror the status of their owner.⁷³

That this was the case in Middle and Late Anglo-Saxon England is suggested by the promulgation and reiteration into the 10th century of laws relating to cattle raiding, long after most parts of the Central Province had become primarily arable.⁷⁴ It is difficult to believe that cattle were the only frequent objects of theft in Late Saxon England and yet they are almost the only examples cited in the laws.

It may be that the use of cattle as signifiers of wealth and status in Saxon England came under increasing pressure from the end of the 7th century onwards. The growing demands of both local lords and regional kings for food renders in grain, and the development of coin-based regional exchange, may have stimulated the specialised production of a surplus of corn alongside animal produce.⁷⁵ It is this change to an economy increasingly directed towards arable cultivation, which forms the premise for a conjectural argument, offered here only tentatively and in the absence of other explanations, for the creation of this early open-field layout over such a wide area of the lower Bourn Valley.

Perhaps the creation of a proto-open-field system across the lower part of the Bourn Valley was a strategy intended to resist the pressures for a shift from a predominantly pastoral agricultural system to wholesale arable cultivation by accommodating these strains to the smallest possible extent. The implementation of this putative strategy in the Bourn Valley may have been led by two interdependent goals: the protection of as much as possible of the common pastures further north from encroachment by arable fields by confining the arable to one section of the valley; and the attempt to produce a sufficient surplus of grain by introducing a system of intensive arable cultivation without fallow in order to minimise land given over to arable production. In these ways the extensive pastures for the communities’ herds of cattle and sheep would be conserved. It was only

⁷¹ P. Crabtree, ‘Animal exploitation in East Anglian villages’, 40–54 in Rackham, *op. cit.* in note 35; R. C. Neville, *Saxon Obsequies* (London, 1852), *pe.* xv.

⁷² *EHD*, 404–6.

⁷³ Murphy (1983) *op. cit.* in note 50, 194; D. Morris, *The Washing of the Spears* (London, 1965), 79.

⁷⁴ *EHD*, 423 and 430.

⁷⁵ Tim Pestell and Katharina Ulmschneider (eds.), *Markets in Early Medieval Europe: Trading and ‘Productive’ Sites, 650–850* (Macclesfield, 2003).



FIG. 7

Remnant of Broadway Common, Comberton, looking west.

when this strategy failed that open-field agriculture was more generally introduced into these parishes, perhaps in or after the late 10th or 11th centuries, and the place of cattle as indicators of status was finally lost.

CONCLUSIONS

It appears that an intensively cultivated, proto-open field layout was created across the southern part of at least four parishes on the northern slopes of the Bourn Valley in the Middle Anglo-Saxon Period. This evidence has survived in an area which has been farmed continuously for no less than the last 3,000 years, and yet in which traces of different phases of modification and amendment of land-division and agricultural regime can still be discerned.

If this conclusion is correct, and its necessary dependence on inference must be acknowledged, then it makes an important contribution to our understanding of the origins of open field farming in the Central Province.

First, it may provide some of the earliest physical evidence for the origins of open field farming within the Central Province. Second, it may offer the first evidence on the ground for the workings of an extensive estate of the Middle



FIG. 8

Remnant of Broadway Common, Comberton, looking east.



FIG. 9

Replacement of Lot Way, Toft, looking east.

Anglo-Saxon Period. Third, the two-stage origin of open-field arrangements in the Bourn Valley — and, in particular, the creation of an intensively-cultivated arable system across four parishes — suggests a new model of open-field creation to set alongside that of piecemeal or large-scale layouts, each of which were contained within parish boundaries. By offering a fourth model for such origins it suggests that such origins are varied, that is, we should be looking for multiple rather than monocausal models for the origins of open fields.

While, at present, this layout in the Bourn Valley appears to be unique both inside and beyond the Central Province, it is hoped that it will stimulate further research. While, as archaeologists, we are often keen to make claims for the uniqueness of our sites, our work as historians reminds us that the unique is deeply unsettling, and that parallels are a far more comforting context for our finds.

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APPENDIX: KEY TO FIGURE 2

COMBERTON

- (b) Headland running between furlongs along the Brook and Middle Furlong
- (c) Headland between Middle Furlong and Broadway Furlong in the W. of West Field; the alignment is continued by the southern boundary of Price Meadow Furlong. It was interrupted again by Home Heard Furlong, but its alignment can be traced again in the final section of Stallan Way which leads into Barton. The central western part of this headland is disrupted by the boundaries of a furlong lying between Broadway Furlong and Clarkes Hunches. The furlongs in this part of the field have the appearance of the reorganisation of two furlongs into three at some time after these fields were laid out. This is most marked in the NW. corner of the furlong which projects into Broadway Furlong from the SE., creating an unnecessarily complicated junction between Middle, Broadway and the un-named furlongs, and cutting across the S. part of the selions in the central and E. parts of Broadway Furlong;
- (d) Broadway Common in the W. continued E. across Fox's Bridge Road as Hensnest Way;
- (d) Millway or Lot Way in the W. became Great and Little Hodge Way in the east. Its course seems to have been disrupted by Late Saxon settlement around the church;
- (f) Meadows of Tid Brook Common in the W., and the Slade and Red Ditch in the E. formed the N. boundaries of selions in the furlong to the S. While it would have been neater to have laid out this furlong boundary so that it was more truly parallel to (a)–(d), this would have created an area of waste ground between the boundary and the Tid Brook. Instead, the furlongs on either side of Tid Brook simply had to take its rather more winding course into account, which resulted in the rather more 'tortured' appearance of this boundary;

- (g) headland between open-field furlongs which was later used to create a back lane when planned settlement was shifted on to the selions to its N. after the Norman Conquest.⁷⁶ To the E. of S. Street, it became Swaynes Lane before leading into Gurnalls Meadow. This alignment may be a later subdivision between the headlands (e) and (g);
- (h) present main road from Toft to Barton;
- (i) back boundary to properties immediately N. of the W. end of the main street, whose alignment continued E. with just one interruption as far the Barton parish boundary.

TOFT

- (j) headland shown as (a) in Comberton continued into Toft as the N. boundary of Nether Cresgras Furlong;
- (k) headland shown as (b) in Comberton continued into Toft as the N. boundary of Upper Cresgras Furlong;
- (l) East Way Common, continuation of Broadway Common in Comberton;
- (m) Lot Way, continuation of Millway Common in Comberton, which led W. across the settlement in Toft — almost certainly a later medieval shift on to former arable land — to a further wide balk, common or headland called Peck's Lane in 1815 (CCRO Q/RDz 8);
- (n) Dawes Lane (so called in 1815) (present main street), continuation of Tid Brook Common in Comberton, (CCRO Q/RDz 8). Although the modern main road turns sharply S. at the junction with the present High Street, the alignment of this boundary seems to have continued W. as Cambridge Way along the S. side of Mill Furlong into Caldecote (CCRO R60/24/2/11);
- (o) W. continuation of the present main road from Comberton, in a SW. direction into (m) along the northern side of Dovehouse Dole. There is not enough evidence to support or contradict a hint in its alignment that it has been diverted from an earlier, more westerly, course which ran into Copy Lane and, perhaps, further W. (CCRO Q/RDz 8);
- (p) Holders Way was the most northerly of these substantial balks in Toft and seems to have been the continuation of (h) in Comberton. It led W. before coming to an abrupt halt at against Stockwell Dean. However, a further substantial balk to the W. hints that it too may once have continued further W.;
- (q) furlong boundary in Toft, continuation of stepped boundary of enclosure S. of Comberton Offal, and which is used as part of the parish boundary between Hardwick and Toft.

BARTON

- (r) headland S. of the medieval and modern main road;
- (s) wide headland in Barton, continuation of Stallan Way (c) in Comberton. Part of this wide headland underlay a section of the medieval and modern road between Barton and Cambridge;
- (t) headland, continuation of Broad/Hensnest Way (t) in Comberton, and continued for a short distance as an open field division into Barton before being lost in Hensnest Furlong in Barton (CUL EDR/H1);
- (u) headland which continues alignment of headland in Comberton;
- (v) wide headland, continuation of Millway or Great Hodge Way (e) in Comberton;
- (w) headland, continuation of common (f) which followed Tid Brook for much of its E. course across Comberton, but which left the Brook where the latter turned S., and

⁷⁶ S. Oosthuizen, 'Medieval settlement relocation in W. Cambridgeshire: three case studies', *Landscape Hist.*, 19 (1997), 43–55.

continued as a headland into Barton where, by 1839, its continuation E. had been stopped by the creation of ancient enclosures;

- (x) headland and right of way, continuation of alignment of pre-enclosure main road from Comberton into Barton;

GRANTCHESTER

- (y) Section of pre-enclosure road called Stulpe Way, continuation of (r) in Barton;
- (z) Pre-enclosure road called Mill Way, continuation of (s) in Barton;
- (A) Wide headland called Mere Way Common, continuation of Mill Way Common (e) in Comberton and Lot Way (m) in Toft;
- (B) Pre-enclosure road called Deadman Way;
- (C) Pre-enclosure road called Rivers End Way;
- (D) Unnamed headland and pre-enclosure road, along N. side of Ridgeway Furlong.