CHAPTER 5

Trackways and Hooves Part I – Animal Husbandry in the Study Region

In this chapter, I examine animal husbandry during the later Iron Age and Romano-British periods with particular reference to northern England, along with some of the evidence for pastoral agriculture from sites within the study region and the likely husbandry practices associated with them, in addition to the possible social and symbolic importance of animals and animal husbandry to these people.

Problems with the evidence

As with plant remains (see Chapter 4), most geologies and soils in the study region are too acidic for the preservation of animal bone. Magnesian Limestone areas offer the best preservational potential, but bone condition may still be very poor. Bones may be severely eroded and only larger skeletal elements may be found, hindering identification, ageing and sexing. Bones from neonates and juveniles and those of smaller species rarely survive, yet such information is vital to considering past animal populations and husbandry practices. Most excavations within the region produce less than 1000 bone fragments, but such samples are considered too small for statistical analyses (Hambleton 1999: 13; Huntley and Stallibrass 1995: 131-135). During the M1-A1 Link Road investigations, 7102 bone fragments were recovered, the majority from one site at Parlington Hollins, but even here only 573 bones were identifiable (Richardson 2001a: 214). At Dalton Parlours, 4432 animal bone fragments were recovered, of which only 741 (or 16.7%) could be identified to species (Berg 1990: 174). These sites were on Magnesian Limestone, and are *good* assemblages for the region! At Dunston's Clump, occupied from the late first century BC to the third century AD, only a few calcined fragments and loose teeth were found (Harman 1987: 61). Waterlogged ponds, wells and ditches have sometimes produced better preserved remains, as at Moor Pool Close, Rampton (Knight 2000a) and Chainbridge Lane (Eccles, Caldwell and Mincher 1988). On many sites, animal bones survive better in

pits and postholes, whilst those in ditches are more worn (Richardson 2001a: 215-216). The fills of 'closed' features such as postholes accumulated rapidly or were deliberately backfilled, whereas features such as ditches remained open for much longer with the bones within susceptible to greater erosion and damage. Social practices were also important, with placed deposits of animal remains perhaps occurring more frequently in pits and postholes (see Chapter 11).

The focus of research is also problematic, with a recent survey of faunal assemblages from northern England concentrating on Cumbria, Lancashire, County Durham, North Yorkshire and Northumberland (Huntley and Stallibrass 1995). A review of midlands assemblages remains unpublished (Albarella in prep.), but other discussions concentrate on Leicestershire, Warwickshire, Northamptonshire and the West Midlands. Most studies have concentrated on the Wessex and Thames Valley regions due to problems of sample size. Ellen Hambleton only examined a few Iron Age sites in northern England, none of them in the study region; considering other assemblages too small for meaningful analysis (Hambleton 1999: 16). Romano-British faunal studies have tended to focus on military sites along Hadrian's Wall, or large urban and/or military centres such as York and Carlisle (e.g. Dobney 2001; Huntley and Stallibrass 1995). On older excavations animal bone was often not retained (cf. Corder 1951; Daniels 1966; Phillips 1973), or the assemblages never analysed in detail. Variations in analytical techniques and data presentation mean that even published assemblages often cannot be compared directly to one another (Dobney 2001; Hambleton 1999; Huntley and Stallibrass 1995).

Clearly, considerable difficulties must be overcome before detailed 'reconstructions' of past husbandry practices within the study area are possible. Despite advances in archaeological techniques, better bone assemblages will never be recovered from many sites. This will always be a problematic category of evidence. If we do not write about a region's archaeology, however, we effectively render it invisible (q.v. Cumberpatch and Robbins n.d.; Robbins 1999). This applies to discussions of potential animal husbandry regimes as well as patterns of field systems and settlements. In this thesis I am less concerned with relatively narrow palaeoeconomic approaches, and more interested in exploring how people and animals might have

inhabited and experienced these landscapes. I therefore use the limited faunal assemblages in a critical manner in conjunction with analyses of physical features within these landscapes probably linked to animal husbandry. This is necessarily interpretative, but my approach is based on plausible inferences informed by ethnohistoric and ethnographic analogies.

Traditional accounts of late Iron Age and Romano-British animal husbandry

Traditional or culture-history approaches to the Iron Age and Romano-British periods have generalised about the 'economies' of different areas of Britain, and were clearly influenced by Cyril Fox's division between Highlands and Lowlands (Fig. 5.01), which Fox believed had led to the development of regional 'cultures' (Fox 1932). Altitude and rainfall were regarded as absolute factors in inhibiting or encouraging different agricultural regimes and social organisation.

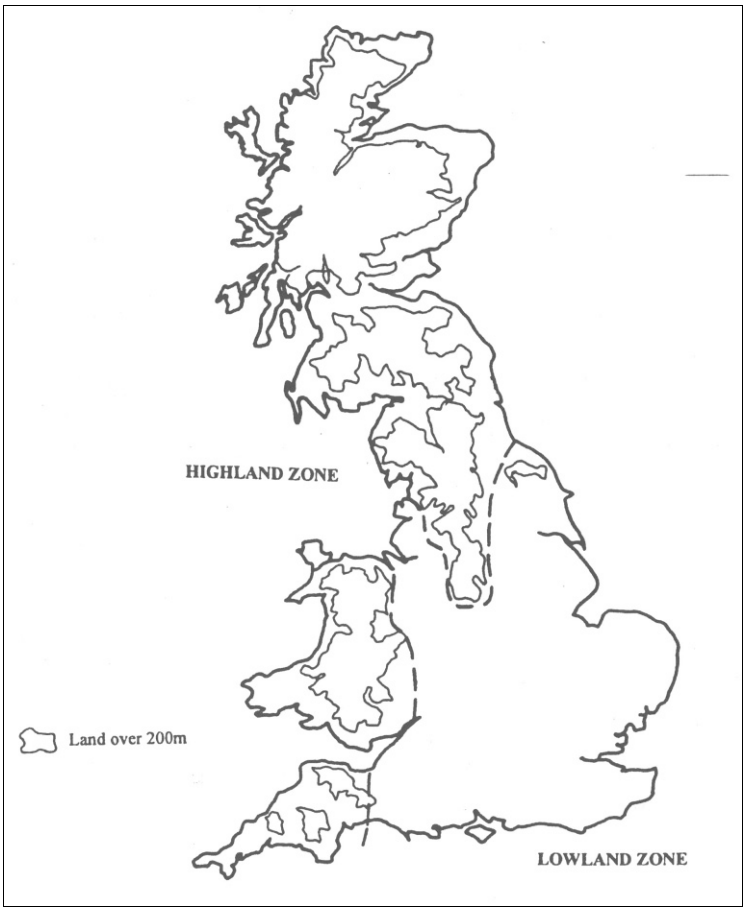

Figure 5.01. (right). *The Highland : Lowland division of Britain. (Source: Hambleton 1999: 6, fig. 1, after Fox 1932).*

Stuart Piggott divided Iron Age Britain into what he termed 'Woodbury' and 'Stanwick' type cultures (Piggott 1958). The 'Woodbury' type, based on the type-site of Little Woodbury in Wiltshire (Bersu 1940; Brailsford 1948, 1949), was supposedly characterised by mixed farming, but with arable agriculture predominant. The 'Stanwick' type, based on the highly atypical northern *oppidum* (Wheeler 1954), consisted largely of pastoralism, including nomadic herding (Piggott 1958: 24-25). Wheeler proposed that the Iron Age 'economy' of North Yorkshire comprised semi-nomadic pastoralism with a diet of 'unmitigated mutton' (Wheeler 1954: 9). This lugubrious lifestyle had clear cultural implications for Piggott:

> The Celtic cow-boys and shepherds, footloose and unpredictable, moving with their animals over rough pasture and moorland, could never adopt the Roman way of life in the manner of the settled farmers of the South. (Piggott 1958: 25).

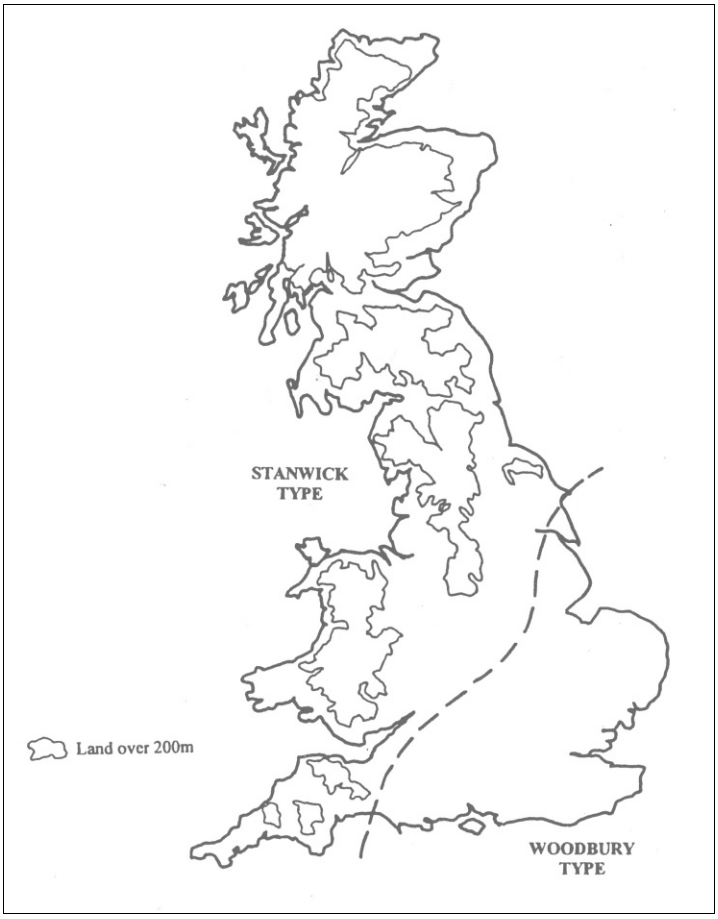

Figure 5.02. *'Stanwick' and 'Woodbury' cultures in Britain. (Source: Hambleton 1999: 7, fig. 2, after Piggott 1958).*

Piggott did not simply follow Fox's Highland: Lowland distinction (*contra* Hambleton 1999: 7), and lowland areas such as the Trent Valley and the Vale of York were also included in his 'Stanwick pastoral zone'. Environmental limitations were no doubt a major factor in his deliberations, but Piggott and Wheeler's ideas were based on a perceived paucity of Iron Age settlements in northern England, and a lack of evidence for mixed agriculture. In Piggott's influential model, it was not until the arrival of the Romans with superior agricultural techniques that arable farming increased. Such thinking was widespread at the time – Rivet described the Brigantes as 'pastoral and lacking in arable agriculture' (Rivet 1958: 71); but this factoid persisted until surprisingly recently. Frere believed the oft-mentioned quote from Caesar (see below) accurately described northern societies who 'continued to lead a more primitive life' well into the Roman period (Frere 1974: 71, 304). Hartley termed the region's inhabitants as 'hillmen' (Hartley 1980: 5). Raistrick, however, had earlier suggested that mixed farming took place (Raistrick 1939: 129), and though Ramm agreed there was little evidence for arable agriculture at Stanwick and its surrounds, he did not think this was true for the whole of northern England (Ramm 1980: 31).

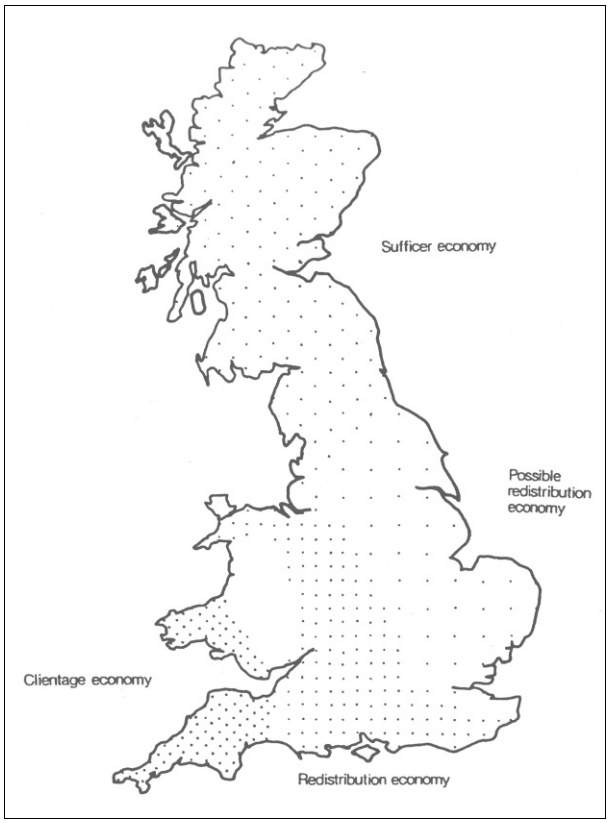

Figure 5.03. *Cunliffe's model of British Iron Age economies. (Source: Hambleton 1999, 8, fig. 3, after Cunliffe 2005: 444, fig. 16.15).*

Barry Cunliffe (1983, 1991) was more interested in productivity rather than specific agricultural practices. He included much of northern England in a 'possible redistribution economy' or within the 'sufficer economy' zone, where basic subsistence was the norm, and trade and exchange limited (Fig. 5.03). This repeats a classic core: periphery dichotomy (q.v. Collis 1996, 1999; Webster 1999; Young and Simmonds 1995). His supposedly magisterial *Iron Age Communities in Britain* only devoted a few lines to the study region (Cunliffe 1991: 279), and he continues to see northern England as predominantly pastoral. He also argued for a change in herding practices during the later first millennium BC, with secondary products becoming less important (Cunliffe 1983, 1991: 400). There is little or no archaeological evidence for this, however, other than a proposed rise in population (Higham 1991: 94).

These ideas are based upon a poor grasp of the archaeological evidence. During the 1960s and 1970s aerial photography, survey and excavation across northern Britain demonstrated that Iron Age and Romano-British rural settlement was much more extensive than previously thought (e.g. Chapman and Mytum 1983; Clack and Haselgrove 1982; Jobey 1966). Despite the identification of large-scale systems of land allotment (e.g. Riley 1977, 1978, 1980), some Romanists refused to believe there were extensive pre-Roman field systems (Branigan 1980, 1989). More considered views suggested that agriculture in upland areas may have been predominantly pastoralism, but with mixed farming or even mainly cereal cultivation in lowlands (e.g. Challis and Harding 1975; Faull and Moorhouse 1981; Haselgrove 1984).

The literary evidence

In his *Gallic War*, Julius Caesar commented thus on the inhabitants of inland Britain:

> Most of those inhabiting the interior do not grow corn, but live instead on milk and meat, and clothe themselves in skins (Caesar *De Bello Gallico* V. 14).

Centuries later in his *Epitome*, speaking of two groups on the northern frontier of Britain that he called the Maeatae and Caledonians, Cassius Dio wrote:

> Both tribes inhabit wild and waterless mountains and desolate marshy plains, and possess neither walls nor cities nor farms. Instead they live on their flocks, on game and on certain fruits, and though there are vast and limitless stocks of fish they do not eat them. They live in tents without clothing or shoes: they share their womenfolk and rear all their offspring in common. (Cassius Dio *Epitome* 76. 12.1-5).

Such comments fall into the Classical trope of portraying 'barbarians' as exotic and Other (see Chapter 2). We might see in these comments some glimpses of indigenous practices in Britain, however, no matter how distorted. The idea that people went naked or clad in skins, lived in tents, practised a promiscuous form of polyandry and did not grow any cereal crops is of course ridiculous. Nevertheless, if people did not eat many fish, and if milk and meat played a much greater part in their diets than in Mediterranean cuisine, it is possible to see how this could be wilfully misunderstood. Such biased perceptions continued to influence generations of Iron Age and Roman-British scholars, as some have noted (Collis 1996, 1999; Hingley 2000; Webster 1999; Young 1990). One exception is the description by Tacitus of cattle and horse exchanges amongst Rhineland peoples in marriage alliances or *wergeld* (*Germania* 12, 18, 21), and as fines and tribute to tribal leaders. This cannot of course be transposed to the Iron Age of northern England, but may hint at the potential social importance of livestock to these communities, which I will return to in Chapter 6.

General fauna-based studies of Iron Age and Romano-British animal husbandry

Iron Age faunal assemblages

Cattle, sheep and pigs were the main livestock raised in Iron Age Britain. In her analyses of British Iron Age faunal assemblages, Ellen Hambleton (1999: 44) states that the majority had roughly equal amounts of sheep and cattle (measured both as

NISP – the number of identifiable specimens per taxon; and MNI – the minimum number of individuals represented), with pigs present in much lower numbers (0-20%). She noted some potential regional groupings. Wessex sites had a very high proportion of sheep (40-70%), and generally slightly fewer cattle (20-50%). In the Upper Thames Valley, cattle and sheep both fell into the 30-60% range, whereas eastern England and East Anglia had high percentages of cattle (40-80%) and lower proportions of sheep (10-50%) (Hambleton 1999: 47). Although she could find no direct correlations with geology and topography, these results might reflect different regional landscapes. Sheep would be better suited to higher, drier chalkland sites in Wessex, whereas on low-lying, boggy or seasonally flooded sites in East Anglia, cattle would do better. Variations *within* regions were also important – sheep were more numerous on Wessex downlands, whereas cattle were present in higher numbers on lowland and river valley Wessex sites (Albarella 2007: 394; Grant 1984a: 104). In assemblages from midlands sites, cattle and sheep had similar proportions (30-60%). Northern assemblages were more varied, with cattle and sheep ranging from 20-70% for both species (Hambleton 1999: 47). Her samples lay outside my study region, but Hambleton suggested that this diversity reflects a broader range of husbandry practices in northern England than the 'Celtic cowboys' model. In the midlands and East Anglia, Albarella (1997: 394) notes an increase in the proportion of sheep during the later Iron Age, although once again none of his sites lies within my study region.

On most sites in Iron Age Britain there was a low incidence of pigs (Grant 1984a: 110-113; Hambleton 1999: 14; King 1991: 16-17; Maltby 1996: 23); unlike some late Iron Age sites in northern France and Germany that had very high proportions of pig remains (Grant 1984a: 112; King 1991: 16; Méniel 1987, 1990). A more recent study suggests a broader range of species proportions in northern Gaul (Lepetz 1996), although pigs still seem to have been more important than in Britain. The higher percentages of pigs on some southern English 'high-status' sites such as Skeleton Green in Hertfordshire, and in apparently high status burials in East Yorkshire, may be evidence that pork was a delicacy (Hambleton 1999: 47; King 1988, 1991: 16; Maltby 1996: 20; Parker Pearson 1999), and/or a particular emphasis on pannage. At Stanwick, investigations in the 1980s found that over 20% of the animal bone from late Iron Age deposits was pig (Haselgrove 1984: 18). At Llanmaes in the Vale of

Glamorgan, pigs accounted for at least 70-80% of the faunal remains from the early Iron Age midden deposits (Gwilt and Lodwick 2006: 8; J. Mulville pers. comm.). For many Iron Age communities, pork might only have been consumed at certain social occasions, and/or at particular places within the landscape.

Domestic goats are rarely recorded because of the difficulties of distinguishing them from sheep, so in all these descriptions 'sheep' should actually read 'sheep/goat', although to make reading easier I have not usually used this convention. Nonetheless, sometimes goats have been identified from horn cores (Grant 1984a: 113). At the Iron Age and Romano-British shrine at Uley the animal remains were around 80% goat, probably used in sacrifice and augury (Ellison 1980; Woodward and Leach 1993).

Wild game species such as deer, hare and wild boar are very rare finds on Iron Age sites. This is despite the prominence of species such as boar as representations in Iron Age iconography, whereas figurines of cattle and sheep are scarce. It is likely that there were social reasons for this (Grant 1981), and some animals might have been surrounded by proscriptions or taboos based on totemic or cosmological beliefs. For example, wild boar and hares might have been hunted but not eaten.

Mortality profiles and age-wear analyses

Estimating animals' ages at death and calculating their different proportions is the principal means by which husbandry practices can be inferred. For cattle, their prime meat-bearing age is between 1.5-3.5 years, and if kept beyond this point it is usually for milk, traction or as breeding stock (Grant 1989: 136; Hambleton 1999: 78). Older animals are still eaten after slaughtering, but the primary reason for their existence was not as meat-bearing livestock. Across Britain, cattle may have been more important to the diets of Iron Age people and their bones are predominant in many northern and midlands faunal assemblages (King 1991: 16; Maltby 1996: 20), although on some sites cattle may have decreased in importance during the late Iron Age (Albarella 2007: 394). Hambleton's analyses suggested great diversity in mortality profiles for Iron Age cattle, but the lack of intense culls of prime meat stock, together with the numbers of older animals, indicate a general lack of specialisation.

Cattle were probably exploited for milk, traction, breeding stock and for their manure (Albarella 2007; Hambleton 1999: 81). They also had potential social importance as markers of status and wealth, as agents in exchange and marriage networks, and for ritual feasts and rites of birth, death and fertility (q.v. Grant 1984b, 1991; Kuper 1982; Parker Pearson 2000; Reid 1996; Roymans 1999; Wilson 1999) (see Chapter 6). There may have been some social restrictions on their slaughter.

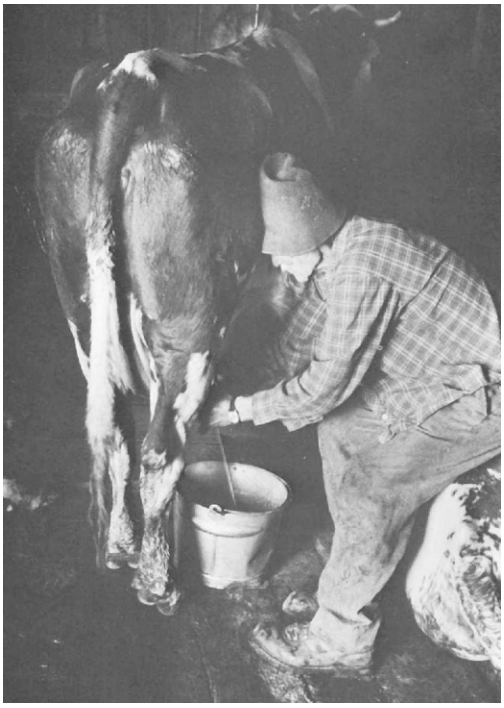

Figure 5.04. (left). *Milking cattle, French Alps. (Source: Berger and Mohr 1982: 31).*
Fig. 5.05. (above). *Milking a goat in a reconstructed Iron Age village in Denmark. (Source: © Lejre Experimental Centre).*

The Upper Thames Valley differed markedly from this overall pattern, with heavy mortality in the first three years of life, suggesting cattle were kept primarily for meat (Hambleton 1999: 82). The Thames Valley probably saw the seasonal exploitation of floodplain pasture (Lambrick 1992). Hambleton examined cattle age profiles from only three assemblages in other regions of Britain, due to problems with the datasets. Dragonby was one of these, where a concentration on the slaughter of younger beef animals was noted (Hambleton 1999: 82).

If sheep are raised for meat, a large percentage of animals are killed between 1.5-3 years (Grant 1984a: 106). Older animals are kept for wool, milk and manure, and breeding (Grant 1984a: 106-107; King 1991: 16; Maltby 1981: 172-174, 1996: 22). In most Iron Age assemblages the greatest mortality rate was between 0.5-1 years

(Albarella 2007: 394; Hambleton 1999: 70). These might have been yearlings that failed to survive their first winter, or animals culled in autumn or early winter to keep flocks at a desired size and condition over winter – the latter seems more likely, although a social predilection for lamb is also possible.

Figure 5.06. *Temporary lambing fold of hurdles for Downs sheep, made in Hampshire during the 1930s. (Source: Ward 1991: 72).*

Flocks might have been kept within or close to settlements during winter, but a generally low ratio of infant mandibles suggests lambing occurred away from settlements (Hambleton 1999: 70), although at Danebury high numbers of neonates were recovered (Grant 1984a: 107). Large numbers of juvenile cattle bones were found too, but there may be social and symbolic reasons for this deposition of young sheep and cattle (Grant 1984b, 1991; Hill 1995a, 1996b; Wilson 1999). There were two different sheep mortality curves for Wessex sites. One group had 65-85% survival beyond 0.5-1 years, but in the other only 40-55% of sheep lived beyond a year. Sites with higher mortality rates may have had greater emphasis on wool and milk, whilst slaughter for meat may have been more important at the latter group of sites (Hambleton 1999: 72-73). Apart from some Upper Thames Valley and East Anglian sites in keeping with the general pattern, Hambleton did not consider sheep assemblages from other regions as she felt that the sample sizes were inadequate.

Most Iron Age pigs were killed between 0.5-2.5 years old at prime meat bearing age (Grant 1984a: 112; Hambleton 1999: 69; Maltby 1996: 23). Pigs have few secondary products apart from manure, so this is a common pattern in many societies around the world, including our own. Individuals living beyond this might represent breeding stock, or in some cases wild boar remains incorrectly identified as domestic pig.

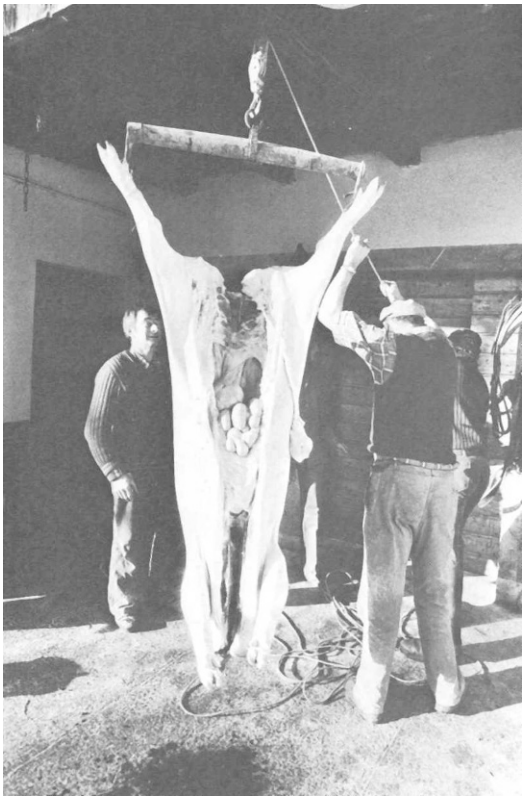

Figure 5.07. (left). *Cutting up the pig, Haute-Savoie, French Alps. (Source: Berger and Mohr 1982: 252).* **Figure 5.08. (top right).** *Tifalmin men cutting up the pig, Papua New Guinea. (Source: Wheatcroft 1973: 70).* **Figure 5.09. (bottom right).** *Gimi man cutting up the pig, Warida, New Guinea. (Source: Gillison 2002: 114).*

Romano-British faunal assemblages

Across Britain, Romano-British faunal assemblages reveal lower proportions of sheep and higher percentages of cattle and maybe pigs than Iron Age remains (Albarella 2007: 396-397; Grant 1989: 136; Hambleton 1999: 44; King 1991: 17), the latter perhaps due to increased pork consumption (King 1978, 1988, 1991). Classical sources such as Apicius concentrated on pork recipes (Cool 2006: 82; Edwards 1984; Flower and Rosenbaum 1958), and eating bacon was associated with central Italy and also the Roman military in the core of the Empire. Cattle dominate Roman military

faunal assemblages in Britain, however, with animals killed at the prime meat age of 3-4 years (Cool 2006: 82-84; Dobney 2001: 37; King 1978, 1984, 1999: 189). Such high frequencies on military and urban sites are similar to 'non-Romanised' rural communities, but also to patterns in Gaul, the Low Countries and Germany (Luff 1982; Roymans 1999). In the Mediterranean cow's milk was rarely consumed but used mainly in medicine (Dobney 2001), and sheep and goats' milk was drunk and used for fat and cheeses. Clearly, 'Roman' diets changed as the Empire spread across north-western Europe, and the continued importance of cow's milk in Roman Britain is interesting. King (1991: 17) noted changes in mortality curves for cattle during the Romano-British period. Older animals were more common than in many Iron Age assemblages, especially on military and urban sites, and sometimes there were no juveniles represented at all. This no doubt reflects changes in consumption patterns and more specialised movements of livestock, with military sites and urban centres importing most of their cattle as adult beasts, either as carcasses or live animals. More sheep were killed when sub-adult or adult in the Romano-British period than in the Iron Age, which might imply that meat and wool production were emphasised.

Livestock may have gradually increased in size during the Romano-British period (Albarella 2007: 397; Grant 1989: 142; King 1991: 17; O'Connor 1988), particularly cattle and horses, but also sheep, pigs and dogs. This was a result of importing new breeding stock, although such changes may not have become pronounced until the third century AD (Dobney 2001: 38). This trend is most noticeable in south-east England, but also along the northern frontier (King 1991: 17). Sue Stallibrass notes that slight increases in height and changes in horn core shapes in Romano-British cattle might signify marked variations in their appearance compared to native cattle, with differently coloured coats, smooth rather than longer hair, and different temperaments, milking qualities or productivity (Stallibrass 2000: 69-70). Some indigenous farmers might have regarded these introductions with resentment or disdain, others with enthusiasm. Studies of congenital and/or non-metric traits in cattle bones are revealing regional differences – cattle on either side of the Pennines were different, and larger beasts were not widely adopted in the north-west (ibid.).

A survey of a limited number of faunal assemblages from northern England, mostly from military and urban sites, suggests that throughout the Roman period there were small numbers of particularly large, non-native cattle (Dobney 2001: 39). Dobney does not explain this, but these could have been large draught animals used to pull heavy wagons, especially for the Roman military. In some places, particularly urban centres and forts, slaughtering patterns and butchery techniques may have changed considerably following the Roman conquest. These may have included the introduction of cleavers, the hanging of large joints for curing or storage, and the production of smaller portions as 'snack foods' (Cool 2006: 89-91; Dobney 2001: 39-41; King 1984: 214, 1991: 17; Meadows 1994, 1997: 26-27). Wool also supposedly became finer, and the appearance of donkeys, mules and new breeds of horse, dog and domestic fowl again suggest an increasing interest in animal breeding (Grant 1989: 146). Wild species such as deer and hares appear more frequently in some faunal assemblages from forts, urban and villa sites (King 1991: 17-18), although this evidence has been over-emphasised and game was probably only consumed in small quantities and during special circumstances (Cool 2006: 114).

Some writers have suggested that there was an overall increase in livestock numbers, with animals possibly allowed to live longer (King 1991: 17; van der Veen and O'Connor 1998: 134). The archaeological evidence for this supposed increase is unclear, however, and indeed would be extremely hard to determine (J. Richardson pers. comm.). Hay cropping may have been introduced to Britain at this time (Greig 1984; Jones 1991: 23), and might have permitted greater livestock densities through more winter fodder. Much of this apparent increase has been attributed to the introduction of taxation, and the demands of the army for meat and hides (Branigan 1984: 30). Certainly tanning and related crafts became industrial in scale on some sites at this time, as the military in particular required hides for tents, shield covers and equipment straps and belts. Although it is widely believed that most of this leather came from cattle (Grant 1989: 140; Luff 1982: 52; Noddle 1987: 43), goatskins might actually have been used for tents, saddle covers and straps (van Driel-Murray 1985, 1998). Some authors have suggested that an organised wool 'industry' developed in the later Roman period on villa sites (Branigan 1989: 166; Hayes 1981; King 1991: 18), and farming communities are thought to have become generally

'wealthier'. Post-colonial approaches suggest that we should be cautious in examining many of these discourses of improvement, not least given the problems of analysing faunal assemblages. There is no doubt that in parts of central southern Britain large farms and villas did generate substantial incomes within the monetarised Romano-British market, but it is less clear how this affected the study region.

Animal behaviours and animal bones

General overviews (e.g. Albarella 2007; Hambleton 1999) have provided important insights into potential past husbandry practices, even if the faunal evidence from the study region is often equivocal, although similar analyses have been undertaken on some excavated sites within the region (e.g. Berg 1990, 1999; Richardson 2001a, 2001c, 2005c). Such economically focused studies, however, do not take us much further towards understanding how animals were linked to the daily lives and taskscapes of people. In order to do so, in Appendix B I have examined the characteristics and behaviours of each animal species, as well as some ethnohistorical and ethnographic evidence for their interactions with people and the landscape. Appendix C lists the detailed data concerning excavated animal bone assemblages from the study region, where for convenience I have grouped sites and faunal assemblages according to their modern county, though this is of course an artificial divide. These assemblages are summarised in Tables 4-10.

Interpretation and conclusions

Despite the extremely problematic nature of the evidence and the variety of taphonomic and cultural factors that might have influenced bone preservation, some broad patterns are noticeable in the limited faunal assemblages available. In most later Iron Age bone assemblages the emphasis seems to have been on cattle rather than sheep/goat, with only Dalton Parlours, Apple Tree Close and Aslockton as exceptions, although if unidentified 'sheep-sized' animals are taken into account Topham Farm,

Sykehouse may have had roughly equal proportions of cattle and sheep. Farmsteads on higher ground might be expected to have concentrated on sheep, with cattle being more important on low-lying sites, especially on or near river floodplains. Cattle certainly dominated the assemblage at Balby Carr. Some evidence contradicts this though, with cattle bone being much more frequent at the late Iron Age and earlier Romano-British M1-A1 sites, and in both Iron Age and Romano-British periods at Ferrybridge[1], which were all in more undulating Coal Measures and Magnesian Limestone landscapes. This might suggest that for many communities within the study region cattle were generally more important during the later Iron Age and earliest Romano-British period.

The large enclosure complex at Aslockton was one of the few Iron Age sites in the region where sheep/goat might have been more common than cattle, and the artefacts recovered included rare finds of triangular loomweights and bone weaving combs, perhaps suggesting that weaving and textile production was important (Palmer-Brown and Knight 1993). It is almost unique in having cattle remains (and maybe caprines too) that suggest animals were raised primarily for their meat (Hamshaw-Thomas 1992: 6-7), perhaps indicating that Aslockton had a different, possibly higher social status to smaller settlements.

In the Romano-British period, especially in the third and fourth centuries AD, the situation became more complex, and this might well reflect some of the longer-term economic and social effects of the Roman occupation. Although on most late Iron Age and early Romano-British sites pigs were less than 4-5% of the bone assemblages, pigs represented 7.5-17% at Dalton Parlours, Parlington Hollins, Castleford, Doncaster, Staunton, *Margidunum* and *Derventio*/Little Chester. These may indicate changes in both husbandry and consumption practices, with pork becoming more desirable. These were mostly Roman military and/or urban sites, and this fits more general trends across Britain (Cool 2006; Grant 1989; King 1991, 1999), although higher percentages at Dalton Parlours, Parlington Hollins and Staunton may indicate changes on some rural settlements too. The presence of oysters at the Dalton Parlours villa might be further evidence that its occupants were more 'Romanised', as shellfish consumption was particularly pronounced in parts of

Roman Britain (Cool 2006:107-109). The very high proportions of pig (16-17%) at Castleford and Dalton Parlours in the late Roman period were also similar to Anglo-Saxon settlement sites (Berg 1999: 225; Fowler 2002: 233).

Sheep were most numerous on the M1-A1 sites during the middle and later Romano-British period, especially at Parlington Hollins. The relatively high proportion of horse remains at the latter site might again suggest this community or individuals within it had a different social status, or were involved in different practices. At Dalton Parlours and *Margidunum*, however, the proportion of sheep to cattle decreased in this period, with cattle becoming most numerous at the latter site, so such trends cannot simply be read off as an index of 'Romanisation'. There may have been a degree of livestock specialisation in different locales. In most places though, cattle continued to be the most important livestock. For both cattle and sheep, most animals at the majority of Romano-British sites were probably kept for breeding and secondary products, and were slaughtered after their prime meat-bearing age, unlike many other Roman military and civilian settlements in Britain (Dobney 2001; Grant 1989; King 1978, 1984, 1991). This suggests that for most rural settlements traditional patterns and practices of animal husbandry and food consumption remained, sometimes even around otherwise 'Romanised' settlements.

Although military and urban sites were potential markets for animal products and produce, a specific 'meat industry' did not develop within the region but rather surplus animals were sold or traded off whenever possible. This is significantly different from other regions of Britain, and emphasises the likely diversity of civilian and military interactions across the province (James 2002: 43). Furthermore, if a Roman-run 'wool industry' had developed in the study region, many more assemblages would be expected to have been dominated by sheep, and this trend would be most evident at highly 'Romanised' rural sites such as villas. There is no archaeological and faunal evidence for this (*contra* Branigan 1989; Hayes 1981; King 1991). No doubt there were variations from settlement to settlement, but despite this and all of the biases in preservation and taphonomy, it seems that following the Roman conquest, cattle continued to be the most significant animals.

Notes

1. This refers to the rural settlement sites excavated at Ferrybridge (Roberts 2005a), and not the highly atypical square barrow carriage burial found at Ferry Fryston nearby (Boyle et al. 2007), with its extremely large number of cattle remains.