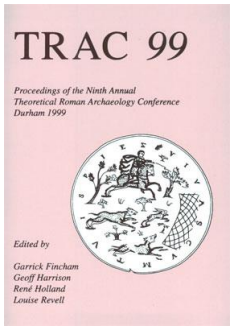

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Cattle, culture, status and soldiers in northern England

by Sue Stallibrass

Introduction

Roman Britain was not homogeneous. There are obvious differences between the south and the north. In the north, for instance, the distribution of known villas peters out beyond the River Tees, and the military presence was maintained throughout the late 1st to late 4th centuries. But the north, itself, was not homogeneous, and this paper seeks to investigate some of the more subtle differences that have been observed, and to consider some of the potential influencing factors. It concentrates on military and military-related sites, since these have been investigated more often than rural settlements, but the methods and the underpinning theory are applicable to all sites throughout and adjacent to the Roman Empire. Similarly, although this paper considers animal bones (particularly those of cattle, the commonest species in hand-recovered collections from Roman sites in northern England), the methods, theory and results can be interlinked with studies of other archaeological aspects such as ceramic and metal artefacts, botanical remains, house structures and settlement patterns. The area considered is Hadrian's Wall and its approach zone.

Basic premises

This work is based on two premises:

1. the north of England comprises a variety of topographical and environmental types, which provide various potentials and constraints for landuse and for communications with other regions.
2. the north of England, during the 'Roman period' (late 1st – late 4th Centuries AD) was inhabited/occupied/settled by people with varying ethnic/linguistic/cultural/ religious affiliations. Some of these people were indigenous, others came from near or far; some were permanent whilst others were transient; and some were civilian whilst others were military (or associated in some manner with military infrastructures).

The logical expectation, therefore, is that archaeological evidence should reflect a great degree of variability within the region.

Questions to ask

The challenge is to ascertain:

1. What variability is caused by vagaries of site formation and taphonomic processes and what is 'genuine' ie original archaeological variability?
2. Whether it is possible (and if so, how) to ascribe influences to observed archaeological variability.

Even if biases relating to the survival and recovery of evidence can be identified and removed from considerations, it seems simplistic to expect one single model to be able to predict or

explain all of the potential archaeological variability. This is expected (on the basis of the premises listed above) to be complex and to have multiple, interacting, causal factors.

Some fundamental questions include:

1. Who lived here?
2. Were they soldiers or civilians (or is this dichotomy oversimplistic?)
3. What cultural or ethnic affiliation(s) did the people have?
4. How stereotyped was each group?

Data available

Observable variable	**Suggested influences**
Species identifications	Environmental constraints
(relative frequencies of species)	Cultural/ethnic choice
	Military requirements
	Market economy (eg urban supply)
	Demonstrations of status/wealth
Age distributions for each species	Environmental constraints
	Transport constraints
	(home produced or brought in/sent out)
	Military requirements
	Market economy (eg urban supply)
	Cultural/ethnic choice
	Demonstrations of status/wealth
Butchery patterns, including carcase	Military requirements
completeness	Market economy (eg urban supply)
	Cultural/ethnic choice
	Demonstrations of status/wealth
Discard patterns	Level of cultural and administrative organisation
	Density of occupation
	Cultural/ethnic choice
Conformation of livestock	Indigenous *versus* introduced types
(ie the size and shape of the animals)	Nutrition
Congenital traits (prevalences of)	Restricted/mixed gene pools

Table 1: Some observable variables and possible archaeological influences (please note: post-depositional taphonomic influences are not listed).

Post-excavation analysis of vertebrate remains is usually informed by some basic knowledge such as:

1. The geographical location of the site (although not, necessarily, of the geographical origins of its occupants)
2. The date of occupation (ranging through timespans of a few years to several decades or even a century or more).

In addition:

3. The nature of the site and the finds can SOMETIMES lead to the designation of a site as a military installation.
4. Epigraphic data can OCCASIONALLY indicate ethnic origins, particularly with regard to military personnel (either individuals or groups).

Table 1 lists several types of data that can be recorded for animal bones from archaeological sites, together with selections of agencies that might influence observable variability. Please note that the order of presentation does not imply any ranking, and that post-depositional taphonomic influences are not listed here.

The scope of this study

It is beyond the scope of this study to provide full considerations of site formation processes and taphonomic variables for each collection. However, like has been compared with like wherever possible: all of the collections considered here were hand-recovered during excavation, several of them by the same teams of excavators, and most of them have been recorded using a standardised system by one faunal specialist (the author). For the rest of this paper, observed differences are assumed to be archaeological in origin. Some of the taphonomic variables are relevant to considerations of cultural/ethnic/military affiliations and are used to inform interpretations.

The questions and variables identified in Table 1 should be applied to data from all Romano-British sites in the region, but the fact is that very few sites have been investigated in the north of England that are not related to military installations in one way or another. This study, therefore, is restricted to such sites by necessity not academic choice. Similarly, it would be logical to investigate pre-Roman Iron Age collections for patterns of variability before any interpretations are made of Romano-British characteristics. Sadly, there are almost no Iron Age faunal collections from most parts of northern England.

Hand-recovered collections of animal bones from Roman sites in Britain are almost always dominated by bones from the three major species of domestic mammal: cattle, sheep and pigs. In northern England, cattle bones typically comprise the clear majority of identified specimens in each collection (see below). This paper concentrates mainly on cattle bones, since these provide the most widespread, the most numerous, and the largest samples for analysis and comparison. It is not able to consider the exploitation of fish, birds and wild species of mammal due to a paucity of recovered material. These animals are highly relevant to discussions of culture and status and should be targeted for recovery from future excavations by the routine processing of large bulk sediment samples.

Appendix 1 lists the vertebrate collections utilised for this study. For ease of reading, where a site collection is mentioned in the text, the reference(s) can be obtained from Appendix 1.

Results

The results presented here are selective and illustrative rather than exhaustive.

Species:

The hand-recovered collections are all dominated by bones of cattle, although this dominance is less pronounced in the low-lying south-eastern part of the region (in the Vale of Mowbray: the northern extension of the Vale of York), where sheep bones form a more significant minority.

There is slight evidence for an increase through time in the relative frequencies of cattle bones (as observed for the whole of England by King 1981), but the ratios of cattle tend to be >70% of the total number of identified fragments of cattle + sheep/goat + pig bones even in the late 1st century AD.

Most of northern England is suited to cattle pasture. The military required large numbers of slaughtered cattle to supply meat and skins (for equipment made of leather). The general lack of contrast between military and non-military reliance on cattle is unsurprising given the environmental constraints and potentialities.

There is little variation in species diversity, apart from the geographical 'distinction' of the south-eastern part of the region, which could be due to several factors including topography and environment, cultural or ethnic affiliations, and economic/trade influences. This area has also been noted by Evans (forthcoming) as having a greater reliance on ceramic artefacts than the rest of northern England.

Ageing:

The age distributions of the dead animals represented in the collections vary more than the relative frequencies of species.

At Carlisle, the fort at Annetwell Street produced a mixture of remains from older cattle with a significant minority of bones from animals of prime beef-providing age. In contrast, the collection from the civilian settlement at Carlisle (The Lanes) comprised predominantly older animals. This implies that the military personnel had preferential access to meat from animals raised primarily to provide meat. The civilians obtained their meat from animals that would have been utilised primarily for a variety of other purposes (eg the provision of traction, breeding stock, dairy products etc). For these animals, meat would have been one of the final products and might have been of a tougher texture resulting from a life of hard work.

Not all military sites were so favoured. Carlisle is situated in a low-lying area close to the estuary of the River Eden, on major Roman routeways running north-south and east-west. It is surrounded by land that can provide good pasture as well as arable. In contrast, the fort at Birdoswald is located on a high river bluff in the central Pennines. Although it was on the east-west road linking the Hadrian's Wall frontier installations, it had poorer communications (both by land and sea) than Carlisle, and the surrounding uplands would have provided less lush pastures. Here, the cattle bones from the fort derive predominantly from mature animals.

This raises several questions. Is this a quirk due to the relatively small sample size of the collection from the fort at Birdoswald, or is it representative of the site compared to Carlisle? How would the material from the two vici at Birdoswald (not yet excavated for faunal remains) compare with that from their associated fort? Since the garrisons at the two forts were drawn from different parts of the Roman Empire, does the difference reflect cultural choice rather than economic/environmental necessity or constraints?

Any live population of domestic cattle would be expected to comprise: many females (cows) for breeding, possibly also for the provision of milk for dairy products for human consumption, possibly also for traction, plus a very few intact males (bulls) for breeding, plus some castrated males (castrates, sometimes referred to as 'oxen') for traction, plus many juveniles of both sexes for replacement stock. Since relatively few adult males are required, it is usually the adolescent males that can be culled to provide meat (at a prime beef age). If these were not going to the military at Birdoswald, where were they going?

At one of the few non-military sites considered here, the town at Catterick also produced a collection of cattle bones lacking in those from prime beef animals. In this instance, it is

possible that either the cattle represented at the town were bought in from elsewhere, and the civilians tended to buy meat from old animals, or that the civilians raised their own cattle, but sold off their prime beef animals or had to pay them in taxes to the Roman authorities. At Catterick, there is some evidence, in the form of bones from extremely young calf bones, that the cattle may have been raised in the town itself, possibly even as 'house cows' to provide milk as well as other products.

In contrast, the age distribution of the sheep bones at Catterick town and all of the military sites considered here indicate that immature sheep were bought for meat. This suggests that environmental and economic constraints were sometimes more influential than military or ethnic status.

Butchery patterns:

Certain patterns of butchery appear to be related to, or restricted to, military sites. These include systematic treatment of cattle scapulae (shoulder blades): particularly the trimming around the glenoid cavity and the over-representation of scapulae compared to other skeletal elements. For instance, at the Annetwell Street fort in Carlisle, cattle scapulae were twice as abundant as the next most prolific bone (the mandible [lower jaw], which was, itself, considerably more frequent than many other bones).

Also common at many forts, although also noted at some urban sites such as Lincoln (Dobney et al 1995) are indications of meat processing associated with cattle scapulae. These include narrow rectangular holes through the blade (usually considered to have been made for the insertion of hooks to hang shoulders of meat for drying or smoking), and knife marks on the blade (indicative of filleting meat prior to cooking). Another trait thought to be closely associated with military establishments is the intensive butchery of cattle long bones, typically split longitudinally as well as transversely.

Other patterns may be cultural or ethnic in origin. This includes the charring and breakage midshaft of cattle metapodials (the long bones in the centre of the feet, immediately above the toes). This treatment of bones is occasionally seen on a variety of elements (quite often on mandibles) at several archaeological sites, but there is a notable concentration of cattle metapodials treated in this way at Romano-British sites in north-west England. These include both the fort and the civilian settlement at Carlisle, and the area adjacent to the fort at Ribchester. Interestingly, there are no examples at the ?military-related site at Walton-le-Dale, only 12 kilometres downstream from Ribchester.

Discard patterns:

These relate in part to butchery patterns, and there is much potential for spatial studies. At Carlisle, in the southern area of The Lanes, rubbish including pottery and animal bones appears to have been dumped 'over the fence' into an adjacent unoccupied plot. When a structure was built upon that plot, and the original became unoccupied, the pattern of discard was reversed. In contrast, in the northern area of The Lanes, a contemporary large structure and its surrounding land were kept remarkably free from debris, implying some sort of 'municipal', cultural or military control or influence over land use and deposition of materials.

In the southern area, sediments associated with a hedged boundary line produced faecal botanical and vertebrate remains and several coins of low denomination, suggesting informal practices of human defaecation, whilst the fort at Castleford contained a large latrine full of human and other waste materials, implying some form of organisation for the disposal of noxious waste.

It may be difficult to separate organisation of refuse disposal in a military context from that associated with urban contexts, since both have to cope with problems caused by relatively high densities of occupation. On the other hand, settlements associated with arable production might value organic refuse as fertiliser, and take steps to accumulate it for subsequent transfer to the fields, whilst purely consumer settlements (such as forts when occupied for short periods of time) might take steps to keep unsanitary waste out of habitations, but not be concerned with the subsequent relocation of such waste. Certainly, the waterlogged sediments associated with the 1st and 2nd century timber forts at Carlisle contained great quantities of organic waste within the military centre. In some cases, such as the fort at Castleford, large bone fragments were utilised as hardcore to infill potholes in the roads.

Conformation: the size and shape of animals:

Throughout Europe, prior to the establishment of the Roman Empire, the cattle were remarkably similar in their skeletal size and proportion. These 'Celtic shorthorns' persisted as the standard stock for several hundred years, both within and outside of the Empire. Within the Empire's territory, however, some larger cattle, some with a different horncore shape, were bred/imported/nourished (N.B. the origins of these larger cattle is controversial. The concept that cattle became larger because of better nutrition and husbandry implies that all Iron Age cattle throughout Europe were runts, which is a rather Roman-centric arrogant view, but it is still unclear whether the cattle were bred from local stock and/or imported).

Remains of larger cattle are present earliest and in greatest numbers in the centre of the Empire (ie around Rome), gradually spreading outwards to the provinces. Bones from a few of these animals are present at sites in southern England in the 1st/2nd centuries (Luff 1982) and reached York by the 2nd century, where they formed a significant minority of the recovered remains from Tanner Row (O'Connor 1988). They reached Chester-le-Street by the 3rd/4thcentury but are absent, or almost absent, from sites in north-west England, the other side of the Pennine chain. This may be partly due to a relative paucity of vertebrate collections from 3rd/4th century deposits in the north-west, but their absence from the Annetwell Street collections is notable (Stallibrass, unpublished data & 1998).

Evans (forthcoming) has observed a similar delay and low frequency in uptake of north-east types of pottery in the north-west. In both instances, the road and river communication networks were established from the early Roman period onwards, and the 'goods' (pottery and larger cattle) were available in the north-east up to two centuries before they were being received in the north-west. It would appear that there were some factors inhibiting their distribution westwards: perhaps a lack of desire for such items (inertia) or positive resistance against their acquisition. Whilst it is possible that the larger cattle were unsuited in some way to the wet upland areas of north-west England, this factor is unlikely to have affected the uptake of pottery manufactured in the north-east.

For cattle to have been one centimetre or so taller at their shoulders, with slightly different horncore shapes does not sound like a significant difference, but these are simply the subtle differences in skeletal morphology. Their actual appearance may have been substantially different. For instance, their coats may have been different colours, or may have been short and smooth rather than long and curly. To our modern eyes, a black and white Fresian stands out amongst a field of red Herefords. Similarly, the 'new' larger cattle may have looked or behaved radically differently to the indigenous 'Celtic shorthorns'.

The 'new' cattle may have had other novel traits, such as different temperaments, calving rates or milking qualities. Traditional conservative farmers might have regarded new types with

suspicion, resentment or disdain, whilst more entrepreneurial farmers might have welcomed new developments, particularly if they carried the kudos of Roman fashion.

The interpretation of skeletal differences is fraught with complications (not least the possibility that larger bones simply indicate larger individuals, typically males, of indigenous stock), but there is increasing evidence for the presence of some new types of cattle in England, and this evidence is particularly sparse and late in north-west England.

Congenital traits:

Congenital traits are characteristics that are 'coded for' in the individual's genes at birth (as opposed to acquired characteristics such as those caused by trauma, illness etc). The genes can be inherited or random mutations. Inherited traits that are determined by recessive genes are only expressed if an individual inherits the relevant recessive gene from both parents. This is more likely to occur if there is a restricted gene pool (breeding population).

A study of various traits in cattle bones (Stallibrass in prep.) indicates that there is some evidence to suggest that the prevalences of these traits differed on either side of the Pennines (ie the north-east and the north-west were different) and that there were also differences through time. The data are still sparse, but may relate to the indications for animals of different conformation on either side of the Pennines.

At Walton-le-Dale a significant minority of the lower third molars (the 'wisdom teeth') of the cattle jaws shows an unusual congenital trait that is almost certainly inherited rather than caused by random mutations, nutrition etc. The third column (the hypoconulid) of these teeth is partially detached. This trait is very unusual, and the relative frequency at Walton-le-Dale suggests that the cattle came from a restricted breeding population, possibly a single herd.

Discussion

It is clear from Table 1 that most of the observable variables have multiple causes and that there can be no 'one to one' interpretations. Even forts, with their regular layouts and numbers of troops should be expected to show some variation due to the peoples' ethnic origins, their interactions with local populations, the constraints and potentials of transport and local production etc etc. Each case should be considered as a unique combination of observable traits for which some factors may have been more influential than others.

At Walton-le-Dale there are some variables that suggest a military presence (eg a small amount of heavily butchered cattle long bone debris) but this comprises a small minority of the overall collection. Similarly, there are occasional indications of high status (such as the presence of swan bones, although a bird could have been 'poached'). Most of the cattle were quite mature: there is no evidence for the preferential access to prime beef cattle. Overall, the animals' conformation suggests that only indigenous cattle were utilised and that these came from a restricted breeding population, presumably a local herd. However, there is no evidence for the charring and breaking midshaft of cattle metapodials that is seen at other sites in the region (see above). This might suggest that the human inhabitants were not so local. The site is enigmatic for various reasons: some artefacts and building structures suggest a military or high status presence, whilst the majority indicate occupation by relatively low status people. There is also much evidence for industrial activities at the site. Perhaps the site was an industrial centre under military control, using slaves or other low-status personnel for labour.

Although this paper has concentrated on animal bones, primarily those of domestic cattle, it is important to relate the data to other types of archaeological evidence.

This study has only scratched the surface. Further work could look at a transect of sites along Hadrian's Wall and its hinterland, comparing groups of sites such as those at Carlisle, Birdoswald, Housesteads, Vindolanda and South Shields where military forts are associated with vici or other ?civilian settlements. Are there notable differences between the forts themselves (possibly relating to their different locations, military installations and ethnic origins)? Or are the forts relatively uniform amongst themselves, with differences more marked between each fort and its associated civilian or quasi-military settlements?

Evans (forthcoming) has made the suggestion (based on his study of the pottery types) that the vici at Carlisle and Corbridge were military 'planted' settlements rather than civilian-led accumulations. This suggestion could be followed up by close examination of faunal remains. Already there are some indications of close links between the fort and the 'civilian' settlement in Carlisle: the cattle at the two sites appear to have been drawn from the same local gene pool (with the fort having preferential access to animals of prime beef-producing age), and the bones at both sites were sometimes treated in the same distinctive manner.

Similarly, a comparison could be made between two groups of sites in different topographical parts of the region, such as Carlisle and Catterick. Why is it that there appears to be a civilian town associated with the fort and vicus at Catterick, but not at Ribchester?

Old excavations at military and related sites in the Hadrian's Wall area and its approach roads tended to emphasise the military's reliance on cattle that could have been transported by road or sea from the south. The variability observed in studies of material excavated in the 1980s and 1990s suggests that this assumed a supply system that ignored the local indigenous populations of people and livestock. Whilst some attributes do appear to relate to military affiliation (eg preferential access to prime beef, the organised and large-scale preparation of preserved meat for storage and transport off the bone), much appears to have been influenced by local circumstances.

The big question is: Do these traits reflect pre-existing patterns from the Iron Age, or are they newly-developed and semi-autonomous for each site according to local constraints, possibilities and cultural choice? A transect along Hadrian's Wall would probably find that each military fort had a slightly different set of attributes. The lack of Iron Age material in this region hampers a study of whether or not there were pre-existing differences, but it should still be possible to consider factors relating to military history (eg where troops came from, how many troops were garrisoned at a fort and when, and for how long) as well as those relating to environmental constraints.

This type of study could be extended to other parts of the Roman Empire, and should certainly be extended to include non-military sites in northern England, if suitable collections can be recovered.

The premise underlying this study is that the northern part of Roman Britain contained a variety of people and landscapes and that we should move away from stereotyping sites. The faunal evidence supports this view and highlights the complexities and subtleties that can be observed. Northern England after the withdrawal of the Roman army was not a uniform landscape dotted with examples of 'type sites' but a diverse region with varied cultural and economic attributes. As yet, we can neither 'map' nor predict these variations with accuracy, but we can continue to investigate how cultural, military and status-related factors interacted with local environmental variability.

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Appendix 1 The site collections utilised in this study
(N.B. where relevant, the references are to the archive reports that contain most data rather than to subsequent publication reports).

Site name	Nature of occupation	Total NISP*	Cattle frags.	Biobliographic reference
Birdoswald	Fort	1008	649	Izard 1993
Carlisle: Annetwell Street	Fort	8991	3636	Stallibrass 1991a & 1991b
Carlisle: The Lanes, southern half	Civilian	2823	1306	Stallibrass 1993
Carlisle: The Lanes, northern half	Civilian	1573	1042	Connell & Davis (forthcoming)
Castleford: Site 1	fort	3519	2191	Stallibrass 1985
Catterick: Thornbrough Farm	Fort & town	1752	799	Stallibrass 1997
Chester-le-Street	Fort	203	39	Stallibrass 1991c
Ribchester	?fort annexe	3340	1564	Stallibrass 1995 & forthcoming
Walton-le-Dale	?industrial site	4991	1851	Stallibrass in prep.

frags.: identified specimens

NISP* : Recording methods for Numbers of Identified Specimens (NISP) differed in these reports. For Annetwell Street Period 3, Castleford Site 1 and Walton le Dale, ALL identifiable fragments were recorded. For all other sites recorded by Stallibrass, only fragments retaining predesignated diagnostic zones were recorded (in order to reduce the likelihood that highly fragmented large bones, such as those of cattle, would be over-represented compared to those of smaller animals, such as sheep and young pigs). Stallibrass's recording system includes every element in the skeleton. Izard and Connell & Davis also used diagnostic zones (different sets) but both restricted the ranges of elements that they recorded. This means that the total numbers of fragments recorded are far smaller than the total numbers of fragments recovered.

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