Testing transhumance: Anglo-Saxon swine pastures and seasonal grazing in the Surrey Weald

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It is commonly stated that the main pre-Norman Conquest use of the Weald was for transhumance – the grazing of certain pastures, to and from which livestock were moved over substantial distances at the beginning and end of a defined season. Often suggested to have been a phenomenon with prehistoric roots, in several ways transhumance seems to have been most important as a socio-economic institution in the earlier medieval centuries. Integral to such conjectures are those Wealden landholdings often known as denns, which are understood to have functioned as seasonal pastures for pigs or swine – the terms are interchangeable (Bennett 1970, 223) – at a considerable geographical remove from the associated estate centres (notably by Witney 1976 and Everitt 1986). While there is ample evidence that, at the time they emerge into documented history, many of these holdings were being used as swine pastures, the contemporary direct testimony for seasonal usage is slight at best, while the inherent problems surrounding any possible transhumance of swine appear great. Altogether, these call into question the validity of previous conjectures. By looking at a broader range of material, textual and landscape evidence, it can be demonstrated that the denns of Surrey did indeed operate as part of a seasonal grazing regime involving movement of swine into and out of the Weald. Further, there are hints that the regime involved some swine remaining in the Weald after the majority had been driven back to the estate centres, implying the benefit of year-round settlement at the wood pastures for the swineherds.

Introduction

The importance of woodland pasture in the agricultural economy of post-Roman lowland England is now generally acknowledged thanks to the work of scholars such as Della Hooke and the late Oliver Rackham, who have proffered useful summary accounts of the use of woodland areas for livestock grazing in the Anglo-Saxon period and subsequent centuries (Hooke 2010, 139–41, updating Hooke 1998, 142–4; Hooke 2012; Rackham 1986, 119–52). When dealing with pig farming in wood pastures, virtually every scholar who has written on the subject assumes that those in the Anglo-Saxon Weald (and other forest areas like the Arden in Warwickshire) were grazed as part of regimes that involved transhumance – the movement of livestock over a significant distance for the purpose of exploiting a grazing resource for a particular season (eg Hooke 2010, 138–9, 144–5; cf Ford 1979, 149–51).

The same applies to authors of studies specifically concerned with Surrey. Rumble was perhaps the first to discuss transhumance in relation to the Surrey Weald, but was non-committal in terms of naming pigs (or any other species) as the livestock involved (Rumble 1976, 171–2). A decade later Poulton (1987, 215) went so far as to state it was certain that transhumance of the Weald 'was fundamental to the early Saxon economy', although again was not specific about which domesticates were grazed in this way. John Blair was more explicit, commenting on how a 'major activity in the earlier Middle Ages was the seasonal droving of swine and cattle to summer pastures in the Weald', and made frequent use of the terms 'transhumance' and 'swine pasture' (Blair 1991, 10). More recent studies of early-recorded locations in the Surrey Weald have continued in much the same vein. Turner discussed the nature of Anglo-Saxon settlement at Thunderfield, also the named location of a number of detached pastures, and queried whether the seasonal pasturing of swine was the original use to which such lands were put (Turner 1997). Ellaby, meanwhile, synonymises the three denns of Merstham recorded in a charter of 947 with swine pastures, and largely accepts the thrust of Rumble's earlier suggestion about transhumant grazing of the Weald, albeit without using the term himself (Ellaby 2004, esp 73, 87–9). It is noteworthy that Ellaby, like Rumble and Blair before him, considers the wood pastures of the Weald to have been summertime grazing resources.
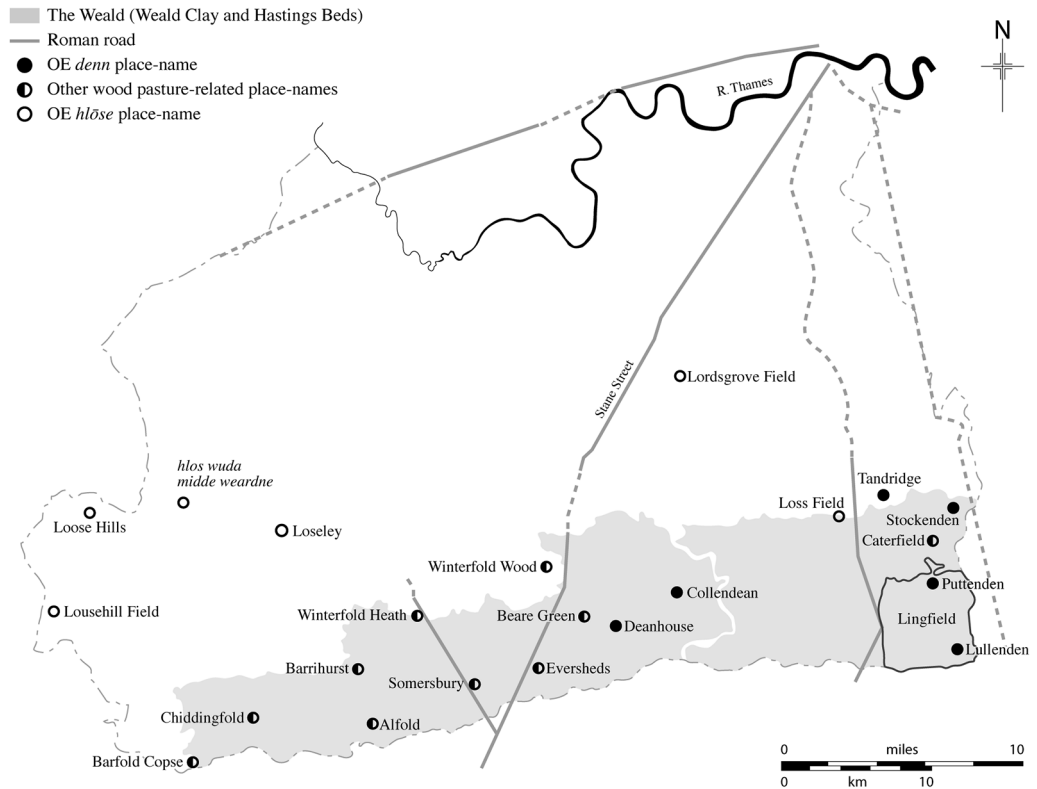
Fig 1 Place-names in Surrey relevant to swine and wood pasture mentioned in the text.

The issue is that such scholarship has used a limited range of references culled from Anglo-Saxon charters (none of which specifies the long-distance seasonal driving of swine or other livestock) and later manorial accounts, supported by particular place-name elements and topographical analysis reconstructing the most likely routes between Wealden and extra-Wealden pastures. But is this sufficient to prove the transhumance of pigs between woodland pastures inside and outside the Weald by Anglo-Saxon herders? In a recent volume dealing with many aspects of the zooarchaeology of pig domestication and management in different locations around the world (Albarella *et al* 2007), various authors frequently discuss aspects of pig husbandry within forest swine pastures and farmyards, but there is no mention whatsoever of linking the two by transhumance. Is this an oversight, or indicative of early medieval practice? Transhumance of other types of livestock was widespread in Britain in the Middle Ages, and the droving of selected numbers of pigs to market or to render was an unavoidable aspect of their husbandry before refrigeration, but these reasons nevertheless are not equivalent to the annual transhumance of entire herds of swine to distant woodlands and back for pannage in autumn. Consequently, the matter deserves much closer examination than it has received to date.

It is generally evidenced and accepted that some of the earliest documented uses of the woodlands in the Weald were for the pasture of swine. However, such uses were not confined to the Weald and, by the time of Domesday, can be clearly seen as an important source of rent to the lord, either in pigs or money, throughout Surrey. Rackham, discussing the significance of references to pigs and woodlands in Domesday Book, asserted that 'the wood-swine had become the swine of the imagination; real pigs [...] were fed in other ways' in England in 1086, although he also conceded the Weald was the 'chief stronghold' of
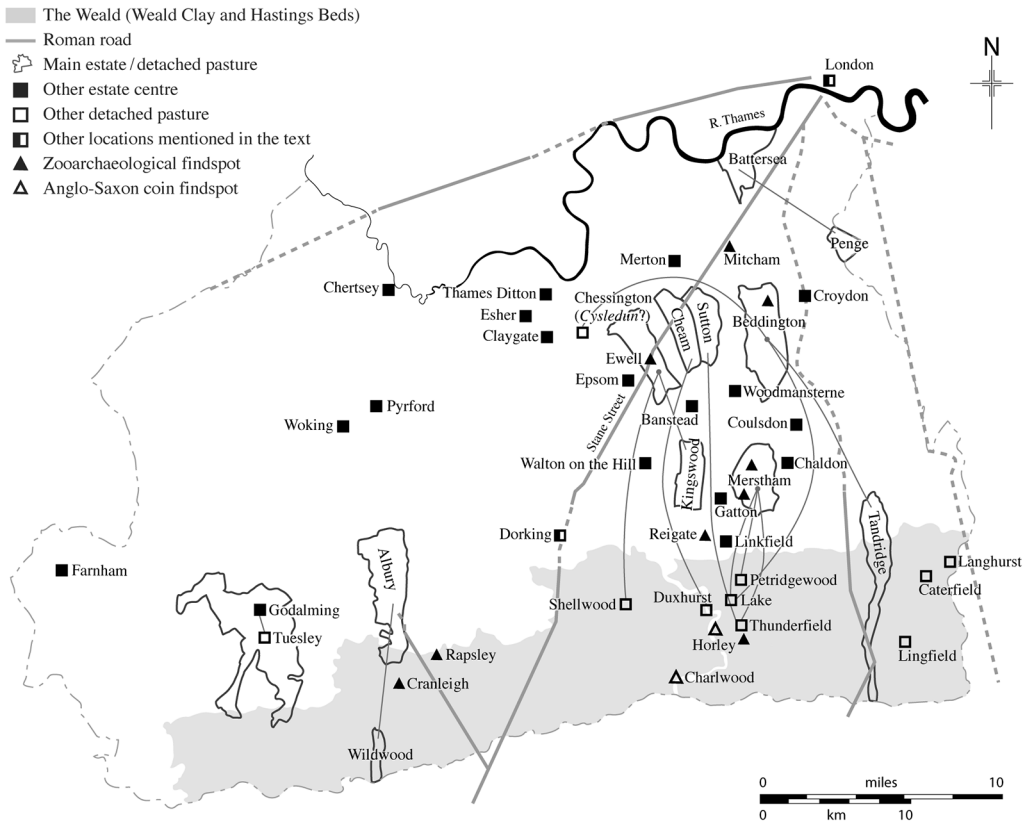
Fig 2 Locations of key historical and zooarchaeological evidence in Surrey mentioned in the text. Estates are based on pre-1870 parish boundaries – note that in some cases, the areas shown may not be identical to those of Anglo-Saxon and medieval manorial estates.

woodland pig grazing, as is proved by its rich corpus of post-Norman Conquest historical testimony (Rackham 1986, 75). Moreover, documentary testament of detached woodland pastures cannot and should not itself be taken as proof of the transhumance of swine.

From his pioneering reading of the Kentish evidence, Kenneth Witney posited Wealden pig grazing regimes 'could be comparatively opportunistic' and limited to different proximate woodland pastures, concluding with the bold statement 'there is no reason to invoke the mechanism of transhumance' (Witney 1976, 85). Given the Wealden pastures could be many miles distant from the parent estate, and the attendant problems of keeping pigs, journeys to and from the North Downs ridge and beyond and deep in the Surrey Weald involving large herds for a grazing season lasting a matter of weeks might hardly seem justifiable. In the light of these facts, it seems at least equally arguable the primary husbandry of pigs took place year-round in the forest pastures and that pig movements only took place for the purposes of consumption or the provision of renders.

To discover which interpretation is correct, it is vital to acquire an understanding of exactly what is meant by transhumance to establish how and where it operated, and if it operated in the Surrey Weald. Only by returning to first principles and analysing the evidence from the fundamentals upwards may a better understanding of the reality be obtained. To do this first requires the characteristics and manifestations of transhumance to be defined, something previous scholars have not always done satisfactorily. A second necessary task is to examine whether pigs were physically and temperamentally capable of being farmed under

a transhumant regime. Thereafter, the key implications of the various corpora of evidence relevant to Surrey and the wider Wealden region will be discussed. The analysis is completed with an examination of how these may be used to construct a cyclic model of pig husbandry in early medieval Surrey and its Wealden neighbours.

There is no single accepted definition of the extent of the Weald in Surrey. It is frequently treated as including all of the county south of the North Downs (eg Blair 1991, 50–5; cf Gardiner 2012, 101 fig 7.1, for a wider regional perspective). For the purposes of this study it is treated as the area on the geologies south of – and so excluding – the Lower Greensand hills: the Weald Clay, Hastings Beds, and patches of Valley Gravel. The aggregated area is shown on figures 1 and 2. The same technique was employed by Alan Everitt in his seminal study of the *pays* of Kent (Everitt 1986, 52; the term *pays* refers to a recognisable geographical region within which a group of communities exercise their social and economic functions) and, in the absence of research of equivalent time-depth and rigour in Surrey, a definition underpinned by geology seems sensible.

Defining transhumance and pannage

References to transhumance are frequently encountered in scholarship within the field of landscape archaeology as well as beyond it, but not all authors have thought to provide a clear definition of the practice. In the English language, it is a term of relatively recent coinage, deriving from the French *transhumer*, 'to (move a)cross ground', although an origin from Spanish *transhumancia* has also been claimed (Fox 2008, 352). However, it describes a process of considerable antiquity. Transhumance can be understood to mean the movement of livestock on a seasonal basis to and from different pastures (or other feeding areas) detached from each other, and likewise the parent farm(s), by a material distance. Some scholarly definitions leave open the possibility that movement took place every season (eg Fox 2008, 352), but published discussions tend to focus on the movement associated with the beginning and end of one specific agricultural season, such as the *Alpaufzug/Alpabzug* of the Swiss Alps, or the journeys to/from the Norwegian *seter* (summer farms), which are still practised or have been into very recent times.

Grazing practices consistent with transhumance are well evidenced across medieval Britain, and they survived into the comparatively recent past throughout many of its 'upland' regions. Fox published extensively on the evidence for and nature of transhumance on Dartmoor in south-west England (eg Fox 2008), while in northern England the custom of transhuming cattle was reported by Camden in the 17th century, when it was called 'summering' (Camden 1697, 816). A millennium earlier, comparable grazing of sheep in the kingdom of Northumbria is intimated by references in the anonymously-authored *Life of St Cuthbert* (who lived 634–87) to 'seasonal dwellings used only in spring and summer' (*habitacula uernalia et aestulia*) and shepherds' huts (*pastoralibus habitaculis*), to which Bede's slightly later version adds a note of flocks (*pecorum*) grazing on mountains (Colgrave 1940, 70–1, 126–7, 164–5).

In every case it was cattle or sheep that were being transhumed. Does this mean pigs were not grazed in analogous ways in the medieval period? The Wealden evidence to be presented below would strongly suggest they were, but previous discussions have arguably taken certain things for granted. One such shortcoming is a failure to establish the compatibility of transhumance with the extensively-documented institution of pannage – the right to exploit woodland for the purpose of grazing pigs. It was a communal right, albeit one that was usually under seigneurial control (eg Rackham 1986, 122). Something akin to pannage seems to be attested in the law code of King Ine of Wessex, written in Old English (hereafter OE) and usually dated to *c* 694 (Attenborough 1922, 34). Ine 49 refers to a practice or charge relating to pigs called *æfesne* which Attenborough translated as 'pannage', as well as 'mast pasture' (*mæstenne*), albeit this was held in severalty (*ibid*, 53).

Pannage took place within a defined season – as it does to this day in the New Forest as common of mast – to take advantage of the fall of acorns and beech mast (fig 3), supplemented

Fig 3 Staffhurst Wood, Limpsfield. Although the modern history of the woodland means it contains no trees dating from before *c* 1800, the mix of oaks and beeches offers a rare hint for the Surrey Weald of the woodlands in which medieval pigs were pannaged (Rob Briggs).

by more perennial foodstuffs such as roots and berries (Wiseman 2000, 2). Most authorities state that this ran between August and December in the Anglo-Saxon period (although Wiseman (2000, 3) specifies a period between 29 August and 31 December); however, no contemporary source provides specific dates (Banham & Faith 2014, 130 fn 192). In many parts of Anglo-Norman England this was reduced to six to eight weeks, usually stated to be in the months of October and November, although others give a mid-September to mid-November span, which is more in line with the historical evidence set out below (Albarella 2006, 79; cf Stamper 1988, 132).

Illustrations from calendars and other manuscripts bear out this autumnal association. The illustration for the month of September in the Cotton Tiberius Calendar is frequently reproduced or cited as a depiction of the herding and grazing of pigs in woodland pastures (f. 7r; Banham & Faith 2014, pl 2). A marginal illustration in the early 14th century Luttrell Psalter depicts pigs feeding beneath an oak tree (f. 59v: Albarella 2006, 78), while the 'November' page from 15th century *Les Très Riches Heures du Duc de Berry* (f. 11v: Cazelles & Rathofer 1984) provides a late but familiar illustration of a pig herd being grazed in woodland.

Pannage was, therefore, essentially an autumnal practice. This has not always been adequately acknowledged in previous transhumance-invoking works concerning the Surrey Weald. Likewise, it goes against definitions of transhumance made in certain influential studies that are couched in terms of the grazing of *summer* pastures (eg Fowler 2002, 228; Oosthuizen 2013, 31), although most do not go so far and therefore it does not seem to warrant being treated as an essential element of the practice. That pannage took place in the Weald is beyond question, since the term is a common feature of post-Conquest records. In Kent, Witney calculated that, for some particularly well-documented manors, 'the great bulk of pannage, not less than three-quarters and probably nearer four-fifths of the whole, was being obtained from the Weald' at the time of the Domesday Survey (Witney 1976, 95–8).

The predominance of autumn grazing in the Weald may explain the Kentish place-name Somerden, '(the) summer denn', emphasising the fact that the Weald played host to grazing regimes other than pannage, presumably involving animals other than pigs (Everitt 1986, 37–8). However, the origin of the minor place-name Somersbury – 'summer *burh*' – in Ewhurst parish in the Surrey Weald is probably subtly different, more likely lying in a structure akin to the 'sumerhus' erected by Shellwood tenants ahead of the annual seigneurial pannage inspection there (*PNS*, 241; Blair 1991, 55).

Whatever the extent to which Conquest-era Surrey mirrored Kent in favouring the Weald as its main pannage location, it need not follow that pannaged pigs were transhumed, ie moved over substantial distances rather than between proximate Wealden pastures (or non-Wealden equivalents). Pannage was both a right and a practice or, more precisely, a concept that encompassed a range of practices. It did not require the long-distance movement of grazing animals if there were appropriate wood pastures close at hand, but it was by nature extensive in terms of the area of grazing land required. In Surrey, pannage almost certainly persisted as a key feature of pig farming into the late medieval period, hence the following reference from a mid-14th century custumal and rental of the Rectory Manor of Godalming: '[William Philyp] shall pannage his hogs in the wood of Tuesley [...] and he shall have them going in the lord's wood by the half year except six weeks after [the] feast of St. Michael' (translated from Woods 1909, 130).

In the case of the Rectory Manor of Godalming and many others besides, the wood pasture used for pannage was within or close to the main manorial and/or parish unit. The pannage regime therefore would not count as transhumance, since the physical distance did not necessitate the dislocation of both animals and herders for the duration of the grazing season. It has been proposed that movement between different *pays* is key to an extensive grazing regime being classed as transhumance (Hooke 2012, 40, drawing on the earlier work of Harold Fox). Inter-*pays* movement may have been true in some, maybe many, cases, but arguably the distance travelled is more pivotal, given it is possible for journeys of many miles to be made within a single *pays*, as well as over much shorter distances between locations at the borders of two *pays*. This also avoids the potentially troublesome matter of providing acceptable technical and spatial definitions of *pays* within a given territory.

Fox postulated a major change in how transhumance was practised on Dartmoor occurring in the 10th or 11th centuries, with responsibilities for driving, managing and living alongside the livestock on the summer pastures shifting from the owners of the animals to 'paid guardians' (Fox 2008, 352–3). It is a moot point whether a similar change took place in the Weald, but the existence of professional swineherds (or at least men charged with the herding of swine for a specific period within the agricultural year) is well attested in the medieval written record. The quasi-legal text known as the *Rectitudines Singularum Personarum* identifies two roles, the tenant swineherd (*gafolswan*) and the bound swineherd (*æhteswan*), although it does not go into detail discussing their responsibilities. However, it does note that a peasant (*gebur*) was obliged to pay the demesne swineherd six loaves of bread in return for driving his pigs to the mast-pastures (*7 ælc gebur sylle .vi . hlafas ðam inswa ðonne he his heorde to mæstene drife*: Gobbett 2015). This can be read as indicating the swineherd had little or no involvement in arable farming, and was instead permanently occupied with pig husbandry, yet this need not mean the animals were driven over large distances. Even so, the same text mentions the tenant swineherd was expected to be 'horsed' (*gehorsad*) at all times, so horses may have been used in the movement of the herds to and from the pannage woods. The Cotton Tiberius Calendar shows two men herding pigs towards oak trees on foot, but using or carrying a whole set of aids: dogs, a horn, a spear, and a large sword (Banham & Faith 2014, pl 2).

Distances between estate centres and associated denns substantial enough to be consistent with transhumance are a major plank in the argument in favour of its operation in the Weald. However, Rumble cited Penge and Kingswood as cases of non-Wealden woodlands where transhumant grazing may have been practised (Rumble 1976, 171). When the grazing

regime at Penge, detailed in a fine of 1204 (translated in Giraud Browning & Kirk 1891, 240–1) is studied, it is hard to see what differentiates it from the recorded outlying Wealden woodland holdings of other east Surrey estates. Penge is several miles distant as the crow flies from its parent estate of Battersea, and was intercommoned between the manors of Battersea and Beckenham. The text of the fine refers to 'thirty hogs [...] quit from pannage' as well as the pasturing of cattle, goats and sheep. Furthermore, all Beckenham pigs and cattle had to be removed from the wood during a right-cum-season known as *pesso*, 'mast-time', which ran from Michaelmas (29 September) to Martinmas (11 November). These dates coincide with the 'time of mast' in Kent noted by Du Boulay (1961, 79), and the aforementioned Rectory Manor of Godalming record would imply an identical period of restricted grazing of its demesne woodland.

To reiterate, pannage took place across medieval Surrey, whereas transhumance did not. Transhumance of swine can only be considered to have taken place if, at the start of the pannage season, most or all of the swine were brought into woodland at a substantial distance from the main centres of population and agricultural activity, a dislocation sufficient to necessitate both the herd and herdsmen charged with their oversight remaining at the outlying pasture grounds for the duration. At the end of the season, the animals and their guardians would undertake the return journey to the main estate or, in the case of a minority of the livestock, market or rendering centres. Another facet of the Surrey evidence is the necessity to cross tenurial boundaries, leaving one grazing resource and jurisdiction to travel along droving routes to another pasture (or pastures) under the same manorial lordship and administration.

Transhumance goes beyond the seasonal rotation of pastures, which was an essential element of many pastoral regimes, in its requirement for the seasonal resettlement of herdsmen. Rarely, if ever, is this specified, but can be deduced from the distances between identifiable pannage and non-pannage pastures, even if it is arguably neither possible not appropriate to quantify a minimum distance over which livestock had to travel in order to qualify as being transhumed. Thus, while it is conceivable that swineherds at Godalming lived temporarily alongside the animals pannaged at Tuesley in the same way as their Battersea equivalents would surely have done at Penge, the distances travelled by the former at the beginning and end of the pannage season almost certainly would have been shorter, and would not have involved wood pastures separated from the main body of the estate. The practicalities of the pannage of Penge can therefore be said to be consistent with transhumance, but not of Tuesley.

Anglo-Saxon pigs and pig husbandry

The transhumance of herds of swine in the Weald has been inferred from Anglo-Saxon charters and place-name evidence for pig pastures, but any such hypothesis fails if it were not physically possible for early medieval pigs to be moved over distances of several miles or more in a relatively short space of time, namely days. Today, pigs are – with exceptions such as the New Forest and Spanish *dehesa* wood pastures (Trow-Smith 1957, 82) – animals of the farm, not the forest. By contrast, it is widely considered among zooarchaeologists and agricultural historians that, even in later medieval times, in north-western Europe, pigs (*Sus scrofa f. domestica*) were primarily herded in woodland (eg Ervynck *et al* 2007, 171).

The shift in the living environment of pigs from forest to farm was an important step in the evolutionary history of the European domestic pig, but is barely noted in written sources and consequently received little serious scientific scrutiny until recent years. Fortunately, a number of zooarchaeological studies have now been published that go some way towards setting this profound change in a chronological context. It is reported that the differences between woodland and farmyard regimes in Flanders produce diagnostic differences in tooth wear and, as a result, the shift in primary pig husbandry away from forest pasture towards breeding in the farmyard has been placed in the 13th/14th centuries, marking 'the final

retreat from its natural environment' for the pig (Ervynck *et al* 2007, 173). A comparable development has been proposed at Dudley Castle, Worcestershire, where zooarchaeological and carbon isotopic evidence points towards 'a major change in pig management' during the 14th century, whereby fewer, larger animals were reared in more spatially-restricted conditions (Hamilton & Thomas 2012).

Pigs stand out among the main domesticates for serving a single purpose, as a source of meat (with fat/lard as a related by-product) rather than important secondary products such as milk, hide, or for traction (Albarella 2006, 72). The meat they yield is of good quality and lends itself well to preservation by salting or smoking, which is fortunate given that pork spoils more rapidly than beef or mutton (Banham & Faith 2014, 115–16). A second key positive attribute of pigs is their fecundity, with even unimproved breeds tending to produce at least eight piglets per litter (Albarella 2006, 85–6). Sows are able to bear two litters per year, although breeding and farrowing was most probably restricted to a single episode annually in the extensive husbandry regimes; the latter generally took place in the spring (Bennett 1970, 227; Albarella 2006, 84–5).

It is a common assumption – no doubt a correct one – that Anglo-Saxon domesticated pigs were descended from, and continued to resemble, wild boar (*Sus scrofa scrofa*; Wiseman 2000, 5). As such, being smaller and slimmer than modern improved pig breeds, as well as omnivorous, they were perfectly suited to seek whatever food was available in woodland environments by penetrating dense undergrowth as well as grazing in open areas (Trow-Smith 1957, 82). One physiological weakness of the pig is that, unless very hairy (as are the animals in the previously-mentioned Cotton Tiberius Calendar illustration), it needs shelter or it can get sunburnt, even to the extent of proving fatal. Ine 46 stresses the severity of felling of 'a tree that can shelter thirty swine' (*an treow þæt mæge xxx swina undergestandan*), which may attest to the value attached to mature trees as sources of shade, alongside their ability to providing greater quantities of fruits while withstanding the destructive grazing habits of pigs (Attenborough 1922, 50–1).

Another facet of woodland pasturing that might be considered problematic is the protection of domesticated herds from wild boar. It is hard to establish the extent to which the wild animals were responsible for the injury or death of stock; possibly dogs such as those shown in the Cotton Tiberius Calendar were used to guard against attacks. More relevant is the matter of insemination of domesticated sows by wild boars (eg Albarella 2006, 84). The minor place-name Eversheds in Ockley parish (*Everesheved* 1284) probably derives from OE *eofores-hēafod*, '(wild) boar's head', and thereby offers a possible reference to wild boar in the Surrey Weald, but there are doubts over the exclusive use of *eofor* in respect of wild swine (*PNS*, 276; Rackham 1986, 36). Given the positive view of the wild boar in Anglo-Saxon culture (Banham & Faith 2014, 97–8), interbreeding may very well have been seen as a benefit. Indeed, analysis of porcine remains from Dudley Castle suggests pigs and wild boar continued to interbreed as late as 1262–1321 (Hamilton & Thomas 2012, 250).

Interbred with wild boars or not, more than one authority has passed comment on the less-controllable nature of groups of pigs in comparison to sheep and cows, and their inability to travel long distances on the hoof (Trow-Smith 1957, 54; Grant 1988, 158). It can be deduced empirically that pigs pose considerable physical and temperamental problems to those wishing to drove them over significant distances outside woodland environments, but it must be emphasised that the animals undertaking such journeys were physically very different to most modern pigs. Smaller, leaner and lacking big bellies, they were better suited to travel long distances, as well as perhaps being easier to control when being driven (Banham & Faith 2014, 100; Grant 1988, 177). Any problems they did pose, it would seem, were not insuperable, to judge from documentary references of the later Middle Ages. Thomas of Walsingham illustrated the plague's devastation in the north of England in 1379, and alluded to the challenges of moving large numbers of pigs, by reporting that Scots raiders had been able to drive away herds of swine, apparently something no one had been able to do within living memory (Riley 1863, 410). It can only be supposed that pigs in the

Anglo-Saxon period were no harder to drove than their later medieval counterparts. A germane factor, one all too easily overlooked from the modern perspective, is the input of the skilled swineherd (cf Hooke 2012, 37). Just as ideas of animals little different in character from wild boars and so prone to run amok in wood pastures are almost certainly incorrect, so the capabilities of those tasked with their care and management should not be underestimated.

The evidence from Surrey and the wider Wealden region

Views of the early medieval Weald as a region clad in inhospitable, even impenetrable, primeval forest that went largely unsettled until the coming of the Normans have persisted in the popular imagination long after the evidence necessary to refute (or at least substantially modify) them was brought forward by historical geographers. The Weald was clearly a formidable feature of the medieval topography of south-east England, being characterised in the 893 annal of the Anglo-Saxon Chronicle as 'the great wood which we call Andred [...] a hundred-and-twenty miles long or longer from east to west, and thirty miles broad' (*þæs miclan wuda [...] þe þe Andred hatað; se wudu is eastlang 7 westlang hundtwelftiges mile lang oþþe lengra 7 þritiges mila brad*: Smith 1951, 42). The name Andred should be linked to *Anderitum*, the Saxon Shore fort at Pevensey at its southern limit, and Oosthuizen (2013, 41) suggests this denotes its post-Roman significance. But the sheer size of the Weald and the lack of important early medieval settlements deep within it are not the same as its being a deserted and little-utilised region.

The evidence relevant to reassessing the subject at hand and instituting a modified view of matters takes three main forms: place-names; textual references; and the physical remains of pigs recovered from excavations of medieval settlement sites. Each will be evaluated in turn. The place-names are mapped in figure 1, with the locations of historical and zooarchaeological relevance mapped in figure 2.

PLACE-NAMES

Place-names offer a near-ubiquitous source of information that can give valuable insight into the nature of landscape as well as hints at settlement and administrative patterns. The OE noun *denn* is used in this article to denote swine pastures in accordance with the seminal works of Witney and Everitt. It is found in Wealden place-names and in charters that mention landholdings in the Weald. Hooke (2010, 144) claims instances of *denn* in written sources are frequently shortenings of *denbera, -bēra*, but its toponymic uses have been linked to OE *denn*, 'a den, a wild beast's lair' (Smith 1956a, 129), in which case the longer forms could be explained as a literary development to make clearer the function of the places in question. *Denbera, -bēra*, and the less common *wealdbēra*, would seem to be cognate with the medieval Latin phrase *pascua porcorum* (or variations thereof), meaning 'pig or swine pastures', common in charter texts from a number of monastic archives (either surviving in the original or as later copies) – hence the reference in a charter of 788 to *in diuersis locis porcorum pastus id est uueald-baera* (S 129; Hooke 2010, 144).

Even if the common view were correct and the OE word and place-name element *denn* meant 'swine pasture', certain place-name formations indicate that the pasturing of swine was not the only activity that could be pursued in a Wealden denn. The Cowdens of Kent and Sussex are from OE *cū-denn*, 'cow denn', and other Kentish *denn* place-name formations reflect associations with horses (Hinksden, from OE *hengest*, 'stallion') and lambs (Lambden, from *lamb*: Smith 1956b, 130). In the case of Smarden in Kent, the first element of the place-name probably comes from OE *smeoru*, 'butter', which is highly unlikely to be a reference to a product from swine (Fox 2008, 356). Arguably, *denn* had a broader range of applications, which are accommodated by the sense of 'a woodland pasture, esp. for swine' (advanced by Smith 1956a, 129, and sustained by Gelling & Cole 2014, 267), but swine pasturing is to be preferred as the principal economic activity behind those places so-named unless another is revealed by the other element(s) in the place-name formation.

Fig 4 Stockenden Farm, Limpsfield, presumably on or close to the site of the Anglo-Saxon 'stony denn' from which it takes its name (Rob Briggs).

Place-names and early charters demonstrate OE *denn* was used of woodland pastures in Surrey. In place-name formations (table 1), there are examples of *denn* used both as a specific (first element) and generic (final element), albeit in much smaller numbers than in Kent, perhaps a reflection of limited Kentish linguistic-cultural influence beyond the south-easternmost extremities of the historic county (Darby 1963, 15–17). There are a greater number of identified instances of *denn* as a generic in Surrey, combined with specifics referring to the topographical character of the place (Stockenden (fig 4)), or its association with an individual (Puttenden) or group (Lullenden, Collendean – part of the latter was an outlier of Banstead: Turner 1997, 9).

Table 1 Old English *denn* in Surrey place-names

Place-name	Early form(s)	Other element	Reference(s)
Collendean (Horley parish)	*Covelindenne* 13th	Personal name **Cūfel(a)* + *-inga*	*PNS*, 293
Lullenden (Lingfield parish)	*Lollingedenne* 1296	Personal name **Lull(a)* + *-inga*	*PNS*, 329
Puttenden (Lingfield parish)	*Putindenne* 1198	Personal name **Puda*	*PNS*, 330
Stockenden (Limpsfield parish)	*Stanekyndenne* 13th	Adjective *stǣnigean*, 'stony'	*PNS*, 325
Deanhouse? (Newdigate parish)	*(atte) Denne* 1294? *the Denelonde* 1576	Original simplex	*PNS*, 84
Tandridge?	*Tenric* 963x75 (12th), *Tenrige* 1086	Noun *hrycg*, 'ridge'	*PNS*, 335

The two suggested instances of *denn* as a specific are problematic by comparison. To sustain its derivation from *denn*, the late-recorded Deanhouse Farm in Newdigate is dependent on an undocumented association with a William atte Denne recorded locally in 1294 (*PNS*, 84; see also Blair 1991, 52). Tandridge, despite its early forms uniformly beginning with *T-*, has been argued to contain *denn*, on the understanding that the initial consonant changed from *D* to *T* because the original place-name formation was **æt Dennhrycge*, 'at the denn-ridge' (*PNS*, 335; *CDEPN*, 599; the alternative explanation put forward by Kristensson (1999) is philologically sound, but in practical terms lacks credibility). Although it will be discussed in greater detail below, it is worth noting here that Tandridge is the only suggested Surrey place-name in *denn* that appears in a possible Anglo-Saxon-period written record as a woodland holding associated with an extra-Wealden estate centre (namely Beddington, in S 815).

Other terms encountered further west in the Surrey Weald may be largely synonymous with *denn*. OE *bēr* may have the significance 'woodland pasture' or even 'swine pasture' in place-name formations such as Barhatch and Barrihurst in Cranleigh and Beare Green in Capel parish (*PNS*, 230, 233, 267–8 respectively; also Hooke 2012, 37–8). Barfold Copse in Chiddingfold parish may contain the same element in compound with the more frequently-encountered *fald*, *falod*, 'a fold, a small enclosure for animals' (Smith 1956a, 164). Its spatial distribution is quite distinct from that of *denn* (discussed by Darby 1963, 14–17), which has encouraged it to be seen as a possible west Weald equivalent. Brandon wrote insightfully and evocatively of *fald* sites in the Low Weald of West Sussex, and to a lesser extent Surrey, noting their recurrent locations 'upon low swells of better drained soil' and positing that they arose from Early Anglo-Saxon herders 'staking off a pasture-ground and cattle (or swine) pen'; he seems to have viewed them as similar in some respects to *denn*-named places in East Sussex (Brandon 1978, 150–2). The terms used in combination with *fald* are varied, but none specifies an association with pigs. Names such as *Stotfold* (from OE *stōdfald*, 'a stud-fold, a horse enclosure') and *Retherfolde* (from *hryther*, 'cattle') indicate the presence of other forms of livestock at Surrey *faldas* (*PNS*, 359; Smith 1956b 157).

Darby (1963, 17) pondered the chronology of *fald* name coinages relative to ones in *denn* for the Weald as a whole, and contended that they may not be contemporaneous. Chiddingfold is one of a small number of Surrey *fald* place-names which, like Collendean and Lullenden, may derive from an *-ingas* group-name (*PNS*, 186–7). In West Sussex, *fald* occurs in a predominantly pastoral zone for which there is plentiful (if not always early) evidence for links with estate centres far to the south (Gardiner 1984). A number of studies have noted how the specifics of three *fald* place-names in this same area seem to recur in *-ingas* place-name formations to the south, and it has been suggested that these indicate early connections that did not endure into the period of the first written records (Gulley 1960, 460 and fig 52; Chatwin & Gardiner 2005, 34–6). However, the onomastic evidence is not as clear-cut as it first appears, and arguments for long-distance transhumance in the western Weald founded on it should be treated with caution.

HISTORY

For all its marginality and under-population in the earlier medieval centuries, there is a wealth of documentary testimony for swine and swine pasturing in the Weald, especially in Kent, where most denns attested in medieval sources have been identified on the ground (Witney 1976). It is justifiable to argue that this work, while undeniably important and of relevance across the county boundary in Surrey, does relatively little to obtain an understanding of precisely what a denn was or how it functioned. Careful consideration of some of the primary written evidence nonetheless helps in creating a basic framework for Wealden swine transhumance, given the material goes further than the meanings of place-names by providing information on *what* happened and *when* it took place, as well as *where*.

Recent philological work has suggested that many lists of swine pastures in supposedly early charters are later additions to original charter texts, or form parts of fabrications composed

much later than their purported date. The earliest authentic references to Wealden denns pertain to Kent and belong to the middle decades of the 8th century. Thus, an original or near-contemporary copy of a diploma of 785 names three swine pastures (*porcos alendos*) located 'in the forest which is called Andred' (*in saltu qui dicitur Andred*: S 123; Brooks & Kelly 2013, 399-404). As with the OE place-name data, Anglo-Saxon charters give good reason for believing most denns were used primarily for the pasturing of pigs, but a minority would seem to have been primarily associated with other types of livestock. This is brought out by a charter of 822 granting a small estate in the Otford area that names a trio of 'pastures and grazings for pigs, and [for] plough-beasts or goats' in the Weald (*in Ondrede pastum et pascua porcorum. et armentum seu caprorum*); one has been convincingly identified as Ewehurst in Speldhurst parish (S 186; Hooke 2010, 145; Brooks & Kelly 2013, 565).

Some of the later additions to Kentish charters conversely provide the evidence most strongly suggestive of a pastoral system of significantly earlier origin. Key here is Kentish and West Saxon OE dialect word *weald*, 'forest', used in conjunction with more names than that of the Weald itself, and translated here following the meaning ascribed to it by place-name scholars, in acknowledgement that the word carried a particular legal meaning in the medieval period (Gelling & Cole 2014, 253–6). A list of *pascua porcorum* appended at a later stage to a charter text dated 11 July 724 includes ones in *Limenwearawalde*, which is translated as 'the forest of the *Limen* people', and *Weoweraweealde*, 'the forest of the people of Wye' (S 1180; Kelly 1995, 163–5). Similarly, a fabricated charter produced using early charter material makes reference to 'the denn-pastures in the forest of the *Limen* people, and in the forest of the people of Canterbury' (*ðæm denbærum in Limenwero wealdo. 7 in Burhwaro uualdo*: S 125; Brooks & Kelly 2013, 405–8). Such references clearly indicate the use of these forest tracts for denns, but also intimate that the Weald was divided between a number of early sub- or pre-kingdom level polities (Hooke 1998, 144; Brooks 1989, 69–73; cf Oosthuizen 2013, 158).

Ascertaining how far back beyond the horizon of documentary testimony the denn-based pasturing economy goes is not straightforward. The drove-ways, apparently connecting the denns to parent estates, have been traced from roads and paths across the Kent landscape (Witney 1976; Everitt 1986, *passim*). Stuart Brookes has recently revived the efforts of Witney and Everitt to investigate the antiquity of droves in Kent, often recorded in the 12th and 13th centuries but almost certainly of much older origin, and 'their role within the economic web of commons and settlement from the Roman period on' (Brookes 2007, 144). Using sophisticated spatial analytical methods, he observes how 'proportionately few burials' of Early Anglo-Saxon date were positioned close to routes linking northern Kent with the Weald, which were formed/operational in the 6th century, but explains this as an index of the predominant usage of such lines of communication by lower-status wayfarers (*ibid*, 150–1).

Turning back to Surrey, there are two types of documentary references to be considered: those concerning pigs, and those concerning detached woods or pastures. It is notable that on both counts the evidence is much later than the posited origin of the practice of transhumance of swine and commences over a century after the earliest relevant records from Kent. The earliest mention of Surrey swine occurs in the will of Ealdorman Ælfred, ascribed to the years 871x89 (S 1508; Brooks & Kelly 2013, 809–18). The will disposes of at least 2400 pigs, divided between his various estates in Surrey and Kent (table 2). That many of these beasts were pastured in Surrey is suggested by the mention of 100 swine apiece been given to Ælfred's son with 2 hides at Waddington and 1 at Gatton, and to his kinsman Beorhtsige with a single hide of bookland at Linkfield in Reigate parish.

It is interesting to note the Weald-edge locations of Linkfield and Gatton (but also that the latter derives its name from OE *gātatūn*, 'goats' farm': *PNS*, 291). The one truly Wealden Surrey estate named in the will, Lingfield, has no such number of pigs specified. It is tempting to read this as a hint that swine were not permanently grazed there, in contrast to the situation a few miles north at the foot of the Downs, yet the formulation of the

Table 2 Bequests of pigs in the will of Ealdorman Ælfred (871x88)

Number	Recipient	Estates
2000	Wærburh (wife), Ealhthryth (daughter)	Sanderstead and Selsdon (32 hides), Westerham (Kent, 20 hides), Clapham (30 hides), Lingfield (6 hides), Horsley (10 hides), Nettlestead (Kent, 6 hides)
100	Æthelwald (son)	Waddington (2 hides), Gatton (1 hide)
100	Beorhtsige (kinsman)	Linkfield (1 hide)
100	Christ Church, Canterbury	–
100	Chertsey Abbey	–
The surplus	Major churches in Surrey and Kent	–

charter permits a variety of interpretations, not all of which involve transhumant grazing practices. Blair (1991, 17, 31) posited some of Ælfred's estates were formerly parts of a vast archiepiscopal estate centred on Croydon, a place which he is known to have leased for his lifetime from Archbishop Æthelred (S 1202; Brooks & Kelly 2013, 805–8). It is possible the 6 hides at Lingfield (and maybe the 2 hides at Langhurst in neighbouring Limpsfield with which they were allegedly paired in the third quarter of the 10th century: see Blair 1991, 51) were the site of its Wealden pastures.

The vast numbers of pigs Ealdorman Ælfred owned and wished to bequeath can be contrasted with the situation at Beddington, as documented in a letter written by Bishop Denewulf of Winchester to the new King Edward between the years 899 and 908 (S 1444; translated by Rumble 2001, 236–7). This paints a detailed picture of the state of Beddington in the wake of being 'stripped bare by heathen men' followed by a harsh winter. Among the possessions of the estate were '114 full-grown pigs' (*hund ændlæftig ealdra swina*), plus an unspecified number of pigs and sheep 'which the herdsmen [*hirdas*] have a right to' – the only detail provided here is that twenty of these animals were full grown (Rumble 2001, 237). For an estate quantified as 70 hides in extent, these numbers are remarkably close to the size of the herds of swine attributed to such places as Linkfield and Gatton in Ælfred's will. It is possible they were not Weald-pastured beasts, but when Beddington is next mentioned in a charter of 963x75 (S 815, a mid-12th century copying of an earlier reworking of assorted texts; Rumble 1976, 180 n 25), it had 'woods' (*silua*) of unspecified character at Tandridge and Lake in the Weald (as well as *Cysledun*, which may be equivalent to Chessington to the north of the Downs).

The two earliest items of textual evidence presented above demonstrate that pigs were farmed in large numbers in 9th century Surrey, but make no explicit mention that this took place either seasonally or perennially in its Wealden portions. The earliest surviving manuscript attesting to woodland holdings in the Surrey Weald is an original single-sheet charter of the year 947, recording the grant of Merstham by King Eadred to a *minister*, Oswig (S 528; Brooks & Kelly 2013, 915–21). It incorporates an OE estate boundary description followed by a separate clause listing 'the denns belonging to Merstham': *lace* (Lake), *pedan hrycg* (Petridgewood), and a hide at *þunres feld* (Thunderfield: see Rumble 1971, 7; Ellaby 2004; Brooks & Kelly 2013, 921). Another 10th century charter, this time reproduced in a faulty fashion by an 11th century scribe, concerns the forfeiture of 1½ hides at *Cealua dune*, usually identified as Chaldon (S 753; Northfield 2006, 145). There are signs the final two names in the vernacular section of the charter, *cilling hop* and *sænget hyrst*, should be understood as being distinct from the preceding boundary points, and it has been suggested these were Wealden outliers (Northfield 2006, 150; neither has been located on the ground).

Similar, though more suspect, documentary evidence for detached Anglo-Saxon Wealden pastures is found in the mid-13th century cartulary of Chertsey Abbey. It preserves a number of obviously confected charter texts purporting to pre-date the Norman Conquest, most with roots in genuine lost muniments, which contain several references to outlying holdings. Sometimes they specify pig pastures, as in the cases of Sutton, at Thunderfield (S 420, 752),

and Cheam, located 'in the Weald' (*in þane Wald* – S 1181, *on þene Wold* - S 752). Blair links the latter with Duxhurst in Horley on the basis of late 13th century records, but Ellaby proposes it to have been an adjacent outlier of Charlwood parish (Blair 1991, 52; Ellaby 2004, 89). More often the wording is ambiguous. Coulsdon (if identical to *Curedesdone* of S 1181 and *Cudredesdune* of S 752; Kelly 2015, 64) had pastures (*pascuis*), which Rumble cautiously posited were more likely to be downland than Wealden, although it did have outlying portions in the Weald (Rumble 1976, 174; Turner 1997, 9). The same might be suggested for the appurtenances of Epsom (noted in S 752), yet Merstham is credited in the same charter with unnamed 'appendages' (*appendiciis*) and the status of its outlying portions as Wealden denns is independently and reliably attested (hence S 528).

The Domesday Book entries for Surrey are largely unhelpful when it comes to discerning the geography and ownership of Wealden denns. The use of the term denn, unique among the Surrey folios, in the entry for the royal manor of Ewell (*unam denam siluæ*, translated as 'one woodland pig pasture' by Morris 1975, 1, 9) may be misleading. Although it had Wealden holdings at Shellwood and the lost *Fifhide*, the Domesday denn was more likely to be Kingswood on the North Downs plateau (Rumble 1976, 181 n 26). Otherwise, Domesday offers few useful details beyond references to renders of pigs from pannage (*de pasnagio*; *silua*, 'woodland', is sometimes used in conjunction with, or as an alternative to, the term) and herbage (*de herbagio*). On manors along the northern fringe of the Surrey Weald, when pannage and herbage figures are given in the same entry, the former is always higher. The figures of '140 pigs from pannage; from herbage, 43 pigs' in the entry for *Cherchefelle* (Reigate) are typical (Morris 1975, 1, 7), and may be read as showing the greater importance of woodland pasturing on this part-Wealden manor and others like it.

From the evidence of later medieval sources, other east Surrey examples of manors/parishes with Wealden outliers may be added – for example, Banstead, Walton on the Hill and Woodmansterne (Blair 1991, 52). Two lost minor place-names with equivalent significance may be *Cateringforde* and *Cateringherst* – apparently to be located in the vicinity of Caterfield Bridge on the border of Crowhurst and Oxted parishes – recorded in 1396, possibly abbreviations of the ford and *hyrst*, 'wooded hill', of the people of Caterham (*PNS*, 333).

One difficulty is trying to establish how alike these east Surrey holdings were to those in the Weald further west in the county. An apposite example of the latter is Wildwood, a detached member of Albury manor and parish (English & Turner 2004, 108–9). Its late medieval character is revealed by a 1327 manorial survey of Albury, which included '40 acres of oak wood not for pasture' (*XL acr boscis querci ni cujus pastura*). This might be read as inferring the landholding had formerly been wood pasture, which would fit with the interpretation of two continuous and approximately parallel boundaries defining a block of grazing land that later became Wildwood Manor. It cannot be determined whether Wildwood functioned in the same way as a *fald* and/or *denn*, as no place-name containing either term is known from inside the area enclosed by these boundaries (although the historic centre of Alfold, 'the old fold', lay just to the west: *PNS*, 222). English and Turner (2004, 116) contended 'the *falods* of the Blackheath Hundred were used for grazing, [but] this does not seem to have involved the long-distance transhumance associated with the Weald of Kent and East Surrey'. However, the distance between Albury and Wildwood is broadly similar to that between Merstham and its denns recorded in 947, so movement of livestock into and out of the Weald over distances of several miles seems probable.

At a county level, where the pre-1066 charter evidence is sufficiently detailed, it appears detached holdings were a standard attribute of later Anglo-Saxon estates in Surrey and not a phenomenon limited to the Weald (table 3). Detached woodlands are mentioned as possessions of the north Surrey estates of Battersea, several miles distant at Penge as noted earlier (S 645) and Pyrford, close by at Sidewood (S 621; *PNS*, 130). Domesday Book likewise reveals links between the main portions of estates and external wood pastures, even if they were not especially distant, such as Woking church manor, which 'had and has a customary

Table 3 Surrey estates with recorded outliers in Anglo-Saxon charters

Estate	Outlier(s)	Wealden?	Charter
Battersea	Wood (*se wude*) at Penge	No	S 645
Beddington	Woods (*silua*) at Lake, Tandridge, and *Cysledun* (Chessington?)	Yes (Lake, Tandridge), No (if Chessington)	S 815
Chaldon	Two (*twa*) at *cilling hop* and *sænget hyrst*	Yes?	S 753
Cheam	Pig pastures (*porcorum pascuis*) in the Weald	Yes	S 752, 1181
Chertsey and Thorpe	Eight islands (*ygetta*) and seven weir-pastures (*.vii. werbaere*)	No	S 1165
Claygate	Third tree in Kingswood in Ditton (*þriddan treowwe on Kyngeswude on Ditune*)	No	S 1137
Coulsdon?	Pastures (*pascuis*)	Unclear	S 752, 1181
Epsom	Appurtenances (*omnibus ad se rite pertinentibus*)	Unclear	S 752
Esher	Six weir-pastures (*six wærbære*)	No	S 911
Farnham	10 hides at Bentley in Hampshire (*æt Beonæt in Hamtunscire*)	No	S 382
Merstham	Denns (*þa den*) at Lake, Petridge and north of Thunderfield	Yes	S 528, 752
Merton and/or Dulwich	Part of a briny piece of land next to the Thames (*partem aliquam salsuginem terram juxta flumen quod vocatur Temese*)	No	S 747
Pyrford	Extra wood(s) = Sidewood (*Siþ wuda*)	No	S 621
Sutton	Pig pastures (*cubilibus pascuis*)/woods (*siluatica*) in Thunderfield (*in Ðunresfelda*)	Yes	S 420, 752
Thames Ditton	The wood (*se wude*)	No	S 847, 911

right [*consuetudinem*] in the King's woodland at Woking [...] the lord of this village is able to have 120 pigs without pasture dues [*sine pasnagio*] in that woodland' (Morris 1975, 4, 1).

Other Anglo-Saxon charters reveal certain Surrey estates had non-wooded outliers, the primary functions of which almost certainly were also as pastoral resources. Esher and Chertsey with Thorpe each had several Thames-side 'weir-pastures' (OE *werbǣre*) in the 11th century (S 911 and S 1165 respectively: Kelly 2015, 108, wrongly interprets the term as signifying fish-weirs). The one exception to this may be the area of briny land by the same river with which Merton with Dulwich were associated in 967, although even here grazing must be countenanced as a likely land use (S 747; Kelly 2012, 493).

While the existence of defined landholdings used for grazing separate from the main estate is made clear by such records, the mechanics of how and when they were grazed is not. Fortunately, some medieval texts from Kent go further than the 1204 fine pertaining to Battersea and Penge discussed above by describing the organisation of the movement of swine to or from distant woodland pastures, and suggest that it was seasonal work of fairly frequent, if not regular, occurrence. So, in 1185, four tenants of Temple Ewell in the Dour valley near Dover are recorded as having responsibility for driving swine to and from the Weald, a distance of at least 20 miles one way (Gulley 1960, 411, 459 fn 1). Very similar arrangements were in force a century later at Maidstone, where certain tenants had to collect five men each to assist in driving the Archbishop of Canterbury's pigs to mast, while cottars at Boughton-under-Blean, Hernhill, Graveney and Charing were charged with driving the lord's pigs to mast in Kent but not beyond (Du Boulay 1961, 80). This would be consistent with the handful of Surrey Domesday entries noting holdings in Kent, although in these cases Sussex may be the 'beyond'. Some of the mast-grounds in question would have been in the Weald (for those of Charing, see Everitt 1986, 147), others in the Blean Forest. In all these instances, the mention of mast indicates the movement was for pasturing, as opposed to rendering or marketing. Explicitly or implicitly, these references also demonstrate the pig herds began their journeys to the mast pastures at locations outside the Weald (or Blean). It can, of course, be argued that 13th century custumals are of doubtful validity for understanding Anglo-Saxon practices, but there is a dearth of persuasive evidence for great changes in pig husbandry prior to the late medieval period (Ervynck *et al* 2007, 173;

Hamilton & Thomas 2012), from which it would follow that the activities being described were not recent innovations.

ZOOARCHAEOLOGY

The assemblages of skeletal remains from excavated settlement sites are a neglected source of quantitative information on the importance of pigs in the pastoral economy of the Wealden region. Zooarchaeological syntheses of faunal assemblages from Anglo-Saxon-period sites generally cite pigs as the third most common domesticate after cattle and sheep (Albarella 2006, 73; Banham & Faith 2014, 99). Until recent years, such studies have factored in little or no data from sites with demonstrable Wealden links (eg Hull & O' Connell 2011), but recent years have seen the recovery of two large, well-understood Anglo-Saxon-period assemblages from Kent and Sussex that provide perspectives arguably more directly relevant to Surrey. Such material and its scientific analysis cannot prove the transhumance of swine, but can show whether pigs were being farmed and consumed in settlements at different points in time, and how important they were as a species relative to other domesticates and wild fauna.

Presently there is a paucity of faunal data from sites in Surrey with Wealden associations, not least because acidic soil conditions make for the poor preservation of bone. In medieval contexts, pig bone fragments are the second most numerous of the domesticates recovered from the later 12th century levelling layer at Reigate Old Vicarage (Poulton 1986, table 24), and third at the 13th–14th century sub-manorial site of Alsted in Merstham parish (Noddle 1976, 64–5). The only earlier Anglo-Saxon site on the edge of the Surrey Weald with relevant published evidence is Battlebridge Lane, Merstham, where one of two positively identifiable Early to Middle Anglo-Saxon-period bones recovered was that of a pig, found in a probable 6th century context (Saunders & Weaver 2012, 20 table 2.4). As highlighted above, Merstham is responsible for the earliest piece of direct documentary evidence for Wealden pastures in Surrey, and Reigate likewise has a recorded link with Wealden pastures (Ellaby 2004, 74). North of the Downs, pig bones rank alongside those of cattle as one of the two best-represented species in the assemblage of 30 bones from the fill of an Early Anglo-Saxon *grubenhaus* at Tramway Path, Mitcham (Cowie & Blackmore 2008, 35), yet are only the third best represented in the very small sample from 9th to 12th century contexts at nearby Mitcham Vicarage (Ford 2004, 102 table 2). Mitcham is not recorded as having outlying Wealden woods, although it is hard to adjudge how significant this might be given the imperfect state of knowledge about the tenurial geography of early medieval Surrey.

In the current absence of a substantial corpus of faunal data giving firm indications about the levels of importance of pigs in the pastoral economies of Weald-linked places in Surrey, the large assemblages from the high-status settlements at Lyminge in Kent and Bishopstone in Sussex must assume greater importance. Important insights into Early to Middle Anglo-Saxon pig production and consumption in Kent are available from interim reports of the Lyminge excavations (Baker 2012; Thomas 2013, 125, 135 fig 13, 137, 140). Unfortunately, there are no published animal bone data from the Late Anglo-Saxon period from Lyminge that might permit comparison with the bulk of the historical testimony from Kent and Surrey, but this is to be found in the published analysis of 8th–11th century osteological material from Bishopstone (Poole 2010).

Specialist analysis of the combined faunal assemblage from Lyminge, dated to the period between the late 5th and late 9th centuries (deriving from an elite settlement succeeded by a royal monastic foundation in the late 7th century), has shown pigs were the most abundant of the main domesticates in 5th–7th century contexts, but are less well represented in the 8th and 9th centuries (Baker 2012, 6, 10, 18 table 2; Thomas 2013, 125, 135 fig 13). The prominence of pigs in the pre-monastic phase has been connected to high-status feasting, considered an enduring facet of Anglo-Saxon elite culture (Thomas 2013, 125; Hamilton & Thomas 2012, 234). The provenance of this data from Lyminge is especially significant given the onomastic and economic implications of the aforementioned *Limenwearawalde*,

related to a territory of which Lyminge seems to have been the political and religious centre (Thomas 2013). Pigs are also the best-represented of the domesticates in smaller assemblages of bone from two Early Anglo-Saxon settlement sites excavated at Keston and St Mary's Cray in north-west Kent (Hart 1984, 214; Cowie & Blackmore 2008, 11–16), which suggests the Lyminge evidence should be understood in a broader Kentish context.

Bishopstone is another high-status site with both monastic and non-monastic phases that has yielded a large faunal assemblage. Here, pigs have been identified as the second most abundant domesticated species, representing around 30% of Number of Identified Specimens (NISP) (Poole 2010, 155). Bishopstone has no early-attested link with a Wealden denn, although a later medieval custumal refers to pigs having 'to be driven to the wood' at Heathfield (Peckham 1925, 93). The percentage still compares favourably to the situation at the lower-status 8th and 9th century settlement on the Lower Greensand at Friars Oak, Hassocks, where pigs are only the third best represented of the domesticates in the animal bone data, accounting for *c* 10.5% of relevant specimens (data from Butler 2000, 42 table 9). Differences in pastoral economies at settlement or estate level lie behind such variations, but at the same time there may be influence from the social status of the inhabitants and/ or holders of such places. No Surrey denn possesses a direct pre-Domesday record of association with a known minster in the county, but some were members of estates in the possession of important ecclesiastical institutions, so analogies drawn between high-status sites such as Lyminge and Bishopstone may be sustainable, at least in part.

It has been suggested that there was pre-Roman transhumant grazing of wood pastures in the Surrey Weald, and a more recent study contended there is no convincing reason for accepting a cessation during the Romano-British period (Hanworth 1987, 161; Bird 2004, 86). Once more, the numbers of identified pig bones reported from sites are tiny. The possible Roman villa at Cranleigh yielded three identifiable pig bones, making the species a minority element of the overall assemblage (Hayman 2008, 282 table 10). Single specimens have been noted at Battlebridge Lane, Merstham, in an Early to Middle Iron Age context (Saunders & Weaver 2012, 20 table 2.4), an early Roman settlement at Horley (Driver 2009), and the early 3rd century phase of the Roman villa site at Rapsley (Hanworth 1968, 69). More plentiful evidence comes from two non-Wealden locations that have later-recorded links with pastures in the forest. At the Roman villa at Beddington, pig bones are present in all main phases, but never rise above 7% NISP, lagging far behind ox/cattle and sheep/goat (or sheep-sized) taxa (Pipe & Locker 2005). A study of the faunal assemblage from St Mary's churchyard, Ewell, showed pigs account for 10% of domesticate bones, again well behind sheep and cattle, and below average for Roman-era assemblages (Jones 2008, 17).

Zooarchaeological evidence, be it Anglo-Saxon or earlier, therefore does little to support the idea pigs were a major element of the pastoral economy of pre-historical and proto-historical Surrey, but is clearly so fundamentally deficient in quantity that it cannot be trusted to provide a comprehensive picture. This impression is moderated when the physical evidence of early medieval pigs is set alongside the contemporary historical and toponymic testimony. There is no doubt that pigs were grazed in the Weald in the Anglo-Saxon period and later, but in what numbers is unclear, as is the answer to the crucial question: was this as part of a transhumant pasturing regime or one that was less extensive and not seasonal?

Towards a model of extensive pig husbandry in the Surrey Weald

If there is a primary shortcoming of previous landscape archaeological studies of medieval pig husbandry in Wealden south-east England, it would be that focus for the most part has been on the time the herds spent grazing in (and by extension getting to and from) the denns, when this accounted for one-third of the agricultural year at most. The remaining 8–10 months have received practically no discussion (as was noted several decades ago by Trow-Smith 1957, 53), but are worth appraising for the light they may shine on the wider husbandry process. To this end, a model of the annual cycle of pig farming involving transhumance in

Weald-linked areas of Anglo-Saxon Surrey (with the potential to be applied elsewhere) will be proposed (fig 5), and explained using examples from the county and beyond. As a model, it is a simplification and generalisation of reality, and it is to be expected that particular elements would have varied from place to place, and may have evolved in different ways over time.

The existence of remote forest pastures and droves in the Weald, while each essential for the transhuming of livestock, do not by themselves *prove* transhumance; at best they *imply* it. The balance can be shifted from implication towards proof by convincingly demonstrating that they were elements of a pastoral economy involving customary annual movements linked to seasonal grazing practices. In some regards, continuous occupation of the forest swine pastures, as found later in the medieval period, might be seen as more consistent with the sparse evidence (Gulley 1960, 458). Du Boulay, for example, cited a group of tenants at Westgate, Canterbury, who were organised into a quarterly roster to guard the demesne pigs 'in the pannage if they were driven there to fatten' (Du Boulay 1961,
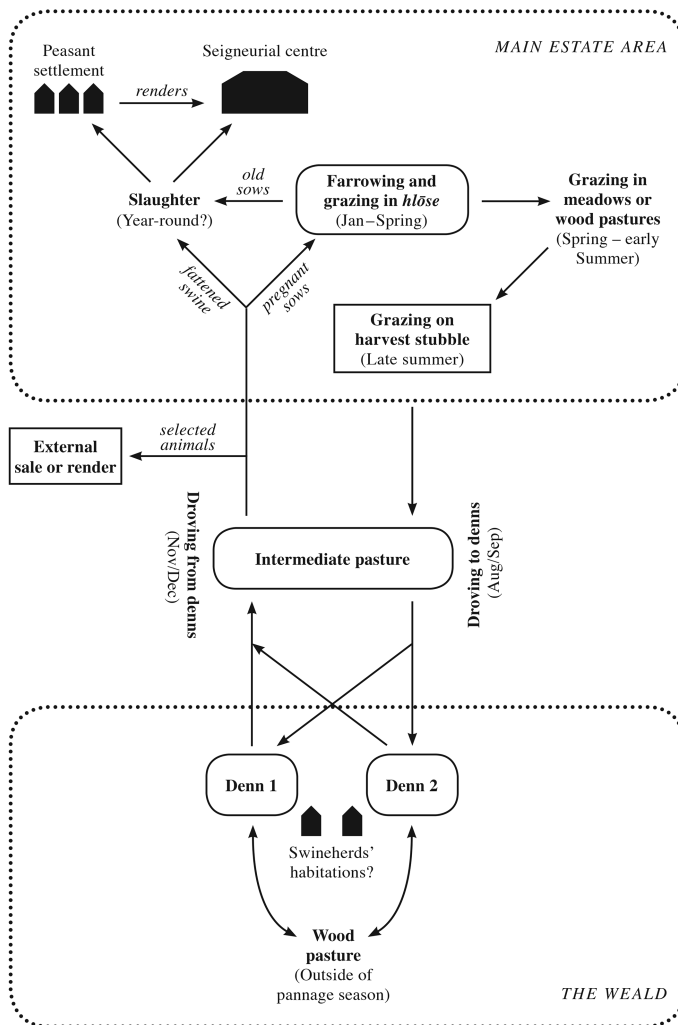
Fig 5 A model of early medieval transhumant pig husbandry. It is designed to reflect the topography and nomenclature of the Weald, but could be applied to estates elsewhere that had detached woodland pastures.

81). He understandably concluded that the year-round nature of this roster 'envisages the permanent custody of pigs in the woods', but not necessarily the same woods, or a consistent number of animals.

The new model counters such scepticism by providing a holistic account of pig husbandry rooted in careful contemplation of the activities involved, and when and where these took place. Some of the key components of this model have been mentioned already: the length of the pannage season; the location of Wealden pastures relative to the estate centre, and the primary function of pannaging – to fatten pigs on an abundant seasonal source of fodder that might otherwise go to waste from an agricultural perspective. It must be assumed pigs put on a significant amount of muscle and fat mass over the course of the pannage season, perhaps amplified by careful management on the part of swineherds – later medieval illustrations often show men using staffs or clubs to beat acorns from the branches of oak trees for the pigs to eat.

Droving would have been a necessary part of the management of detached woodland pastures. Rarely, if ever, were they centres of consumption or commerce. Consequently, before the invention of mechanised transport and refrigeration, stock had always to be moved alive and under its own traction for render or marketing away from the pasture grounds. The journeys involved could be of great length: in excess of 40 miles in the case of the 600 swine driven across the Weald from Tonbridge in Kent to Shoreham-by-Sea in Sussex in the period 1189–99 (Gulley 1960, 411). More specific evidence for the practicalities of the long-distance movement of pig herds comes from the custumal of Ferring in Sussex and its Wealden outlier of Fure, dating from the middle of the 14th century (perhaps shortly before the Black Death), which states it was the duty of Robert de la Wode to:

> fetch pigs [from Fure] and drive them to Chichester, Aldingbourne, Ferring, Amberley or Dorking at his own cost, and from Dorking to London at the lord's cost, and then shall have the issues of the second best pig when the larder wants pigs. (after Peckham 1925, 77)

Dorking may have had particular importance as a centre of pig droving, or simply may have been a convenient intermediate point on the way to London (*c* 25 miles away); the medieval incarnation of Stane Street was an arterial route either way (cf Chatwin & Gardiner 2005, 35 fig 3). The above pieces of medieval testimony are without earlier equivalent, and of course pertain to one-way journeys made ahead of the sale and/or slaughter of the beasts. Nonetheless, it seems reasonable to read into this that journeys of considerable length could have been made at the beginning and end of the pannage season. In Surrey, the 15 miles between Sutton and Thunderfield was perhaps the upper limit so far as recorded estate centre and denn pairings are concerned, but in Kent and Sussex the distances involved were sometimes much greater – over 40 miles in the case of Tenterden, 'the denn of the men of Thanet' (Everitt 1986, 123–4). Moreover, it is safe to assume pig droving would not have been substantially easier in the Anglo-Saxon period than at the time the Ferring custumal was compiled. This may hint at the slower uptake of 'improved' breeding strategies in the late medieval Weald compared with other parts of England and continental Europe.

It is hard to estimate the time it took to drive herds to and from the Weald. Pigs may have lost some of their peak post-pannage body mass as a result of this exertion (cf Gulley 1960, 458), but it would seem that this was not so severe as to discourage such journeys from being made. The negative effects may have been largely mitigated by grazing on intermediate pastures along the way. Witney clearly recognised the immense difficulty of droving pigs over long distances in a single journey, hypothesising a system whereby they were moved to and from the Weald in stages, being rested and grazed in small demesne pastures en route (Witney 1976, 85). Repeated movement between the same places for the same purposes would have generated droves, and he worked out a number of hypothetical pig-droving routes via chains of denns in Kent (Witney 1976, 95–8). An analogous situation

has been identified in relation to Ambersham in Sussex, an estate gifted to the church at East Meon in 963, and subsequently associated with the parish of Steep in Hampshire. Roughly midway between the two was a second, smaller, outlier of Steep parish, historically an area of common grazing land that Gardiner interpreted as a 'staging point' for livestock being moved between Ambersham and the estate/parish centre (S 718; Gardiner 1984, 81–2).

There is less evidence in east Surrey of estates possessing chains of denns that would allow their herds of swine to penetrate 'ever deeper into the forest, and back again' (Witney 1976, 86). While the early historical testimony so far as it goes indicates multiple denns were the norm, Surrey estates seem to have had fewer Wealden outliers than their Kent or Sussex counterparts, with the three denns of Merstham being the upper limit – a fraction of the eighteen attributed to *et Derantune*, probably Durrington in Sussex, in a diploma of 934 (Gulley 1960, 452; S 425; Brooks & Kelly 2013, 866–75) However, their non-contiguous, north–south distribution should be noted, for it may reflect a complex pattern of livestock management during the pannage season, or over a greater breadth of time (cf Gulley 1960, 453).

The late Peter Gray showed evidence for exceptionally wide green lanes, possibly amounting to narrow 'swathes of forest' or common land, that once ran north–south along the boundaries of Nutfield and Burstow in late medieval or early post-medieval times (Gray 1981; cf Finch 1995). These are far narrower than the 'swathes' identified by Witney in Kent, and so may indicate the routes by which access was obtained to areas of common pasture rather than being pastures in their own right. On the other hand, the long, narrow shape of historic Tandridge parish is similar to Ambersham, and likewise to Fure and Marlpost in Sussex (outliers of Ferring and West Tarring respectively: Chatwin & Gardiner 2005, 40 fig 7 and 42 fig 8). Each might be explained in terms of being deliberately 'designed' to facilitate the north–south movement of swine between different pastures within the landholding (fig 6), a fact that becomes more interesting in view of the recorded status of Tandridge as a detached woodland of Beddington. But Ambersham has been seen as a locally-typical strip estate, taking in both arable and pastoral land, which became the detached woodland of an extra-Wealden manor, and the situation of Tandridge sustains the same interpretation (Gardiner 1984, 81–2).

It is proposed here that pig husbandry involving the grazing of herds in the Weald did not demand the removal of all pigs from the wood pastures outside the pannage period. Rather, it formed part of a more complex system in which most beasts were driven back in late autumn or early winter while the remainder stayed in the forest. There was no point in males that had reached sexual maturity joining the returning herd at the end of the pannage season if they were not intended for slaughter or sale, and the denns in which they were kept could sustain continuous grazing, perhaps through recourse to alternative food sources such as holly (fig 7; Hooke 2012, 35). However, more likely is their relocation to nearby wood pastures reserved for post-pannage use. An oblique attestation of this practice may be found by comparing the OE Riddle 40 of the Exeter Book, featuring 'a grunting boar, a dark rooting creature that lived pleasantly in the beech-wood' (*bearg bellende, þe on bocwuda/won wrotende wynnum lifde*), with its Latin precursor, in which fattened (pregnant?) sows 'carry their bodies back again from the [...] beech trees' to the delight of the swineherds (*iterum referunt [...] corpora fagis*: Banham & Faith 2014, 97; Glorie 1968, 535; Cavell 2015).

Pannage regimes, transhumant or otherwise, were not the only forms of medieval pig husbandry practised; even in the Anglo-Saxon period, there is evidence of intensive, stall-based pig production (Albarella 2006, 79, 86). Wood pasturing declined fastest in regions with the greatest reductions in woodland area (Hamilton & Thomas 2012, 235). If the seasonal pasturing of herds in woods is accepted as being a widespread and persistent phenomenon in Surrey – and the bulk of the evidence points towards this – then stall-based pig rearing can be considered a minority method, at least outside urban areas. A stock of swine, kept under farmyard conditions at the estate centre or peasant farm awaiting slaughter would

Fig 6 Blindley Heath, an area of damp common grazing land divided between Tandridge and Godstone parishes. Recent environmental work has opened up areas of grassland previously covered by young oak woodland, perhaps restoring it to something closer to its medieval state. Its name may go back to OE *Lindlēah*, 'lime open woodland or clearing' (*PNS*, 317), which would demonstrate the presence in the Surrey Weald of tree species not useful as a source of food during the pannage season (Rob Briggs).

Fig 7 Itchingwood Common, Limpsfield. In 1312 it was named as *Echenewode* (*PNS*, 324), literally 'oaken wood', a still-accurate reflection of the predominant tree species, albeit with holly dominant at the shrub layer (Rob Briggs).

therefore not have been needed other than for a few days or weeks before they could be killed following their journey from the Weald. At Slindon in Sussex, the Archbishop of Canterbury was said to sometimes 'make a larder', which seems to fit this process (Du Boulay 1961, 81). Thirteenth century written evidence is cited by Albarella in support of his belief that most pigs were slaughtered in early winter (or late autumn), 'anticipating a shortage of natural resources to sustain them' post-pannaging (Albarella 2006, 84). The slaughter of a pig by means of an axe is depicted and attributed to the month of November in a 12th century English calendar (Astill & Grant 1988, 221 fig 10.2).

Pigs grow quickly so can be slaughtered for their meat less than 12 months after birth, but it is clear many early medieval animals were kept alive for longer. Albarella, using zooarchaeological data to reject earlier assertions that Anglo-Saxon pigs were slow-growing and generally were not killed until their third year, notes the best pork and bacon came from animals slaughtered 'when rising two' (Albarella 2006, 83). This dovetails with the 'major peak' in the Bishopstone assemblage, equivalent to 40% of ageable pig bones, representing animals slaughtered when aged 14–21 months (Poole 2010, 146). At Bishopstone, pigs seldom survived to 36 months, but analyses of the equivalent material from the excavated high-status Middle to Late Anglo-Saxon settlements at Wicken Bonhunt in Essex and Flixborough in Lincolnshire have identified 'highly structured' culling practices involving slaughter of swine at 20 and 32 months, showing some animals lived into a third year (Hamerow 2012, 161). It is to be hoped that publication of the Lyminge faunal data will confirm or disprove whether a second or even a third pannage season of mature animals was a feature of Anglo-Saxon settlements with Wealden connections.

A very strong case can be made for the pannage season having a second important purpose: mating. The retention of populations of male swine year-round in the Weald has been hypothesised above. Given the age profiles of the best understood Anglo-Saxon-period faunal assemblages, it must be assumed most boars would have only a single breeding season before leaving the Weald for slaughter (others may have survived for longer before being eaten by the swineherds who looked after them). Pregnant sows would have returned to the estate centre to farrow (a period of slaughter in the late spring/early summer might be postulated for females deemed to have served their purpose). At Lyminge, 'foetal/neonatal and very juvenile' pig remains have been interpreted as indicating the animals were born and raised in the vicinity of the settlement (Baker 2012, 8; Hamerow 2012, 160, notes the bones of juvenile animals do not survive as well as mature ones).

Overwintering pigs close to settlements would have presented problems: it would, for example, have been labour intensive and have occupied space that could be used for other agricultural activities. In the absence of alternative means of feeding large herds outside the pannage season, it must be accepted that most pigs returned from the Weald, either pregnant or destined for slaughter, so means of keeping these beasts (be it for days, weeks, or months) without ill-effect on the wider agricultural economy were essential. This would most probably take the form of other areas of wood or grass pasture, waste ground or enclosed spaces where they could be fed on domestic waste (cf Grant 1988, 159; Hamilton & Thomas 2012, 235). Late as it is, the 1263 record of the right of common pasturing of pigs held by the rectors of Merstham, 'in a certain wood [...] from the feast of St. Martin [11 November, noted earlier as the end of the pannage season at Penge and in Kent] up to Hockday [second Tuesday after Easter Day]' (*in quondam bosco* [...] *a festo sancti Martini usque ad Le Hockday*: Stewart 2006, 53–4) may obliquely describe extra-Wealden woodland grazing in the months after the return of the animals from the denns.

One item in the county's place-name vocabulary that could be relevant here is OE *hlōse*. Traditionally it has been translated as 'pigsty', probably arising from an original significance of 'shed' or 'shelter' (Smith 1956a, 253). The published instances of the term in Surrey place- and field-names are collected in table 4. With the possible exception of Loss Field, Bletchingley, none of these names seems to be attached to a truly Wealden location (ie on the Weald Clay rather than the Lower Greensand formations or more northerly geologies) nor,

Table 4 Surrey place-names containing Old English *hlōse*

Place-name	Parish	Other element(s)	Reference
(on) hlosham 967	Chaldon?	*hamm*, 'enclosed land?'	S 753
(on) hlos wuda midde weardne 909	Farnham	*wudu*, 'wood'	S 382
Loseley (*Losele* 1086)	Artington	*lēah*, 'open woodland, wood pasture'	*PNS*, 185
Lordsgrove Field (*le Losegrovefild* 1432)	Banstead	*grāf*, 'coppice'	*PNS*, 377
Loose Hills (*Lowsehill* 1613)	Farnham	*hyll*, 'hill'	*PNS*, 388
Lousehill Field (*Losehyll* 1570)	Frensham	*hyll*, 'hill'	*PNS*, 389
Loss Field (*le Loscrofte c* 1250)	Bletchingley	*croft*, 'small enclosure'	*PNS*, 397

Loseley aside, was any that of an early-identifiable settlement. Lordsgrove Field in Banstead stands out for being situated in a parish that had documented outlying lands in the Weald (Turner 1997, 9; Ellaby 2004, 76 fig 2). The same conclusion might have a 10th century precedent at Chaldon, as *hlosham* is one point named in the 967 boundary description (S 753; cf Blair 1991, 46). The penultimate point in the approximately contemporary perambulation of Farnham estate-cum-Hundred, in conjunction with the much later recorded field-names Loose Hills and Lousehill Field, indicate the *hlōse* was not a feature limited to pig husbandry on the Weald Clay.

The evidence, particularly when considered in conjunction with the large numbers of pigs recorded in some documentary sources, hints at a *hlōse* being something more than a standalone small pigsty in the modern understanding. Rather, it may have consisted of one or more structures to shelter the animals during farrowing or bad weather contained within a special type of large enclosure. The existence of such shelters can be paralleled by the later medieval sheep-houses (Dyer 1995), and horses described in the 10th century *Ordinance concerning the Dunsæte* as *wintersteal*, perhaps 'kept in a stall over winter' (Neville 2006, 141–2). There may be a functional connection between such practices and the compound *winterfald*, 'winter enclosure', represented in Surrey by minor place-names in Albury and Dorking parishes (*PNS*, 232, 276). A *hlōse* was used outside the pannage season, but some of the name formations show that they need not have been located in woodland. As noted above, in the months when swine were not grazing on mast-pastures, they must have been kept in a variety of locations. Herbage or grass pasture is attested in no small number of Surrey Domesday Book entries, including several manors on the fringes of the Weald. In the late summer, immediately prior to the pannage season, harvest stubble could have been used (Wiseman 2000, 1).

Finally, consideration must be given to the unreliable nature of the mast crops that were quite literally the fuel for pig pannaging. Du Boulay's decision to refer to the pannage season as 'occasional' implies he doubted it was a guaranteed annual event (Du Boulay 1961, 80). This was picked up by Rackham, who wrote even more pessimistically about the reliability of annual acorn crops, stating they yielded sufficient fodder in about one in three years (Rackham 1986, 122). The reconciliation of the various strands of evidence proffered by Du Boulay, that pig herds were only moved over long distances away from estate centres to outlying wood pastures 'because excellent pannage had become available', is considered but perhaps a little too cautious. Where such pastures existed, the written sources betray an expectation that pannage would occur year in, year out, whether or not the mast crop was excellent. This brings the argument back to the degree of management and organisation involved, which was clearly much more intensive and complex than has been acknowledged hitherto. To prevent overgrazing or overstocking, there could be the need, from time to time, to adjust the sizes of herds in different pastures, or to reduce overall headcount through extra slaughter of animals. Doubtless, too, the environments of the denns were managed to maximise the amount of swine fodder. Transhumant pannaging was a component of a dynamic pastoral system, operating year-round both within and without the Weald.

Conclusions

The stated intention of this article was to ascertain whether the recorded detached pastures of extra-Wealden manors/parishes in Surrey constituted elements of a transhumant grazing economy based on pigs. The origins and basic geography of the seasonal grazing of livestock in the Weald have received a great deal of scholarly attention previously but, as a topic often studied in terms of a particular period or geographical area, no study has seriously pulled together all the strands in order to advance a comprehensive interpretation. Likewise, most previous works on the subject have mentioned transhumance and/or pannage, but have not always defined the terms properly, nor explained their interrelationship. The result has been the widespread assumption (explicit or implicit in published scholarship) that transhumance and pannage were both very specific practices, uniform across space and time. Each is a label for a class of adaptable grazing practices and not a monolithic and unchanging practice.

The combination of archipelagos of documented denns or suggestive place-names, and the undeniable existence of pannage as a pastoral institution (with the periodic droving of herds of swine this would have involved), does not necessarily constitute proof of the process of transhumance, which implies the regular, annual, long-distance transmission of herds and herdsmen for seasonal grazing (whether within or between *pays*). A small but significant corpus of later medieval textual references makes clear that pigs were driven over substantial distances into the Weald (and other tracts of wood pasture) for grazing on mast and out of it for sale or render, but stop short of describing the annual movement of herds of swine at the start and end of the pannage season. The main contribution this article aims to make is therefore a model, applicable to the Weald and other wooded regions exploited as common pasture resources, that provides a framework for explaining how extensive, wood pasture-based pig husbandry functioned in the Anglo-Saxon period and beyond; that it often involved the transhumance of herds of pigs for the autumn is almost incidental given it was temporally a minority element of the agricultural year.

The origins of this form of pig husbandry are hard to pin down historically. Evidence for Surrey estates with detached Wealden woods or pastures goes back as far as the earliest credible land charters of the mid-10th century. Mentions of pig pastures do not occur so early (or at least cannot be accepted outright since they are found in fabricated charter texts), but, in view of the indications that pigs were kept in large numbers in late 9th century Surrey, it seems justifiable to conclude that the links between the denns and geographically-distant estate centres were not innovations of the 900s, and instead went back further in time, as was demonstrably the case in Kent (Everitt 1986, 30, 126). The reservations expressed by Turner, and his admission of the possibility that swine transhumance in the Weald was in effect a secondary use of woodlands adjacent to common pastures used much earlier as summer grazing for cattle, can be countered with persuasive, if not entirely conclusive, evidence (Turner 1997, 10).

In Surrey, it has been posited that Wealden transhumance was active in the Iron Age (Hanworth 1987, 161), but presently the material proof of this is scant. Palaeoenvironmental data are lacking for the area, which might otherwise afford perspectives on the degree of woodland cover relative to other vegetation types. Detailed analysis by Imogen Poole (2008) of Late Iron Age to Early Roman charcoal recovered from the possible villa site at Cranleigh suggested a wooded environment initially dominated by oak, thereafter giving way to a greater mix of species. However, such techniques cannot prove if the wood was of local (or even Wealden) provenance, nor give great insight to how species selection may have related to any prevailing woodland management practices, including the woodland pasturing of swine. Moreover, the number of pig bones identified at Cranleigh was so low as to cast doubt on the importance of pigs as livestock at this particular settlement.

There is a desperate need in Surrey for more excavated faunal assemblages of early and high medieval date (ie, spanning the post-Roman centuries before the balance shifted away from extensive to intensive husbandry regimes) with which to compare the data from Lyminge and Bishopstone, as well as the slightly more voluminous (but by no means extensive)

pre-Roman and Roman-era material from the county. Until such time as new material has been found and reported, zooarchaeology cannot inform hard-and-fast statements on continuity or change in practice between and within periods. Whether or not pig pasturing was an important and widespread feature of the Iron Age and Roman Weald, it is unlikely the region bucked the general trend towards more pastoral-dominated farming systems identified across lowland Britain in the post-Roman period (Hooke 2012, 35).

The links between Lyminge and *Limenwearawalde* open up a new means of looking at the Surrey evidence, for the latter name has been held up as an example of how woodlands 'played a central role in defining territories' (Banham & Faith 2014, 154–5). There is no equivalent reference to a 'Surrey-people's *weald*', but the complex patterning of denns in the eastern half of the Surrey Weald with links to estates outside the forest to the north in the county may stand for it. The social relations needed to ensure successful management of a shared resource, and of the movement of livestock herds grazed on it seasonally or throughout the year, may have been the catalysts for territorial identities, such as the 'southern district' from which Surrey took its name (Hines 2004). Lyminge provides a unique conjunction in south-east England of the types of evidence on which links between territorial centres and the production/consumption of pigs in the Early Anglo-Saxon period can be founded. Ellaby paints a largely convincing picture of denns being 'parcelled out from communally held woodland and annexed to their respective settled estates', intimating a process handled with care and concord rather than chance and squatting, although his suggestion that Chertsey Abbey administered such arrangements relies too heavily on much later fabricated charter evidence (Ellaby 2004, 73–4, 88–9, drawing upon Rumble 1976, 172). Perhaps the mainly north–south orientated relict Roman road network in east and mid-Surrey facilitated communications between estates and denns.

A final review of the place-name evidence suggests a hierarchy of vocabulary for woodland resources. Below the level of the *weald* (if not the entire Weald then a substantial portion of it linked to a given territory), OE *feld* appears to be an important resource indicator so far as pig pasturing is concerned. Understood to mean 'open country', often land in sight of woodland, it is found as the terminal element in a number of early-recorded Wealden place-names (Gelling & Cole 2014, 269; cf Brandon 1978, 152–5). What is significant in this regard, therefore, is that denns – specifically place-names containing *denn* – appear often to have been contained within a *feld*. Rumble cited Clatfields in Edenbridge parish, just over the county boundary in Kent, which appears as *Gleppanfelda* in two charters that identify it as the site of two denns of Bromley named *Scearnden* and *Þornden* (S 331, 893; Rumble 1976, 172). In Surrey, similar situations seem to have prevailed at Lingfield (the parish takes in Lullenden and Puttenden) and Thunderfield (site of early-attested denns of Merstham and Sutton).

Grazing – and indeed transhumance – of other types of stock in the Surrey Weald in the early medieval period has been noted previously, but must be acknowledged as important for there are no overwhelming indicators for pigs having been the dominant Wealden domesticate (the comparatively brief presence of the full pannaged herds may be taken as suggesting the reverse). So, it can be noted that, in later centuries, Thunderfield or Horley Common in south-east Surrey was capable of being used as pasture for a variety of animals, even sheep (Stevenson 1809, 464). Place-names likewise suggest that different places within the Weald were associated with different types of domesticated animals and wild beasts. Brandon highlighted the much greater number of place-names in the Sussex Weald referring to pigs than other domesticates (Brandon 1978, 145–6), but the dearth of swine-related formations in Surrey may conversely also be an indicator of the ubiquity of this particular species.

Place-names also serve to identify other types of Wealden land use. Not only is it a truism that pigs are unsuitable for woodland pastures when grazed in large numbers for an extended period of time, but equally not all woodlands are – or were deemed – suitable for pigs. It is often overlooked that the rooting of grazing pigs aids tree regeneration (Hooke 2012, 35), but such actions in concert with their ability to eat just about anything make them the enemies

of the coppice wood (Stamper 1988, 131–2), and of the saplings of trees being grown for construction timber. To add an extra layer of complexity to the tenurial mosaic of the early medieval Weald, it must be presumed that some areas were used as coppices or timber woods, and as such were out of bounds to grazing swine. Place-names are probably the best guide to locating non-pasture woodlands, but must be used with due care. A recent assertion that OE *hyrst*, a common place-name element in the Surrey Weald, carried a meaning of 'coppice' rather than its accepted sense of 'wooded hill' is almost certainly incorrect, because it appears in the names of documented denns: Langhurst, Duxhurst, probably *sænget hyrst* (Smith 2005, 24, *contra* Gelling & Cole 2014, 234–5; also Darby 1963, 17–18).

The indications are that transhumant pig husbandry involving the Weald would not have entailed the wholesale introduction and removal of all domesticated swine from the denns. It is a working assumption of this article that there were specialised swine-herding settlements, existing somewhere between seasonal shielings and self-supporting farms or hamlets, in the Surrey Weald from a much earlier date than is usually proposed for the advent of permanent habitation there (pushing back in time, but otherwise complementing the suggestion made for Sussex in Brandon 1978, 154). This is as yet unsubstantiated by archaeology, although metal-detected coin finds have pushed back evidence for at least intermittent activity in the Horley and Charlwood areas to the period around the year 700 (PAS: item nos SUR-072125, SUR-FEE233). Note should be taken of an Early Anglo-Saxon sunken-featured building excavated at North Marden on the South Downs, which has been suggested to represent a shepherds' hut (Drewett *et al* 1986). This invites analogy with *Palinga schittas*, 'the ?swine(herds')-sheds [OE **scyddas*] of the *Pālingas*/Poling', recorded in a credible Sussex charter of 953, but potentially a place-name of much earlier formation (S 562; Brandon 1978, 147; Chatwin & Gardiner 2005, 35; for a discussion of the OE generic and its ME cognate *schudde*, 'hovel, pigsty', see Smith 1956b, 115). It may be that in the future similar structures built and occupied by swineherds will be found in the Surrey Weald.

On the face of it, it is hard to see that any benefit from swine transhumance could have justified the effort involved. Nevertheless, it is clear that it was a significant element of the agricultural cycle for no small number of estates in Anglo-Saxon Surrey. What is more, transhumance was a practice with much earlier origins in the historic county area, where it persisted for longer than in other parts of lowland Britain. This should come as no surprise; Surrey was rarely at the vanguard of economic or social change in the Middle Ages, and it retained a greater proportion of its woodland cover than counties within the open field-dominated 'champion' countryside of central England. However, even as a region that saw gradual change in its pastoral institutions and hence its landscape, the Surrey Weald should not be thought of as being of little interest, a marginal area exploited in uncomplicated ways. This review of evidence pertaining to the husbandry of one type of livestock has shown that Wealden land tenure and usage patterns were complex, and may have precipitated permanent settlement of the area much earlier in the post-Roman period than has been proposed to date. It demonstrates there is much still to be learnt about the topography, toponymy and archaeology of the Weald, but equally that some of its supposedly-characteristic institutions need to be viewed and understood in a wider geographical context. Transhumant pannaging of Wealden wood pastures began and ended outside the forest, and that was where the majority of the pigs spent most of the year. Consequently, it should no longer be characterised solely as a Wealden phenomenon.

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